Cameroon

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

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: 1

There is evidence that Cameroon has a national antimicrobial resistance (AMR) plan, however, it accounts for the surveillance and detection of priority AMR pathogens and does not clearly articulate a reporting strategy. The AMR action plan was validated in July 2018 and has a priority action to improve the "AMR surveillance system", with an objective to "improve the capacity to detect and respond to AMR cases". It's specific surveillance and detection activities with their respective budgets include: 1/ Develop a national AMR framework and monitoring document (16 785 000 XAF [$30,824 USD]); 2/ Develop a list of priority AMR germs in human, animal and plant health and establish a list of designated laboratories that can carry out detection of these germs (45 000 000 XAF [$82,639 USD]); 3/ Update and disseminate sector specific Standard Operating Procedures (SOPs) that include all aspects of fighting against AMR and guides the surveillance of infections caused by AMR pathogens (72 200 000 XAF [$132,589 USD]); 4/ Strengthen the Ministry of Health, Ministry of Agriculture, and Ministry of the Environment's laboratory's technical platforms for the detection of AMR and analysis of antimicrobial residues (232 124 500 XAF [$426,277 USD]); 5/ Map out the laboratories in charge of the detection and monitoring of human and animal AMR (12 500 000 XAF [$22,955 USD]). [1,2,3,4] The 2017 Joint External Evaluation report for Cameroon is now out of date as it states that there is no national plan for the detection of AMR pathogens. [5] The most recent AMR self-assessment available on the World Health Organisation (WHO)'s Global Database for Animicrobial Resistance Country Self-Assessment is from 2017-2018 and only mentions that the AMR Action Plan was being developed. [6] No additional information is available on the Ministry of Public Health, and the WHO library of national AMR action plans does not list the Action Plan. [7,8]

[1] Abeng, M. 7 Jul 2018. "Action plan on antimicrobial resistance validated (Le Plan d'action pour la résistance aux antimicrobiens validé)". Cameroon-Report.com. [https://cameroon-report.com/sante/le-plan-daction-pour-la-resistance-aux-antimicrobiens-valide/]. Accessed 21 September 2020.
[2] Tsayid, G. 13 Nov 2018. "Correct use of antibiotics: Awareness week (Bon usage des antibiotiques: Une semaine pour sensibiliser)". [https://www.cameroon-tribune.cm/article.html/22194/fr.html/bon-usage-antibiotiques-une-semaine-pour-sensibiliser]. Accessed 21 September 2020.
[3] Republic of Cameroon (Republique du Cameroun). May 2018. "National action plan on antimicrobial resistence 2018 - 2020 (Plan d'Action national de lutte contre la resistance aux antimicrobiens)". [http://cdnss.minsante.cm/sites/default/files/PLAN%20RAM%20FINAL.pdf]. Accessed 21 September 2020.
[4] Mouiche, M.M.M., Moffo, F., Akoachere, J.T.K. et al. March 2019. "Antimicrobial resistance from a one health perspective in Cameroon: a systematic review and meta-analysis". [https://doi.org/10.1186/s12889-019-7450-5]. Accessed 22 September 2020.
[5] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-

fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 21 September 2020.
[6] World Health Organisation (WHO). "Global database for antimicrobial resistance country self assessment." [http://amrcountryprogress.org/]. Accessed 21 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 21 September 2020.
[8] World Health Organisation (WHO). "Library of national action plans." [https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 21 September 2020.

1.1.1b

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

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

Current Year Score: 1

Cameroon has a national laboratory system with designated laboratories conducting detection and notification for at least two priority AMR pathogens: N. gonorrheae and Mycobacterium tuberculosis. According to the 2017 Joint External Evaluation report (JEE), as well as the National Antimicrobial Resistance (AMR) Action Plan 2018-2020, the AMR detection and notification is carried out by 13 public health laboratories, 1 animal health laboratory and an unspecified number of research laboratories. Two of these, the Cameroon Pasteur Centre (CPC) and the National Public Health Laboratory (LNSP) are designated as AMR national reference laboratories (NRL). As well, the JEE and Cameroon's National AMR Action Plan list the priority diseases that the country has the capacity to detect, prevent and control, which include: rabies, anthrax, avian flu, Ebola, and Tuberculosis. Both the plan and the report also recommend implementing sentinel surveillance systems for infections caused by AMR pathogens, suggesting that a surveillance system does not currently exist. [1,2] No further evidence since the development of these two documents in 2017 and in 2018, respectively, was found. The LNSP has no online presence, nor is there information about its capabilities or surveillance work on the website of the Ministry of Public Health. [3] The CPC hosts the NRL for multiresistant tuberculosis, which coordinates a laboratory surveillance network for resistance. [4] In addition, the sub-regional reference laboratory for the Gonococcal antimicrobial surveillance programme (GASP) in Central Africa, conducts AMR surveillance for N. gonorrhoeae. [5]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 21 September 2020.
[2] Republic of Cameroon (Republique du Cameroun). May 2018. "National action plan on antimicrobial resistence 2018 - 2020 (Plan d'Action national de lutte contre la resistance aux antimicrobiens)". [http://cdnss.minsante.cm/sites/default/files/PLAN%20RAM%20FINAL.pdf]. Accessed 21 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 21 September 2020.
[4] Cameroon Pasteur Centre (CPC). N.d. "Surveillance of multiresistant tuberculosis (Surveillance de la tuberculose multirésistante)". [http://www.pasteur-yaounde.org/index.php/fr/nos-recherches-tuberculose/surveillance-de-la-tuberculose-multiresistante]. Accessed 21 September 2020.
[5] Cameroon Pasteur Centre (CPC). 2014. [http://www.pasteur-yaounde.org/images/docs/1racpc2014.pdf]. Accessed 21 September 2020.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the government conducts environmental detection tests or surveillance activities for antimicrobial residues or antimicrobial resistant (AMR) organisms. The 2017 Joint External Evaluation (JEE) report states that "Public health laboratories provide essential services including detection of diseases and epidemics, emergency response, disease surveillance and environmental surveillance", however at no other point does the report elaborate on environmental surveillance activities or tests for AMR organisms. [1] The National Antimicrobial Resistance (AMR) Action Plan 2018-2020 states that from an environmental standpoint, the management of AMR is governed by regulations that specifically focus on the management of waste and chemical, toxic and dangerous products, protection of natural environments (soil, subsoil and watercourses) against anthropogenic pollution and of biosafety. The plan shares findings from a Knowledge, Attitudes, Practices (KAP) survey conducted in 2017, which reported that for the animal and environmental health component, 82% of veterinary care providers understand the main causes of AMR, as well as proper antimicrobial, drug and waste management practices, however the AMR prevention practices observed were inadequate. The plan also acknowledges that regardless of the field of antimicrobial use (human medicine, veterinary, livestock or agricultural), a significant amount of antimicrobials have been found in the environment (waste water and groundwater) thus increasing the risk of selection of resistant bacterial strains. No evidence is available, however, of environmental tests or the environmental surveillance of activities for AMR organisms. [2] The most recent AMR self-assessment on the World Health Organisation (WHO)'s Global Database for Animicrobial Resistance Country Self-Assessment is from 2017-2018 and mentions that Cameroon has a functioning system for monitoring regulatory compliance of discharge to the environment for some types of waste (sewage, health facilities, agriculture, manure and/or industrial effluent) but makes no mention of environmental tests for AMRs. [3] There is no other evidence of AMR surveillance activities on the Ministry of the Environment or the Ministry of Health's websites. [4,5]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 22 September 2020.
[2] Republic of Cameroon (Republique du Cameroun). May 2018. "National action plan on antimicrobial resistence 2018 - 2020 (Plan d'Action national de lutte contre la resistance aux antimicrobiens)". [http://cdnss.minsante.cm/sites/default/files/PLAN%20RAM%20FINAL.pdf]. Accessed 22 September 2020.
[3] World Health Organisation (WHO). "Global database for antimicrobial resistance country self assessment." [http://amrcountryprogress.org/]. Accessed 22 September 2020.
[4] Ministry of the Environment, Protection of Nature and Sustainable Development (MINEP). [http://www.minep.gov.cm/]. Accessed 22 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 22 September 2020.

1.1.2 Antimicrobial control

1.1.2a

Is there national legislation or regulation in place requiring prescriptions for antibiotic use for humans?
Yes = 2 , Yes, but there is evidence of gaps in enforcement = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to suggest that Cameroon has regulations in place requiring prescriptions for antibiotic use for humans. The country's AMR self-assessment submitted to the World Health Organisation (WHO) for 2017-18 states there is a "system designed for surveillance of antimicrobial use, that includes monitoring national level sales or consumption of

antibiotics in health services" but does not specify whether the national level monitoring includes regulations around antibiotic prescriptions. [1] A 2011 review of Cameroon's pharmaceutical sector by the WHO states that there are regulations restricting the delivery of medications to prescribers, citing Decree No. 90/062 of 10 August 1990, but adds that sometimes antibiotics are sold without prescription. [2] Decree No. 90/062 is not available on the Ministry of Health, the Camerlex or Droit Afrique databases of laws in Cameroon. [3,4,5] There is significant evidence of misuse of antibiotic medication. A study conducted in 2015 on the Knowledge, Attitudes, and Practices (KAP) of antibiotics concludes that there is "Misuse, little 'practical knowledge' and high self-medication [which] confirm the unsatisfactory prescription and dispensing practices of the antibiotics in our country". [6] Infectious and AMR problems are also common in hospital settings due to, among other things, misuse of antimicrobials and inappropriate prescription patterns. [7,8] Finally, an article describing the use of street medications in Cameroon explains that although there are specific regulations against selling medications in the streets and that those who do so are liable to prosecution, that it is still a common practice. [9] There is no mention of prescription regulations in the 2017 Joint External Evaluation (JEE) report for Cameroon. [10]

[1] World Health Organisation (WHO). "Global database for antimicrobial resistance country self assessment." [http://amrcountryprogress.org/]. Accessed 22 September 2020.
[2] World Health Organisation (WHO). 2011. "Cameroon: Pharmaceutical country profile (Cameroun: Profil pharmaceutique du pays)". [https://www.who.int/medicines/areas/coordination/Cameroon_PSCPNarrativeQuestionnaire_FR_28062011.pdf]. Accessed 22 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 22 September 2020.
[4] Droit-Afrique. "Cameroon - Documents - Sectoral law (Cameroun - Documentation - Droit sectorial)". [https://www.droit-afrique.com/pays/cameroun/#documentation]. Accessed 22 September 2020.
[5] Camerlex. Official website. [https://www.camerlex.com/]. Accessed 22 September 2020.
[6] Elong Ekambi, G. A., Okalla Ebongue, C., Penda, I. C., Nnanga Nga, E., Mpondo Mpondo, E., & Eboumbou Moukoko, C. E. February 2019. "Knowledge, practices and attitudes on antibiotics use in Cameroon: Self-medication and prescription survey among children, adolescents and adults in private pharmacies". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6394986/]. Accessed 22 September 2020.
[7] Chem ED., Anong DN., Akoachere J-FKT. March 2018. "Prescribing patterns and associated factors of antibiotic prescription in primary health care facilities of Kumbo East and Kumbo West Health Districts, North West Cameroon". [https://doi.org/10.1371/journal.pone.0193353]. Accessed 22 September 2020.
[8] Mouiche, M.M.M., Moffo, F., Akoachere, J.T.K. et al. March 2019. "Antimicrobial resistance from a one health perspective in Cameroon: a systematic review and meta-analysis". [https://doi.org/10.1186/s12889-019-7450-5]. Accessed 22 September 2020.
[9] Stopblablacam. July 2019. "Yes, street medicines are banned in Cameroon". [https://www.stopblablacam.com/culture-and-society/1207-2828-yes-street-medicines-are-banned-in-cameroon]. Accessed 22 September 2020.
[10] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 22 September 2020.

1.1.2b

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

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

Current Year Score: 0

There is no evidence to show that Cameroon has regulations in place requiring prescriptions for antibiotic use for animals. The country's AMR self-assessment submitted to the World Health Organisation (WHO) for 2017-18 states that there are no

regulations preventing the use of critically-important antimicrobials for growth promotion in livestock. [1] However, Law no. 2000/018 on veterinary pharmacy states that veterinary medications (including medicated feed) can only be distributed by veterinarians or authorised groups of livestock farmers. The latter can distribute medicines to members under the supervision of a veterinarian designated by the government to oversee their area. Unauthorised people or entities may not sell animal medicines. [2] There is no mention of prescription regulations for animals in the 2017 Joint External Evaluation (JEE) report for Cameroon. [3] The National Antimicrobial Resistance (AMR) Action Plan 2018-2020 states non-compliance with prescription standards in human and animal health reinforces AMR but there is no further mention of prescription regulations in the document. [4] There is no further evidence on the websites of the Ministry of Public Health or the Ministry of Agriculture. [5,6]

[1] World Health Organisation (WHO). 2018. "Global database for antimicrobial resistance country self assessment." [http://amrcountryprogress.org/]. Accessed 22 September 2020.
[2] Government of Cameroon. 2000. "Law no. 2000/018 of 19 December 2000 regulating veterinary pharmacy (Loi no. 2000/018 du 19 décembre 2000 portant réglementation de la pharmacie vétérinaire)". [https://www.onvc.org/wp-content/uploads/2011/12/Pharmacie_Veterinaire.pdf]. Accessed 22 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 22 September 2020.
[4] Republic of Cameroon (Republique du Cameroun). May 2018. "National action plan on antimicrobial resistence 2018 - 2020 (Plan d'Action national de lutte contre la resistance aux antimicrobiens)". [http://cdnss.minsante.cm/sites/default/files/PLAN%20RAM%20FINAL.pdf]. Accessed 22 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 22 September 2020.
[6] Ministry of Agriculture, Fisheries, and Livestock. [http://www.minepia.cm/]. Accessed 22 September 2020.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Cameroon has a national legislation, plans, or equivalent strategy documents on zoonotic disease, however the plan does not seem to be publically available. According to the 2017 Joint External Evaluation (JEE) of Cameroon, surveillance systems exist for priority zoonotic diseases (human and animal health), as well as a multi-sectoral response framework and laboratories ensuring epidemiological and diagnostic surveillance at the regional level. The report also mentions the establishment of the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses, citing the Decree N ° 28 / CAB / PM of 04 April 2014, which promotes the concept "One Health" through a multi-sectoral and multi-actor approach. [1] However, the relevant legislation/plans, including the Decree, are not available online from the Ministry of Livestock or the Ministry of Public Health website. [2,3] Law no. 006 of 2001 identifies notifiable animal diseases and response procedures. The notifiable diseases include zoonoses (eg tuberculosis and anthrax) and non-zoonotic animal diseases; zoonoses are not separately identified. [4] MINEPIA published a general policy document in 2013 which (among other issues) addresses zoonotic and non-zoonotic animal diseases, identifies zoonoses to address and outlines budgetary needs for 2014-2018. It does not articulate a strategy for combatting zoonoses. [5] In 2016, Cameroon conducted a

workshop with international partners to prioritize zoonotic diseases. The workshop report recommended developing a national multisectoral strategic plan on zoonoses but no evidence was found of a strategic plan being developed since this workshop. [6] A recent study on zoonotic disease risk perception in bushmeat markets found that "risks associated with blood contact and animal infection were not well understood by most market actors". The study discusses regulations with regards to hunting and sale of bushmeat but makes no mention of other legislations or plans with regards to zoonotic diseases. [7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[2] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). [http://www.minepia.cm/]. Accessed 23 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.
[4] Government of Cameroon. 2001. "Law no. 006 of 16 April 2001 on nomenclature and zoosanitary regulations for livestock diseases deemed legally contagious and notifiable (Loi no. 006 du 16 avril 2001 portant nomenclature et règlement zoo sanitaire des maladies du bétail réputées légalement contagieuses et à déclaration obligatoire)". [http://www.vertic.org/media/National%20Legislation/Cameroon/CM_Loi_Zoo_Sanitaire.pdf]. Accessed 23 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). March 2013. "MINEPIA policy document (Document de politique de MINEPIA)". [http://www.minepia.cm/]. Accessed 23 September 2020.
[6] Centers for Disease Control and Prevention (CDC) and United States Agency for International Development (USAID): Preparedness & Response. 2016. "Zoonotic disease prioritisation for intersectoral engagement in Cameroon." [https://www.cdc.gov/onehealth/pdfs/Cameroon-french-508.pdf]. Accessed 23 September 2020.
[7] Saylors, E.K., Moctar M. Mouiche, Ashley Lucas, David J. McIver, Annie Matsida, Catherine Clary, Victorine T. Maptue, Jason D. Euren, Matthew LeBreton, Ubald Tamoufe. September 2020. "Market Characteristics and Zoonotic Disease Risk Perception in Cameroon Bushmeat Markets". [https://www.sciencedirect.com/science/article/pii/S0277953620305773#sec5]. Accessed 23 Septebmer 2020.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is evidence of a national legislation, plan or equivalent strategy document(s) that addresses transmission of zoonotic diseases from animals to humans, however there is insufficient evidence that the plan includes measures for risk identification and reduction for zoonotic disease spillover events, as the plan is not publicaly available.

Presentation slides prepared by the Centers for Disease Control and Prevention (CDC) on the Cameroon Animal Health System and Emegency Management Program lists the National Animal Health Laws and Regulations, which includes: Law No 86/711 of June 14, 1986 which mandates to the Minister in charge of animal health the activity of Veterinary health inspection to ensure that commodity is fit for consumption. However, no publically available evidence was found of the law to determine its exact contents. The presentation also references the Decree N. 28/CAB/PM of 04 April 2014 which is the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses, and states that one of its five objectives is to "Mitigate risk of transmission of zoonosis among human and animals". No further details on the Decree was available. [1]

As well, a recent study on zoonotic disease risk perception in bushmeat markets states that the Ministry of Forestry and Wildlife (MINFOF) "is the government agency tasked with regulation of hunting and sale of bushmeat, and they are the enforcement entity responsible for meat confiscation or requests for proof of permit documentation". However, according to vendors interviewed in the study, authorities are inconsistent in their regulation of bushmeat practices. The study concluded that "risks associated with blood contact were not well understood, and most market actors demonstrated a lack of knowledge of risk infection and participants who did achknowledge disease transmission risk generally ignored risks due to economic circumstances or past experiences". [2]

The 2017 Joint External Evaluation (JEE) of Cameroon mentions the establishment of the National Program, however does not elaborate on whether risk identification measures are included in it. [3] No evidence of the legislations were found on the websites for the Ministry of Public Health, the Ministry of Forestry and Wildlife, or the Ministry of Agriculture, Fisheries, and Livestock. [4,5,6]

[1] Slideshare. Centers for Disease Control and Prevention (CDC). January 2018. "Cameroon Animal Health System and Emergency Management System". [https://www.slideshare.net/arseneefoua/cameroon-animal-health-system-emergency-management-system]. Accessed 23 September 2020.
[2] Saylors, E.K., Moctar M. Mouiche, Ashley Lucas, David J. McIver, Annie Matsida, Catherine Clary, Victorine T. Maptue, Jason D. Euren, Matthew LeBreton, Ubald Tamoufe. September 2020. "Market Characteristics and Zoonotic Disease Risk Perception in Cameroon Bushmeat Markets".
[https://www.sciencedirect.com/science/article/pii/S0277953620305773#sec5]. Accessed 23 Septebmer 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 22 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.
[5] Ministry of Forestry and Wildlife. [http://minfof.cm/]. Accessed 23 September 2020.
[6] Ministry of Agriculture, Fisheries, and Livestock. [http://www.minepia.cm/]. Accessed 22 September 2020.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of national plans, guidelines, or laws that account for the surveillance and control of at least three zoonotic pathogens of public health concern. There is, however, evidence that Cameroon has national plans accounting for the surveillance and control of just two zoonotic pathogens of public health concern, and evidence that suggests that surveillance in practice goes beyond these two diseases. According to the 2017 Joint External Evaluation of Cameroon, action plans for surveillance of and response to zoonotic diseases are being developed with multi-sector collaboration; the Decree N. 28/CAB/PM of 04 April 2014 was also developed to implement the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses; and there are plans for surveillance, prevention and control of Ebola and avian influenza. [1] The website of the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA, responsible for the above-mentioned Programme) states that surveillance has expanded to other diseases beyond avian influenza but does not specify which, and does not link to any plans. [2] A 2013 MINEPIA policy document assigns budgets for surveillance and response to specific zoonoses, including animal influenzas, Rift Valley fever, Lassa fever, Marburg and Ebola viruses, tuberculosis, brucellosis and rabies, but does not provide/mention plans for each. [3] In 2016, Cameroon conducted a workshop with international

partners to prioritise zoonotic diseases. The workshop report recommended developing emergency plans for selected zoonoses and updating existing plans. [4] No publically available plans were available from MINEPIA or the Ministry of Public Health websites. [2,5] Media reporting from 31 May 2018 confirms the unavailability of the Ebola plan. [6] There is an apparent cholera contingency plan that was activated in May 2018, following the cholera outbreak, but it is unclear whether the contingency plan includes surveillance and control of the disease. [7] No other publically available evidence was found.

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[2] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). "Health mandate: Protection of livestock and veterinary public health (Mandat sanitaire: Protection du cheptel et santé publique vétérinaire)". [http://www.minepia.cm/filieres/protection-sanitaire/mandat-sanitaire/]; and "Documents (Documentation)". [http://www.minepia.cm/mediatheque/documentations/]. Accessed 23 September 2020.
[3] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). March 2013. "MINEPIA policy document (Document de politique de MINEPIA)". [http://extwprlegs1.fao.org/docs/pdf/cmr159243.pdf]. Accessed 23 September 2020.
[4] Centers for Disease Control and Prevention (CDC) and United States Agency for International Development (USAID): Preparedness & Response. 2016. "Zoonotic disease prioritisation for intersectoral engagement in Cameroon." [https://www.cdc.gov/onehealth/pdfs/Cameroon-french-508.pdf]. Accessed 23 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.
[6] CamerounWeb. 31 May 2018. "Ebola virus: blurry on prevention in Cameroon (Virus Ebola: flou sur la prévention au Cameroun)". [https://www.camerounweb.com/CameroonHomePage/health/Virus-Ebola-flou-sur-la-pr-vention-au-Cameroun-440578#]. Accessed 23 September 2020.
[7] World Health Organization (WHO). June 2018. "Emergencies preparedness, response". [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 23 September 2020.

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 insufficient evidence that Cameroon has an entity dedicated to zoonotic disease that functions across ministries with clear joint funding/operations.

Cameroon has a unit called the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses (NPPCERZ) which is a zoonotic disease department which collaborates with other Ministries. [1,2] According to a guide describing various countries' approach to addressing zoonotic diseases, co-published in 2019 by the Food and Agriculture Organization (FAO), the World Organisation for Animal Health, and the World Health Organization (WHO), "Cameroon has developed a three-tiered multisectoral coordination mechanism under the supervision of the Prime Minister. The secretary general of the PM's office chairs the strategic orientation committee (first-tier) which is comprised of 11 ministers; the Minister of Livestock, Fisheries and Animal Industries and the Minister of Public Health act as co-chairs. A senior officer at the Prime Minister's office chairs the technical committee (second-tier) which is comprised of senior directors of the 11 ministries; the Director of Veterinary Services acts as co-chair. The Ministry of Livestock, Fisheries and Animal Industries hosts the permanent secretariat (third-tier)". [3] It has been described in local media reporting as an "interministerial organ" led by the Ministry of Livestock. [4]

In 2016, Cameroon conducted a workshop with international partners to prioritise zoonotic diseases. The workshop report assigns actions to a "secretariat for zoonotic diseases", but it is unclear whether or not this refers to a secretariat under the NPPCERZ. [5] And the Centers for Disease Control and Prevention (CDC) makes reference to a Zoonotic Disease Secretariat for Cameroon in an overview of Zoonotic Disease Programs. [6] No information was found on the websites for the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) or from the National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun) (LANAVET). [7,8] The 2017 Joint External Evaluation (JEE) report does not mention any cross-ministerial entity dedicated to zoonotic disease. [9]

[1] Cameroon Tribune. March 2017. "Health: animals attention (Sante: attention, animaux)". [https://www.cameroon-tribune.cm/article.html/6534/fr.html/sante-attention-animaux]. Accessed 12 November 2020.
[2] AfricaVet. May 2020. "Cameroon: national consultant for the development of a surveillance manual on zoonotic wild fauna (Cameroun : Consultant national pour l'élaboration d'un manuel de surveillance des zoonoses chez la faune sauvage)". [http://www.africavet.com/index.php/jobs/call-grants/cameroun-consultant-national-pour-l-elaboration-d-un-manuel-de-surveillance-des-zoonoses-chez-la-faune-sauvage]. Accessed 12 November 2020.
[3] The Food and Agriculture Organization (FAO); The World Organisation for Animal Health; The World Health Organization (WHO). 2019. "Taking a Multisectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries". [Programme national de prévention contre les zoonoses émergentes et réémergentes". [https://ghsagenda.org/wp-content/uploads/2020/06/tzg-2019.pdf]. Accessed 12 November 2020.
[4] Mbeze, B. 29 Mar 2017. "Cameroon: MINEPIA launches prevention of animal diseases (Cameroun: Le MINEPIA lance la prévention contre les maladies animals)". Cameroon Tribune via All Africa [https://fr.allafrica.com/stories/201703300778.html]. Accessed 23 September 2020.
[5] Centers for Disease Control and Prevention (CDC) and United States Agency for International Development (USAID): Preparedness & Response. 2016. "Zoonotic disease prioritisation for intersectoral engagement in Cameroon." [https://www.cdc.gov/onehealth/pdfs/Cameroon-french-508.pdf]. Accessed 23 September 2020.
[6] Centers for Disease Control and Prevention (CDC). December 2017. "Zoonotic Disease Programs for Enhancing Global Health Security". [https://wwwnc.cdc.gov/eid/article/23/13/17-0544_article]. Accessed 23 September 2020.
[7] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). "Documents (Documentation)". [http://www.minepia.cm/mediatheque/documentations/]. Accessed 23 September 2020.
[8] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 23 September 2020.
[9] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 1

Cameroon has a legal requirement for livestock owners to report notifiable disease outbreaks to local public authorities, and a mechanism for reporting to the central public veterinary services is outlined in recent disease-specific plans. Law no. 006 of 16 April 2001 identifies a list of livestock diseases deemed legally contagious and notifiable, and states that other diseases

can be added to the list through regulations. It requires animal owners to provide a written report of notifiable diseases to the local administrative and veterinary authorities. Local veterinary service officers are then required to visit the infected animal(s) and issue an order declaring where the sick or contaminated animal is located to the person above them in the veterinary services hierarchy. [1] Law no. 017 of 19 December 2000 regulating veterinary health inspection identifies a list of notifiable zoonoses, but appears to apply only to veterinarians and does not mention reporting to central government authorities. [2] The 2017 Joint External Evaluation states that there is a system of animal health surveillance, established through the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses (NPPCERZ), but does not cite specific documents or mention a mechanism for livestock owners to report to the national level. [3] In 2015, the United Nations Food and Agriculture Organisation (FAO) reported on its support for Cameroon to develop plans for controlling 4 key livestock diseases (not including any zoonoses). [4] A 2015 plan for Newcastle disease created with this FAO support outlines a mechanism for livestock owners to report outbreaks to the central veterinary services. Health defence groups are to be established in each village to represent livestock owners and report outbreaks to local veterinary services. The local veterinary officer alerts the Directorate of Veterinary Services' national coordination centre. [5] No documents with details on the wider NPPCERZ are available from the livestock ministry. [6]

[1] Government of Cameroon. 2001. "Law no. 006 of 16 April 2001 on nomenclature and zoosanitary regulations for livestock diseases deemed legally contagious and notifiable (Loi no. 006 du 16 avril 2001 portant nomenclature et règlement zoo sanitaire des maladies du bétail réputées légalement contagieuses et à déclaration obligatoire)". [http://www.vertic.org/media/National%20Legislation/Cameroon/CM_Loi_Zoo_Sanitaire.pdf]. Accessed 23 September 2020.
[2] Government of Cameroon. 2001. "Law no. 2000/017 of 19 December 2000 regulating veterinary health inspection (Loi no. 2000/017 du 19 décembre 2000 portant réglementation de l'inspection sanitaire vétérinaire)". [http://www.vertic.org/media/National%20Legislation/Cameroon/CM_Loi_Inspection_Sanitaire_Veterinaire.pdf]. Accessed 23 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[4] United Nations Food and Agriculture Organisation (FAO). 2015. "Support for the improved control of transboundary commercial livestock diseases: Cameroon - Project conclusions and recommendations (Appui à l'amélioration du contrôle des maladies transfrontalières du bétail objet du commerce)". [https://www.standardsfacility.org/sites/default/files/STDF_PG_336_FinalReport_Aug-15.pdf]. Accessed 23 September 2020.
[5] United Nations Food and Agriculture Organisation (FAO) and Government of Cameroon. February 2015. "Strategic plan for preventing and combatting Newcastle disease in the traditional poultry sector in Cameroon (Plan stratégique de prévention et de lutte contre la maladie de Newcastle dans le secteur avicole traditionnel au Cameroun)". [http://www.standardsfacility.org/sites/default/files/STDF_PG_336_Strategic_Plan_Newcastle_Feb-15.pdf]. Accessed 23 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). [http://www.minepia.cm/]. Accessed 23 September 2020.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has laws or guidelines safeguarding the confidentiality of livestock owners' information collected through surveillance. Law no. 006 of 16 April 2001, which requires reporting of livestock diseases deemed legally contagious, does not address confidentiality. [1] The 2017 Joint External Evaluation states that there is a system of animal health surveillance, established through the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses (NPPCERZ). It does not mention confidentiality. [2] The available information on the NPPCERZ from the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) does not mention confidentiality (no plan/strategy documents are available). [3] A 2015 report by the United Nations Food and Agriculture Organisation (FAO) on developing Cameroon's animal disease control system does not mention confidentiality, and nor does a 2015 plan for controlling Newcastle disease created with FAO support. [4,5] The United Nations Conference on Trade and Development (UNCTAD)'s database of data protection and cybersecurity does not list any laws on data protection and privacy in Cameroon. [6] The country has laws on electronic communications, cybersecurity and consumer protection, but the content of these is not relevant to disease surveillance data protection. [7,8,9] And a data protection overview for Cameroon published in March 2020 makes no mention of a plan or laws having to do with disease surveillance data protection. [10] No further evidence was found on the websites for the Ministry of Public Health and the Ministry of Agriculture. [11,12]

[1] Government of Cameroon. 2001. "Law no. 006 of 16 April 2001 on nomenclature and zoosanitary regulations for livestock diseases deemed legally contagious and notifiable (Loi no. 006 du 16 avril 2001 portant nomenclature et règlement zoo sanitaire des maladies du bétail réputées légalement contagieuses et à déclaration obligatoire)". [http://www.vertic.org/media/National%20Legislation/Cameroon/CM_Loi_Zoo_Sanitaire.pdf]. Accessed 23 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[3] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). 2018. "Health mandate: Protection of livestock and veterinary public health (Mandat sanitaire: Protection du cheptel et santé publique vétérinaire)". [http://www.minepia.cm/filieres/protection-sanitaire/mandat-sanitaire/]; and "Documents (Documentation)". [http://www.minepia.cm/mediatheque/documentations/]. Accessed 23 September 2020.
[4] United Nations Food and Agriculture Organisation (FAO). 2015. "Support for the improved control of transboundary commercial livestock diseases: Cameroon - Project conclusions and recommendations (Appui à l'amélioration du contrôle des maladies transfrontalières du bétail objet du commerce)". [https://www.standardsfacility.org/sites/default/files/STDF_PG_336_FinalReport_Aug-15.pdf]. Accessed 23 September 2020.
[5] United Nations Food and Agriculture Organisation (FAO) and Government of Cameroon. February 2015. "Strategic plan for preventing and combatting Newcastle disease in the traditional poultry sector in Cameroon (Plan stratégique de prévention et de lutte contre la maladie de Newcastle dans le secteur avicole traditionnel au Cameroun)". [http://www.standardsfacility.org/sites/default/files/STDF_PG_336_Strategic_Plan_Newcastle_Feb-15.pdf]. Accessed 23 September 2020.
[6] United Nations Conference on Trade and Development (UNCTAD). 2018. "Cyberlaw tracker: The case of Cameroon." [https://unctad.org/en/Pages/DTL/STI_and_ICTs/ICT4D-Legislation/CountryDetail.aspx?country=cm]. Accessed 12 December 2018.
[7] Government of Cameroon. 2010. "Law no. 2010/013 of 21 December 2010 regulating electronic communications in Cameroon (Loi no. 2010/013 du 21 décembre 2010 régissant les communications électroniques au Cameroun)". [http://www.art.cm/sites/default/files/documents/Loi_2010-013_communications_electroniques.pdf]. Accessed 23 September 2020.
[8] Government of Cameroon. 2010. "Law no. 2010/012 of of 21 December 2010 on cybersecurity and cybercriminality in Cameroon (Loi no. 2010/012 du 21 décembre 2010 relative à la cybersécurité et la cybercriminalité au Cameroun)". [https://www.unodc.org/res/cld/document/cmr/2010/loi_sur_la_cybersecurite_et_la_cybercriminalite_html/Loi_2010-012_cybersecurite_cybercriminalite.pdf]. Accessed 23 September 2020.

[9] Government of Cameroon. "Framework law no. 2012/012 providing consumer protection in Cameroon (Loi-cadre no. 2012/012 portant protection du consommateur au Cameroun"). [http://www.art.cm/sites/default/files/documents/LOI-CADRE%20N%C2%B02011-012%20DU%2006%20Mai%202011%20SUR%20LA%20PROTECTION%20DU%20CONSOMMATEUR.pdf]. Accessed 23 September 2020.
[10] LEXAfrica. March 2020. "Data protection overview in Cameroon". [https://www.lexafrica.com/2020/03/data-protection-overview-in-cameroon/]. Accessed 23 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.
[12] Ministry of Agriculture, Fisheries, and Livestock. [http://www.minepia.cm/]. Accessed 27 September 2020.

1.2.2c

Does the country conduct surveillance of zoonotic disease in wildlife (e.g., wild animals, insects, other disease vectors)?
Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that Cameroon conducts surveillance of zoonotic disease in wildlife. There is evidence of several surveillance systems that have reported on zoonotic diseases. According to the 2017 Joint External Evaluation for Cameroon, the laboratory of the Military Health Research Centre (CRESAR) conducts surveillance for zoonoses in wildlife. It led pilot initiative looking at Ebola and Filovirus. The report further states, however, that despite the efforts made, the country's surveillance of wildlife is insufficient. [1] Since CRESAR's inception in 2000, it is said to have "greatly contributed to public health in Cameroon" such as in the surveillance of infections. According to an AllAfrica article published in 2020, CRESAR has served as a reference laboratory during the COVID-19 pandemic for testing of civilian populations and soldiers. Previous to this, it has gone "into annals of health history in Cameroon in the domain of the surveillance of infections" and helped confirm "the outbreak of monkey pox in wild animals between 2014 and 2016, surveillance of human influenza and also confirmed the diagnosis of highly pathogenic avian influenza (H5NI) in 2016". [2,3] Further Cameroonian efforts to put surveillance systems in place for zoonotic diseases include a 2013 policy document published by the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA), which called for the wildlife surveillance network to be reestablished. [4] As well, Cameroon reported an outbreak of avian influenza among wild birds to the World Organisation for Animal Health (OIE) in February 2017, discovered through the avian influenza system operated by the National Veterinary Laboratory (LANAVET) and local veterinary services. [5] A study conducted between 2014 and 2016 looked at ways to improve the systematic rabies surveillance system in Cameroon and discusses there being a nationwide surveillance system in place. It further explains that the surveillance system does not cover all regions in the country and therefore the system likely underestimates the burdens of animal exposures. [6] No further evidence was found on the websites for the Ministry of Public Health, Ministry of Livestock, Fisheries and Animal Industries (MINEPIA), or the National Veterinary Laboratory (LANAVET). [7,8,9]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[2] Cameroon Blog. May 2018. "The military research center (CRESAR), an up-to-date research centre". [https://cameroonblog.info/2018/05/22/the-military-research-center-cresar-an-up-to-date-research-centre/#:~:text=The%20military%20Health%20and%20Research%20Center%20%28CRESAR%29%20was,as%20well%20as%20the%20civilian%20populations%20of%20Cameroon.]. Accessed 12 November 2020.
[3] AllAfrica. October 2020. "Cameroon: Mindef - Minister Encourages Army Health Research Centre". [https://allafrica.com/stories/202010190261.html]. Accessed 12 October 2020.
[4] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). March 2013. "MINEPIA policy document (Document de

politique de MINEPIA)". [http://extwprlegs1.fao.org/docs/pdf/cmr159243.pdf]. Accessed 23 September 2020.
[5] World Organisation for Animal Health (OIE). 15 Feb 2017. "Highly pathogenic A influenza (inf. By virus of) (other than poultry hence wild birds), Cameroon (Influenza A hautement pathogène (inf. par virus de) (autres que volailles dont oiseaux sauvages), Cameroun)".
[http://www.oie.int/wahis_2/public/wahid.php/Reviewreport/Review?page_refer=MapFullEventReport&reportid=22853]. Accessed 23 September 2020.
[6] PLOS Neglected Tropical Diseases. September 2018. "Improving systematic rabies surveillance in Cameroon: A pilot initiative and results for 2014-2016".
[https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0006597#pntd.0006597.ref038]. Accessed 23 September 2020.
[7] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). "Health mandate: Protection of livestock and veterinary public health (Mandat sanitaire: Protection du cheptel et santé publique vétérinaire)".
[http://www.minepia.cm/filieres/protection-sanitaire/mandat-sanitaire/]; and "Documents (Documentation)".
[http://www.minepia.cm/mediatheque/documentations/]. Accessed 23 September 2020.
[8] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET".
[https://www.onvc.org/lanavet/]. Accessed 23 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

Has the country submitted a report to OIE on the incidence of human cases of zoonotic disease for the last calendar year?
Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people
Input number

Current Year Score: -

No data available

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people
Input number

Current Year Score: -

No data available

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Cameroon has a law or plan guiding strategy on zoonotic disease, or a set mechanism for collaborating with the private sector over zoonoses, though there is evidence that the National Program for the Prevention Against Emerging and Re-Emerging Zoonoses (NPPCERZ) has collaborated with the private sector over Ebola response preparation. According to the 2017 Joint External Evaluation of Cameroon, action plans for surveillance of and response to zoonotic diseases are being developed with multi-sector collaboration, and the country already has legislation on preventing and combatting zoonoses, as well as a prevention programme. It cites Decree N°28/CAB/PM of 4 April 2014, which validated the NPPCERZ. [1] Relevant legislation/plans are not available from the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) or the national veterinary laboratory, which are involved in carrying out surveillance of animal diseases, including zoonoses; or from a wider online search. [2,3] In 2018, USAID also offered Private Sector Partnership Addressing Emerging Zoonoses and Antimicrobial Resistance support to countries where it had Global Health Security and Emerging Threats Programming, Cameroon being one of them. There is no evidence that Cameroon was one of the countries to take on the support, however. [4] No further evidence was found on the websites for the Ministry of Public Health, Ministry of Livestock, Fisheries and Animal Industries (MINEPIA), or the National Veterinary Laboratory (LANAVET). [5,6,7] No other more recent evidence was found of private sector collaboration over zoonoses.

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[2] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). [http://www.minepia.cm/]. Accessed 23 September 2020.
[3] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 23 September 2020.
[4] United States Agency for International Development (USAID). 2018. "Private Sector Partnership Addressing Emerging Zoonses and Antimicrobial Resistance". [https://imlive.s3.amazonaws.com/Federal%20Government/ID161114745486571447548510155147592678388/ETD_Private_Sector_Partnership_BAA_Addendum_2__Amendment_1_Attachment_1.pdf]. Accessed 23 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries (MINEPIA). "Health mandate: Protection of livestock and veterinary public health (Mandat sanitaire: Protection du cheptel et santé publique vétérinaire)". [http://www.minepia.cm/filieres/protection-sanitaire/mandat-sanitaire/]; and "Documents (Documentation)". [http://www.minepia.cm/mediatheque/documentations/]. Accessed 23 September 2020.
[6] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET".

[https://www.onvc.org/lanavet/]. Accessed 23 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

Although Cameroon's national laboratories have established a register of pathogens, there is no evidence with regard to when it was last updated, or of a central government record of facilities in which especially dangerous pathogens and toxins are stored or processed. The 2017 Joint External Evaluation of Cameroon (JEE) notes that the national reference laboratories - the Cameroon Pasteur Centre (CPC), Military Health Research Centre (CRESAR) and National Veterinary Laboratory (LANAVET) - have taken steps to evaluate biosecurity risks with the support of international partners, and have put in place a register of pathogens along with storage and access measures. It does not mention when the register was last updated or how often it is updated. Cameroon lacks a national, integrated biosecurity system for pathogens in laboratories, and also lacks standards and guidelines on the use, inventory or storage of pathogens. The JEE recommends establishing an official classification system for laboratories based on their biological containment capacities. A national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] MINEPDED has not posted such a law, information about its future content, or information on a national register of pathogens on its main website, or on its website dedicated to biosafety. [2,3] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not establish any oversight mechanisms to record which laboratories are handling dangerous biological agents. [4] VERTIC's Biological Weapons Convention (BWC) Legislation Database does not list any documents in Cameroon specific to biosecurity or biological laboratory registration. [5] There is no relevant evidence on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [6,7,8,9] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [10] No further or more updated evidence was found.

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 23 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). 2018. "Laws (Lois)". [http://www.minep.gov.cm/index.php?option=com_docman&task=cat_view&gid=113&Itemid=33&lang=en]. Accessed 23 September 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 23 September 2020.
[5] Vertic. 2018. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-

materials/bwc-legislation-database/c/]. Accessed 23 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 23 September 2020.
[7] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 23 September 2020.
[8] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 23 September 2020.
[9] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 23 September 2020.
[10] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 23 September 2020.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has biosecurity legislation or regulations addressing containment, operation practices, failure reporting or cybersecurity of facilities using or storing especially dangerous pathogens. The 2017 Joint External Evaluation (JEE) of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the Ministry of the Environment (MINEPDED). [1] The MINEPDED website does not provide evidence suggesting that this law is currently in place. [2] In response to the JEE's identification of gaps in the country's management of biosecurity and biosafety mechanisms, the Ministry of Public Health developed a National Biosafety and Biosecurity Laboratory Guide in 2019 that aims to: tie old laboratory practices to new World Health Organization (WHO) standards and guidelines on biosafety; to provide information on safe handling, transport and disposal of equipment and organisms with biological hazards; and Harmonize current laboratory practices at the national level. However, these guidelines do not carry the force of law and are purely recommendations. [3] According to the Environmental Law and Policy in Cameroon, developed in 2018, which summarizes all relevant legislations, there is a Biosafety Law and Policy that was developed in 1993, however there is no mention of especially dangerous pathogens as the document mainly focuses on genetically modified organisms. [4] Cameroon is also a member of and has adopted the Cartagena Protocol, which "obliges contracting parties to ensure that the use, transfer and specifically the trans-boundary movement of living organisms modified through biotechnology is safe with no adverse effect on human/animal health and the environment", however this law again makes no mention of especially dangerous pathogens. [5] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address containment, operation practices, failure reporting or cybersecurity of facilities legally holding/using them. [6] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any laws in Cameroon specific to biosecurity, nor do the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [7,8,9,10,11] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [12]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Ministry of Public Health. July 2019. "Summary of the National Biosafety and Biosecurity Laboratory Guide in Cameroon".

[https://dpml.cm/index.php/en/publications/good-practice-guide/biological-and-medical-analysis-laboratories/422-summary-of-the-national-biosafety-and-biosecurity-laboratory-guide-in-cameroon]. Accessed 24 September 2020.
[4] JSTOR. 2018. "Chapter 23: Biosafety Law and Policy in Cameroon". [https://www.jstor.org/stable/j.ctv941sr6.29?seq=4#metadata_info_tab_contents]. Accessed 24 September 2020.
[5] Cameroon Post. April 2010. "Cameroon is Internationally Recognized on Biosafety Matters". [https://cameroonpostline.com/cameroon-is-internationally-recognised-on-biosafety-matters-prudence-galega/]. Accessed 24 September 2020.
[6] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 24 September 2020.
[7] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[8] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[9] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[10] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[11] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[12] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.1c

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

Current Year Score: 0

There is evidence of an established agency (or agencies) responsible for the Biosafety measures in general but there are no biosecurity legislations or regulations with regards to especially dangerous pathogens that would need to be enforced by such an agency. The National Biosafety Committee was created in 2012 to manage the risks from biotechnology in Cameroon. The committee works with several administrations but sits under the Ministry of the Environment (MINEPDED). [1] The 2017 Joint External Evaluation (JEE) report states that a national law on biosafety and biosecurity was under development and was coordinated by the MINEPDED, at the time that the JEE was written. [1] The MINEPDED website does not provide evidence suggesting that there exists an established agency responsible for biosafety measures. [2] In response to the JEE's identification of gaps in the country's management of biosecurity and biosafety mechanisms, the Ministry of Public Health developed a National Biosafety and Biosecurity Laboratory Guide in 2019 that aims to: tie old laboratory practices to new World Health Organization (WHO) standards and guidelines on biosafety; to provide information on safe handling, transport and disposal of equipment and organisms with biological hazards; and Harmonize current laboratory practices at the national level. However, these guidelines do not carry the force of law and are purely recommendations. [3] According to the Environmental Law and Policy in Cameroon, developed in 2018, which summarizes all relevant legislations, there is a Biosafety Law and Policy that was developed in 1993, however there is no mention of especially dangerous pathogens as the document mainly focuses on genetically modified organisms. [4] Cameroon is also a member of and has adopted the Cartagena Protocol, which "obliges contracting parties to ensure that the use, transfer and specifically the trans-boundary movement of living organisms modified through biotechnology is safe with no adverse effect on human/animal health and the environment", however this law again makes no mention of especially dangerous pathogens. [5] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address containment, operation practices, failure reporting or cybersecurity of facilities legally

holding/using them. It does not designate a national competent authority to implement the ban on biological weapons. [6] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any laws in Cameroon specific to biosecurity, nor do the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [7,8,9,10,11] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [12]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Ministry of Public Health. July 2019. "Summary of the National Biosafety and Biosecurity Laboratory Guide in Cameroon". [https://dpml.cm/index.php/en/publications/good-practice-guide/biological-and-medical-analysis-laboratories/422-summary-of-the-national-biosafety-and-biosecurity-laboratory-guide-in-cameroon]. Accessed 24 September 2020.
[4] JSTOR. 2018. "Chapter 23: Biosafety Law and Policy in Cameroon". [https://www.jstor.org/stable/j.ctv941sr6.29?seq=4#metadata_info_tab_contents]. Accessed 24 September 2020.
[5] Cameroon Post. April 2010. "Cameroon is Internationally Recognized on Biosafety Matters". [https://cameroonpostline.com/cameroon-is-internationally-recognised-on-biosafety-matters-prudence-galega/]. Accessed 24 September 2020.
[6] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 24 September 2020.
[7] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[8] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[9] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[10] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[11] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[12] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. The 2017 Joint External Evaluation (JEE) of Cameroon that the national reference laboratories - the Cameroon Pasteur Centre (CPC), Military Health Research Centre (CRESAR) and National Veterinary Laboratory (LANAVET) - have taken steps to evaluate biosecurity risks with the support of international partners, and have put in place a register of pathogens along with storage and access measures. However, it lacks a national, integrated

biosecurity system for pathogens in laboratories, and also lacks standards and guidelines on the use, inventory or storage of pathogens. [1] A national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1]The MINEPDED website does not provide evidence suggesting that Cameroon has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not establish a system to consolidate inventories of dangerous pathogens and toxins. [3] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any documents for Cameroon specific to biosecurity or consolidation of inventories of dangerous pathogens and toxins. [4] There is no relevant evidence on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [5,6,7,8] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [9]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 24 September 2020.
[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[8] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[9] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Cameroon has in-country capacity to conduct polymerase chain reaction (PCR)-based diagnostic testing for anthrax but not Ebola. According to a report from the Cameroon Pasteur Centre (CPC), which is the national reference laboratory for anthrax and Ebola, in May 2018 staff from the reference laboratories at the CPC, the National Public Health Laboratory (LNSP) and the Military Health Research Centre (CRESAR) attended training on real-time PCR diagnosis of anthrax, provided by the US Centers for Disease Control and Prevention (CDC) Atlanta and funded by the US Defence Threat Reduction Agency. The report states that prior to this training, anthrax diagnostic tests were not possible in the country but are now available. [1] The CPC's list of diagnostic tests has not been updated to reflect this capability. Its website states that it

can conduct rapid molecular diagnostic tests for Ebola and has a biosafety-level 3 laboratory for this, but does not mention PCR testing for Ebola. [2,3,4] The LNSP has no website, nor is information on its diagnostic capacities available from the Ministry of Health. [5,6] CRESAR has no online presence. The Centre for Research on Emerging and Re-emerging Diseases and Nuclear Medicine at the Institute of Medical Research and Herbal Medicine Studies (IMPM), under the Ministry of Research, has a molecular biology unit specialised in PCR and real-time PCR tests, but is focused on HIV and there is no evidence it can conduct PCR tests for Ebola or anthrax. [7] The National Veterinary Laboratory (LANAVET) does not list Ebola or anthrax PCR tests among its diagnostic services. [8] There is no additional relevant evidence on the websites of the Ministries of Livestock or Research or from the 2017 Joint External Evaluation of Cameroon. [9,10,11]

[1] Cameroon Pasteur Centre (CPC). "Anthrax now diagnosed at the CPC (L'Anthrax diagnostiqué désormais au CPC)". [http://www.pasteur-yaounde.org/index.php/fr/echos-du-cpc/682-l-anthrax-diagnostique-desormais-au-cpc]. Accessed 24 September 2020.
[2] Cameroon Pasteur Centre (CPC). "National reference centres (Centres nationaux de reference)". [http://www.pasteur-yaounde.org/index.php/fr/lnr]. Accessed 24 September 2020.
[3] Cameroon Pasteur Centre (CPC). "Ebola." [http://www.pasteur-yaounde.org/index.php/fr/ebola]. Accessed 24 September 2020.
[4] Cameroon Pasteur Centre (CPC). 2016. "Catalogue 2016." [http://www.pasteur-yaounde.org/files/catalogue2016.pdf]. Accessed 24 September 2020.
[5] Ministry of Public Health. "Official handing over of the keys ceremony for the Centre for Quality Assurance of the National Public Health Laboratory (Cérémonie de remise officielle des clés du Centre d'Assurance Qualité du Laboratoire National de Santé Publique)". [http://www.minsante.gov.cm/site/?q=fr/content/c%C3%A9r%C3%A9monie-de-remise-officielle-des-cl%C3%A9s-du-centre-dassurance-qualit%C3%A9-du-laboratoire-national]. Accessed 24 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[7] Institute of Medical Research and Herbal Medicine Studies (IMPM). "Centre for Research on Emerging and Re-emerging Diseases and Nuclear Medicine (Centre de Recherche sur les Maladies Emergentes, Ré-émergentes et la Médicine Nucléaire)". [http://www.impm-cm.org/nos-centres/centres-de-recherche/centre-de-recherches-sur-les-maladies-emergentes-re-emergentes-et-la-medecine-nucleaire-cremer/]; and "Biomedical consultations and tests (Consultations et examens biomédicaux)". [http://www.impm-cm.org/services-au-public-2/analyses-medicales/]. Accessed 24 September 2020.
[8] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[9] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[10] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[11] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon requires biosecurity training using a standardised, required approach for personnel working in facilities housing or working with especially dangerous biological agents. The 2017 Joint External Evaluation of Cameroon notes the lack of a national biosecurity regime and of biosecurity training, and recommends "developing and implementing a national training programme on biological safety and security for laboratory personnel and all those handling biological agents." It notes the existence of training procedures for personnel working in the country's three BSL-2+ and BSL-3 biological laboratories: the Cameroon Pasteur Centre (CPC), National Veterinary Laboratory (LANAVET) and Military Health Research Centre (CRESAR). It does not specify whether training is required by the government, whether it covers both biosafety and biosecurity, or whether it addresses especially dangerous pathogens. [1] There is no evidence of mandatory, standardised training on biosecurity regarding especially dangerous pathogens from the CPC's website or latest available annual report (2014); from LANAVET's website; and CRESAR has no online presence. [2,3,4] A national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] The MINEPDED website does not provide evidence suggesting that Cameroon requires training using a standardized, required approach for personnel working in facilities with espectially dangerous biological agents. [5] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any documents for Cameroon which address biosecurity training. [6] There is no relevant evidence on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [7,8,9,10] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacit" RSI de la R"publique de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Cameroon Pasteur Centre (CPC). "Training School for Medical Technicians in Medical Analysis (Ecole de Formation des Techniciens M"dico-Sanitaires en Analyses M"dicales)". [http://www.pasteur-yaounde.org/index.php/fr/formations]. Accessed 24 September 2020.
[3] Cameroon Pasteur Centre (CPC). 2014. "Activity report 2014 (Rapport d"activit"s 2014)". [http://www.pasteur-yaounde.org/images/docs/1racpc2014.pdf]. Accessed 24 September 2020.
[4] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[5] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[6] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[11] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no evidence that Cameroon has regulations or licensing conditions specifying that security and other personnel with access to biological materials with epidemic potential are subject to drug, background or psychological/mental fitness checks. The 2017 Joint External Evaluation (JEE) of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the Ministry of the Environment (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE, neither is there evidence to suggest that the law would include regulations requiring these kinds of checks. No further evidence was available on the MINEPDED website. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address requirements for checks on personnel working at facilities legally holding/using them. [4] Vertic�s Biological Weapons Convention (BWC) Legislation Database does not list any documents for Cameroon containing such requirements, nor is there relevant evidence on the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [5,6,7,8] Cameroon has three BSL-2+ and BSL-3 biological laboratories: the Cameroon Pasteur Centre (CPC), National Veterinary Laboratory (LANAVET) and Military Health Research Centre (CRESAR). There is no evidence from their websites of personnel vetting procedures for those with access to especially dangerous pathogens (note that CRESAR has no online presence). [9,10] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [11] No other evidence was found to suggest that there are regulations in place that require personnel with access to biological materials to have drug, background or psychological/mental fitness checks.

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacit" RSI de la R"publique de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 d"cembre 2016 portant r"gime g"n"ral des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 24 September 2020.
[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[8] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[9] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr/]. Accessed 24 September 2020.

[10] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[11] The United Nations Office at Geneva (UNOG). N.d. BWC Electronic Confidence Building Measures Portal: Cameroon. [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has publicly-available information on national regulations on the safe and secure transport of infectious substances (categories A and B). According to the 2017 Joint External Evaluation of Cameroon, there is national guidance on the shipment of dangerous pathogens, and training of technicians and logisticians takes place on the international shipping of infectious substances, in accordance with international regulations (WHO-IATA Training). However, there is no reference to categories A and B. The report does reference a Special pathogen sample management document from the Military Health Research Centre (CRESAR), however it is not publicly available. [1] The Droit-Afrique website lists several transport-related regulations for Cameroon which touch on transport of dangerous items, but all are regional, not national, and none specifically address transport of categories A and B infectious substances. [2,3,4,5,6] The Cameroon Civil Aviation Authority (CCAA) provides some information on the transportation of dangerous goods, and lists relevant laws, government notices, instructions and technical guides. [7] Among these, Order no. 735/MINT of 7 June 2005 on air transport of dangerous goods sets out minimum standards. It requires compliance with the latest edition of the International Civil Aviation Authority (ICAO)s Technical instructions for the safe air transport of dangerous goods, and refers to these for the definition and classification of dangerous goods, and for packaging, labelling and stowing instructions. It does not provide a copy of the Technical instructions, and does not specifically mention categories A and B infectious substances. [8] Instructions on transporting categories A and B infectious substances are not available from elsewhere on the CCAAs website, or on the Verticals Biological Weapons Convention (BWC) Legislation Database, from the Ministries of Transport, Public Health, Livestock, or from the Customs Agency. [9,10,11,12,13,14] A report from the Cameroon Pasteur Centre (CPC), a national reference laboratory, describes training provided in March 2017 on handling samples of suspected viral haemorrhagic fevers including Ebola. It states that the 2013 World Health Organisation (WHO) manual on transporting categories A and B infectious substances was used for training purposes and does not mention any domestic regulations. [15] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [16]

[1] World Health Organisation (WHO). 2017. Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacit RSI de la Rpublique de Cameroon: Rapport de mission 25-29 Septembre 2017). [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Droit-Afrique. Cameroon Documents Sectoral law (Cameroun Documentation Droit sectorial). [https://www.droit-afrique.com/pays/cameroun/#documentation]. Accessed 24 September 2020.
[3] Economic and Monetary Community of Central Africa (CEMAC). 2001. Community code of merchant shipping (Code communautaire de la marine marchande). [http://droit-afrique.com/upload/doc/cemac/CEMAC-Reglement-2001-03-Code-communautaire-marine-marchande.pdf]. Accessed 24 September 2020.
[4] Economic and Monetary Community of Central Africa (CEMAC). 2001. Community code of the road (Code

communautaire de la route)�. [http://droit-afrique.com/upload/doc/cemac/CEMAC-Reglement-2001-04-Code-de-la-route.pdf]. Accessed 24 September 2020.
[5] Economic and Monetary Community of Central Africa (CEMAC). 2010. �Agreement on civil aviation security between member states of the Economic and Monetary Community of Central Africa (Accord relative � la s�ret� de l�aviation civile entre les �tats members de la Communaut� Economique et Mon�taire de l�Afrique Centrale)�. [http://droit-afrique.com/upload/doc/cemac/CEMAC-Reglement-2010-06-surete-aviation-civile.pdf]. Accessed 24 September 2020.
[6] Organisation for the Harmonization of Business Law in Africa (OHADA). 2003. �Uniform act on contracts for road transport of goods (Acte uniforme relatif aux contrats de transport de marchandises par route)�. [http://droit-afrique.com/upload/doc/ohada/Ohada-Acte-Uniforme-2003-Transport.pdf]. Accessed 24 September 2020.
[7] Cameroon Civil Aviation Authority (CCAA). N.d. �Dangerous goods: A well-regulated type of transport (Marchandises dangereuses: Un transport bien r�glement�)�. [https://www.ccaa.aero/index.php/fr/aviation-civile-au-cameroun-surete-et-securite/518-marchandises-dangereuses-un-transport-bien-reglemente]. Accessed 24 September 2020.
[8] Government of Cameroon. �Order no. 735/MINT of 7 June 2005 on air transport of dangerous goods (Arret� no. 735/MINT du 7 Juin 2005 relatif au transport a�rien des marchandises dangereuses)�. [https://www.ccaa.aero/index.php/fr/espace-documentation-arretes?start=40&Itemid=236]. Accessed 24 September 2020.
[9] Vertic. �BWC Legislation Database: Cameroon�. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[10] Cameroon Civil Aviation Authority (CCAA). [https://www.ccaa.aero/index.php/fr/]. Accessed 24 September 2020.
[11] Transport Ministry. [https://mintransports.net/fr/]. Accessed 24 September 2020.
[12] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[13] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[14] Cameroon Customs. [http://www.douanes.cm/douane/index.php/fr/]. Accessed 24 September 2020.
[15] Cameroon Pasteur Centre (CPC). 2017. �Workshop on reinforcement of laboratory personnel capacity (Atelier de renforcement des capacit�s des personnels des laboratoires)�. [http://www.pasteur-yaounde.org/index.php/fr/echos-du-cpc/577-atelier-de-renforcement-des-capacites-des-personnels-des-laboratoires]. Accessed 24 September 2020.
[16] The United Nations Office at Geneva (UNOG). N.d. �BWC Electronic Confidence Building Measures Portal: Cameroon.� [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national legislation, regulation or guidance in Cameroon to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. The 2017 Joint External Evaluation of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE, neither is there evidence to suggest that it intends to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. No evidence was found on the MINEPDED website. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address requirements related to cross-border transfer or end-user screening of such agents. [3] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any documents for Cameroon containing such requirements, nor is there relevant evidence on the websites of the Ministries of Public Health,

Livestock, Industry, Trade or Research, or the Ministry of Research's Institute of Medical Research and Herbal Medicine Studies (IMPM). [4,5,6,7,8,9,10] Cameroon has three BSL-2+ and BSL-3 biological laboratories: the Cameroon Pasteur Centre (CPC), National Veterinary Laboratory (LANAVET) and Military Health Research Centre (CRESAR). [1] There is no evidence from their websites of requirements related to cross-border transfer or end-user screening of especially dangerous biological agents (note that CRESAR has no online presence). [11,12] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [13]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 24 September 2020.
[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[8] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[9] Ministry of Trade. [http://www.mincommerce.gov.cm/en/home.html]. Accessed 24 September 2020.
[10] Ministry of Mines, Industry and Technological Development. [http://www.minmidt.cm/en/home/]. Accessed 24 September 2020.
[11] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr/]. Accessed 24 September 2020.
[12] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[13] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has a biosafety legislation or regulations other than those addressing GMOs in agriculture and general worker safety regulations. The 2017 Joint External Evaluation (JEE) of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No

evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [2] According to the Environmental Law and Policy in Cameroon, developed in 2018, which summarizes all relevant legislations, there is a Biosafety Law and Policy that was developed in 1993, however there is no mention of harmful biological substances as the document mainly related to genetically modified organisms (GMO) safety. [3] Cameroon is also a member of and has adopted the Cartagena Protocol, which "obliges contracting parties to ensure that the use, transfer and specifically the trans-boundary movement of living organisms modified through biotechnology is safe with no adverse effect on human/animal health and the environment", however this law again focuses primarily on GMOs. [4] Several legislative/regulatory documents on biosafety exist with the same emphasis. Law no. 006/2003 on safety regulations governing modern biotechnology in Cameroon only addresses GMOs, including "recombinant-DNA vaccines and other pharmaceutical products manufactured through genetic modification and marketed on the national territory", but not extending to non-GMO harmful biological agents. [5] There is no evidence of other biosafety legislation or regulations on the Vertic's Biological Weapons Convention (BWC) Legislation Database, nor from the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [6,7,8,9,10] The Department of Pharmacy, Medications and Laboratories provides guidance on good practice in biomedical laboratories, containing high-level guidance on biosecurity such as the need for personal protective equipment (PPE). It calls for respect for worker safety regulations. [11] The Labour Code does not address biosafety, but states that workplace safety conditions are set through ministerial orders. [12] The most recent relevant order is Order No. 039/MTPS/IMT (1984) establishing general measures for hygiene and safety in workplaces. [13] It contains general provisions on the need for PPE, but nothing specific to laboratory safety. [14] The National Public Health Laboratory (LNSP) and the Military Health Research Centre (CRESAR) have no websites. The Cameroon Pasteur Centre's website does not mention any other biosafety regulations, and reports that in 2017 World Health Organisation (WHO) guidance was used for training laboratory personnel. [15,16] The National Veterinary Laboratory (LANAVET) website does not mention any domestic regulations. [17] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [18]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] JSTOR. "Chapter 23: Biosafety Law and Policy in Cameroon". [https://www.jstor.org/stable/j.ctv941sr6.29?seq=4#metadata_info_tab_contents]. Accessed 24 September 2020.
[4] Cameroon Post. April 2010. "Cameroon is Internationally Recognized on Biosafety Matters". [https://cameroonpostline.com/cameroon-is-internationally-recognised-on-biosafety-matters-prudence-galega/]. Accessed 24 September 2020.
[5] Food and Agriculture Organization (FAO). 2003. "Law No. 006/2003 of 21st April 2003 to lay down safety regulations governing modern biotechnology in Cameroon". [http://www.fao.org/fileadmin/user_upload/gmfp/docs/Biosafety%20law_03_04_21-1.pdf]. Accessed 24 September 2020.
[6] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[11] Department of Pharmacy, Medications and Laboratories. 2011. "(Guide de bonne exécution des analyses de biologie

médicale)".
[https://dpml.cm/images/Publications/GuideBonnePratique/GuideBonneExecutionAnalyseBiologieMedicale_dpml_minsante_cameroun.pdf]. Accessed 24 September 2020.
[12] Government of Cameroon. 1992. "Law no. 92-007 of 14 August 1992: Labour code (Loi no. 92-007 du 14 août 1992: Code du travail)". [http://droit-afrique.com/upload/doc/cameroun/Cameroun-Code-1992-travail.pdf]. Accessed 24 September 2020.
[13] International Labor Organization (ILO). "Natlex: Cameroon: Operational health and safety." [https://www.ilo.org/dyn/natlex/natlex4.listResults?p_lang=en&p_country=CMR&p_count=301&p_classification=14&p_classcount=22]. Accessed 24 September 2020.
[14] Government of Cameroon. "Order No. 039/MTPS/IMT of 26 November 1984 establishing general measures for hygiene and safety in workplaces (Arreté No. 039 /MTPS /IMT du 26 novembre 1984 fixant les mesures générales d'hygiène et de sécurité sur les lieux de travail)". [https://www.ilo.org/dyn/natlex/docs/SERIAL/39672/37264/F-2050204521/CMR-39672.pdf]. Accessed 24 September 2020.
[15] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 24 September 2020.
[16] Cameroon Pasteur Centre (CPC). 2017. "Workshop on reinforcement of laboratory personnel capacity (Atelier de renforcement des capacités des personnels des laboratoires)". [http://www.pasteur-yaounde.org/index.php/fr/echos-du-cpc/577-atelier-de-renforcement-des-capacites-des-personnels-des-laboratoires]. Accessed 24 September 2020.
[17] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[18] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has a biosafety legislation or regulations other than those addressing GMOs in agriculture and general worker safety regulations. The 2017 Joint External Evaluation (JEE) of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [2] According to the Environmental Law and Policy in Cameroon, developed in 2018, which summarizes all relevant legislations, there is a Biosafety Law and Policy that was developed in 1993, however there is no mention of harmful biological substances as the document mainly related to genetically modified organisms (GMO) safety. [3] Cameroon is also a member of and has adopted the Cartagena Protocol, which "obliges contracting parties to ensure that the use, transfer and specifically the trans-boundary movement of living organisms modified through biotechnology is safe with no adverse effect on human/animal health and the environment", however this law again focuses primarily on GMOs. [4] Several legislative/regulatory documents on biosafety exist with the same emphasis. Law no. 006/2003 on safety regulations governing modern biotechnology in Cameroon only addresses GMOs, including "recombinant-DNA vaccines and other pharmaceutical products manufactured through genetic modification and marketed on the national territory", but not extending to non-GMO harmful biological agents. [5] There is no evidence of other biosafety legislation or regulations on the Vertic's Biological Weapons Convention (BWC) Legislation Database, nor from the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [6,7,8,9,10] The Department of Pharmacy, Medications and Laboratories provides guidance on good practice in biomedical laboratories, containing high-level guidance on biosecurity such as the need for personal protective equipment (PPE). It calls for respect for worker safety regulations. [11] The Labour Code does not address biosafety, but states that workplace safety

conditions are set through ministerial orders. [12] The most recent relevant order is Order No. 039/MTPS/IMT (1984) establishing general measures for hygiene and safety in workplaces. [13] It contains general provisions on the need for PPE, but nothing specific to laboratory safety. [14] The National Public Health Laboratory (LNSP) and the Military Health Research Centre (CRESAR) have no websites. The Cameroon Pasteur Centre's website does not mention any other biosafety regulations, and reports that in 2017 World Health Organisation (WHO) guidance was used for training laboratory personnel. [15,16] The National Veterinary Laboratory (LANAVET) website does not mention any domestic regulations. [17] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [18]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] JSTOR. "Chapter 23: Biosafety Law and Policy in Cameroon". [https://www.jstor.org/stable/j.ctv941sr6.29?seq=4#metadata_info_tab_contents]. Accessed 24 September 2020.
[4] Cameroon Post. April 2010. "Cameroon is Internationally Recognized on Biosafety Matters". [https://cameroonpostline.com/cameroon-is-internationally-recognised-on-biosafety-matters-prudence-galega/]. Accessed 24 September 2020.
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[6] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[11] Department of Pharmacy, Medications and Laboratories. 2011. "(Guide de bonne exécution des analyses de biologie médicale)". [https://dpml.cm/images/Publications/GuideBonnePratique/GuideBonneExecutionAnalyseBiologieMedicale_dpml_minsante_cameroun.pdf]. Accessed 24 September 2020.
[12] Government of Cameroon. 1992. "Law no. 92-007 of 14 August 1992: Labour code (Loi no. 92-007 du 14 août 1992: Code du travail)". [http://droit-afrique.com/upload/doc/cameroun/Cameroun-Code-1992-travail.pdf]. Accessed 24 September 2020.
[13] International Labor Organization (ILO). "Natlex: Cameroon: Operational health and safety." [https://www.ilo.org/dyn/natlex/natlex4.listResults?p_lang=en&p_country=CMR&p_count=301&p_classification=14&p_classcount=22]. Accessed 24 September 2020.
[14] Government of Cameroon. "Order No. 039/MTPS/IMT of 26 November 1984 establishing general measures for hygiene and safety in workplaces (Arreté No. 039 /MTPS /IMT du 26 novembre 1984 fixant les mesures générales d'hygiène et de sécurité sur les lieux de travail)". [https://www.ilo.org/dyn/natlex/docs/SERIAL/39672/37264/F-2050204521/CMR-39672.pdf]. Accessed 24 September 2020.
[15] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 24 September 2020.
[16] Cameroon Pasteur Centre (CPC). 2017. "Workshop on reinforcement of laboratory personnel capacity (Atelier de renforcement des capacités des personnels des laboratoires)". [http://www.pasteur-yaounde.org/index.php/fr/echos-du-

cpc/577-atelier-de-renforcement-des-capacites-des-personnels-des-laboratoires]. Accessed 24 September 2020.
[17] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[18] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon requires biosafety training using a standardised, required approach for personnel working in facilities housing or working with especially dangerous biological agents. The 2017 Joint External Evaluation of Cameroon notes the lack of a national biosafety regime and of biosafety training, and recommends "developing and implementing a national training programme on biological safety and security for laboratory personnel and all those handling biological agents." It notes the existence of training procedures for personnel working in the country's three BSL-2+ and BSL-3 biological laboratories: the Cameroon Pasteur Centre (CPC), National Veterinary Laboratory (LANAVET) and Military Health Research Centre (CRESAR). It does not specify whether training is required by the government, whether it covers both biosafety and biosecurity, or whether it addresses especially dangerous pathogens. [1] There is no evidence of mandatory, standardised training on biosafety regarding especially dangerous pathogens from the CPC's website or latest available annual report (2014); from LANAVET's website; and CRESAR has no online presence. [2,3,4] The 2017 Joint External Evaluation of Cameroon states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [5] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any documents for Cameroon which address biosafety training. [6] There is no relevant evidence on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [7,8,9,10] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 24 September 2020.
[2] Cameroon Pasteur Centre (CPC). "Training School for Medical Technicians in Medical Analysis (Ecole de Formation des Techniciens Médico-Sanitaires en Analyses Médicales)". [http://www.pasteur-yaounde.org/index.php/fr/formations]. Accessed 24 September 2020.
[3] Cameroon Pasteur Centre (CPC). 2014. "Activity report 2014 (Rapport d'activités 2014)". [http://www.pasteur-yaounde.org/images/docs/1racpc2014.pdf]. Accessed 24 September 2020.
[4] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 24 September 2020.
[5] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/].

Accessed 10 November 2020.
[6] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 24 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 24 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 24 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 24 September 2020.
[11] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 24 September 2020.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

Is there publicly available evidence that the country has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research?
Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential, and/or other dual use research. The 2017 Joint External Evaluation of Cameroon notes that the national reference laboratories - the Cameroon Pasteur Centre (CPC), Military Health Research Centre (CRESAR) and National Veterinary Laboratory (LANAVET) - have taken steps to evaluate biosecurity risks with the support of international partners, and have put in place a register of pathogens along with storage and access measures. However, it lacks a national, integrated biosecurity system for pathogens in laboratories, and also lacks standards and guidelines on the use, inventory or storage of pathogens. The JEE report recommends establishing an official classification system for laboratories based on their biological containment capacities. A national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not establish any oversight mechanisms to monitor research involving biological agents. [3] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any documents in Cameroon addressing dual-use research. [4] There is no relevant evidence on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [5,6,7,8] An online search for relevant articles produces no evidence. Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [9]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/].

Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 25 September 2020.
[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 24 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[7] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.
[9] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 25 September 2020.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has a national policy requiring oversight of dual use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. The 2017 Joint External Evaluation of Cameroon does not mention a policy or other document on dual-use research, but states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address oversight of dual-use research. [3] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any policies in Cameroon on dual-use research, nor do the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [4,5,6,7,8] Of the national reference laboratories, the National Public Health Laboratory (LNSP) and the Military Health Research Centre (CRESAR) have no websites. The websites of the Cameroon Pasteur Centre (CPC) and the National Veterinary Laboratory (LANAVET) do not mention dual-use research. [9,10] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 25 September 2020.

[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 25 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[8] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.
[9] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr/]. Accessed 25 September 2020.
[10] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.
[11] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 25 September 2020.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. The 2017 Joint External Evaluation of Cameroon does not mention an agency responsible for oversight of dual-use research, or a policy or regulation on the topic, but states that a national law on biosafety and biosecurity is under development, coordinated by the environment ministry (MINEPDED). [1] No evidence exists that this law has been put into effect since the writing of the JEE and no evidence was found on the MINEPDED webpage. [2] Law no. 2016/015 on arms and munitions bans the acquisition, development or storage of biological agents not intended for peaceful purposes, but does not address oversight of dual-use research. [3] Vertic's Biological Weapons Convention (BWC) Legislation Database does not list any policies in Cameroon on dual-use research, nor do the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [4,5,6,7,8] Of the national reference laboratories, the National Public Health Laboratory (LNSP) and the Military Health Research Centre (CRESAR) have no websites. The websites of the Cameroon Pasteur Centre (CPC) and the National Veterinary Laboratory (LANAVET) do not mention dual-use research. [9,10] Though Cameroon is party to the Biological Weapons Convention and submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDAD). [http://www.minepia.cm/]. Accessed 10 November 2020.
[3] Government of Cameroon. 2016. "Law no. 2016/015 of 14 December 2016 establishing the general regime for arms and munitions in Cameroon (Loi no. 2016/015 du 14 décembre 2016 portant régime général des armes et munitions au Cameroun)". [http://www.assnat.cm/images/lois-adoptees/legislature9/lois-Nov-2016/2016.015fr.pdf]. Accessed 25 September 2020.
[4] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 25 September 2020.

[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[7] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[8] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.
[9] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr/]. Accessed 25 September 2020.
[10] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.
[11] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 25 September 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has a legislation and/or regulation requiring the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold. There is evidence that Cameroon has national legislation and guidance requiring risk assessment of synthesized DNA before it is sold, but not specifically requiring screening of the DNA code to ensure it is not a restricted pathogen. Law no. 006/2003 on safety regulations governing modern biotechnology in Cameroon states: "Prior to any intentional release to the environment, contained use, import/export, sale/placement on the market of living modified organisms, genetically modified organisms or products thereof, a strict assessment of risks must be conducted." The risk assessment is notified to the competent authority, which is the National Committee on Biosafety. The law provides guidance on the content of the risk assessment, which is to include the marker trait and sequencing of the organism. [1] According to an accompanying manual on biosafety risk assessments, the regulators have the risk assessment audited by independent experts. [2] Neither the law nor the manual mentions a screening process that involves reading the DNA code of synthesized DNA to make sure that it is not a restricted pathogen. [1,2] The law applies to "any genetically modified organism that may negatively affect human and animal health, biodiversity and the environment", and "modern biotechnology in medicine, agriculture, industry and the environment", so implicitly includes DNA for pathogens. [1] According to the Environmental Law and Policy in Cameroon, developed in 2018, which summarizes all relevant legislations, there is a Biosafety Law and Policy that was developed in 1993, which states that "Any activity in the research, development, production, manipulation and marketing of GMOs or products thereof in contained conditions, or intended to be released shall be subject to approval by the competent national administration in collaboration with the other services concerned". The law continues to say that "Recombinant-DNA (rDNA) vaccines and other pharmaceutical products manufactured through genetic modification and marketed on the national territory shall be subjected to the same safety norms provided for in the Law. Recombinant-DNA products and other imported pharmaceutical products must be quarantined at entry ports until samples which shall be tested by the competent national administration shall prove that the said products are not dangerous, before they are placed on the market". [3] There is no further evidence in the law to show that Cameroon specifically requires screening of the DNA code to ensure it is not a restricted pathogen. Cameroon is also a member of and has adopted the Cartagena Protocol, which "obliges contracting parties to ensure that the use, transfer and specifically the trans-boundary movement of living organisms modified through biotechnology is safe with no adverse effect on human/animal health and the environment", however again, there is no evidence that under this law, Cameroon requires screening of DNA codes. [4] Though Cameroon is party to the Biological Weapons Convention and

submitted Confidence Building Measures in 2016, public access to the report is restricted and it is unknown if it contains information on this matter. [5] No further evidence is available on the Vertic's Biological Weapons Convention (BWC) Legislation Database, nor on the websites of the Ministries of Public Health, Livestock, Research or of the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM). [6,7,8,9,10]

[1] Food and Agriculture Organization (FAO). 2003. "Law No. 006/2003 of 21st April 2003 to lay down safety regulations governing modern biotechnology in Cameroon". [http://www.fao.org/fileadmin/user_upload/gmfp/docs/Biosafety%20law_03_04_21-1.pdf]. Accessed 25 September 2020.
[2] Cameroon National Biosafety Committee. Apr 2004. "Manual on biosafety risk assessment and risk management for Cameroon." [https://manualzz.com/doc/28007249/manual-on-biosafety-risk-assessment-and-risk-management-for]. Accessed 25 September 2020.
[3] JSTOR. 2018. "Chapter 23: Biosafety Law and Policy in Cameroon". [https://www.jstor.org/stable/j.ctv941sr6.29?seq=4#metadata_info_tab_contents]. Accessed 25 September 2020.
[4] Cameroon Post. April 2010. "Cameroon is Internationally Recognized on Biosafety Matters". [https://cameroonpostline.com/cameroon-is-internationally-recognised-on-biosafety-matters-prudence-galega/]. Accessed 25 September 2020.
[5] The United Nations Office at Geneva (UNOG). N.d. "BWC Electronic Confidence Building Measures Portal: Cameroon." [https://bwc-ecbm.unog.ch/state/cameroon]. Accessed 25 September 2020.
[6] Vertic. "BWC Legislation Database: Cameroon". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/c/]. Accessed 25 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 0

2019

World Health Organization

1.6.1b

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

Yes = 1 , No = 0

Current Year Score: 0

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 2

Cameroon's national laboratory system has the capacity to conduct diagnostic tests for at least 5 of the 10 WHO-defined core tests and include tests for polio, HIV, tuberculosis, malaria and influenza. According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country's national laboratory network includes laboratories for public and animal health, as well as private and research laboratories. The National Public Health Laboratory (LNSP) coordinates the network. The laboratories with the most advanced facilities are the Cameroon Pasteur Centre (CPC, a central reference laboratory), the National Veterinary Laboratory (LANAVET) and the Military Health Research Centre (CRESAR). [1] The CPC is the national reference laboratory for influenza and conducts real-time PCR tests for it. [2] The CPC is the national reference laboratory for polio, and uses the culture method. [3] The virology laboratory at the Centre for Research on Emerging and Re-emerging Diseases and Nuclear Medicine (IMPM), under the research ministry, conducts serology testing for HIV. [4] The CPC is the national reference laboratory for tuberculosis, and conducts quality control of the microscopy tests carried out by the wider laboratory network. [5] The JEE of Cameroon states that the laboratory network has the capacity to conduct rapid diagnostic tests for malaria. [1] The CPC does not offer bacterial culture testing for Salmonella enteritidis serotype Typhi (typhoid). [6,7] LANAVET offers isolation, PCR and sensibility diagnostic services for Salmonellosis, but does not offer bacterial culture testing for typhoid. [8] The LNSP and CRESAR have no online presence, and there is no information on their diagnostic services via the Ministry of Health website. [9] A wider online search does not produce evidence of bacterial culture testing for typhoid in Cameroon. A 2016 academic study notes that there is a lack of affordable diagnostic tests for febrile illnesses other than malaria in Cameroon, and as a result of this and the higher prevalence of malaria, patients presenting with febrile symptoms do not tend to be tested for other potential diseases such as typhoid. [10] There is no evidence that Cameroon has identified country-specific core tests from the Ministries of Health, Livestock, or Scientific Research and Innovation. [9,11,12]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.

[2] Cameroon Pasteur Centre (CPC). N.d. "Human influenza (Grippe humaine)". [http://www.pasteur-yaounde.org/index.php/fr/grippes]. Accessed 25 September 2020.
[3] Cameroon Pasteur Centre (CPC). N.d. "Poliomyelitis (Poliomyélite)". [http://www.pasteur-yaounde.org/index.php/fr/sante-publique-poliomelite]. Accessed 25 September 2020.
[4] Centre for Research on Emerging and Re-emerging Diseases and Nuclear Medicine (IMPM). N.d. "CREMER (Le CREMER)". [http://www.impm-cm.org/nos-centres/centres-de-recherche/centre-de-recherches-sur-les-maladies-emergentes-re-emergentes-et-la-medecine-nucleaire-cremer/]. Accessed 25 September 2020.
[5] Cameroon Pasteur Centre (CPC). N.d. "Tuberculosis Quality Assurance and training programmes (Programmes d'Assurance Qualité tuberculose et de formation)". [http://www.pasteur-yaounde.org/index.php/fr/nos-recherches-tuberculose/programmes-d-assurance-qualite-tuberculose-et-de-formation]. Accessed 25 September 2020.
[6] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 25 September 2020.
[7] Cameroon Pasteur Centre (CPC). 2016. "Catalogue 2016." [http://www.pasteur-yaounde.org/files/catalogue2016.pdf]. Accessed 25 September 2020.
[8] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[10] Achonduh-Atijegbe, O et al. 8 Nov 2016. "Prevalence of malaria, typhoid, toxoplasmosis and rubella among febrile children in Cameroon," in BMC Infectious Diseases, 16 (658), 2016. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5101675/]. Accessed 25 September 2020.
[11] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[12] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.

2.1.1b

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

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

Current Year Score: 0

There is insufficient evidence to show that Cameroon has a national plan, strategy or similar document for conducting testing during a public health emergency that includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing.

Most recently, a COVID-19 strategic plan was developed to respond to the COVID-19 pandemic, however it is specific to COVID-19 and does not include testing for novel pathogens, scaling capacity, and defining goals for testing in general. [1] The Centers for Disease Control and Prevention (CDC), has supported Cameroon in establishing a CDC-constructed National Public Health Laboratory to distribute COVID-19 test kids and other resources. It also has "facilitated international accreditation of five laboratories in Cameroon, including the current reference laboratory for COVID-19 testing, and supported development of [the Ministry of Health] MOH's laboratory strategy and decentralization plan to increase diagnostic capacity in all regions". [2]

In December 2019, along with 17 other countries, Cameroon participated in an exercise to test its readiness of its Public Health Emergency Operations Center (PHEOC), however no evidence was found of following a specific strategic plan or that tests of pathogens was a part of it. [3] With support from CDC, the government of Cameroon previously set up a framework with tools and mechanisms intended to "detect disease outbreaks at the earliest possible moment in order to respond

effectively". In 2017, Cameroon conducted an 11-day exercise to test these mechanisms. Although there are suggestions that this excercise included collection of samples and the use of rapid diagnostic tests, no details were found on the types of tests these were. [4,5,6]

In 2016, Cameroon's PHEOC was praised for shortening its response times to public health emergencies. [7,8] In 2015, a study looked into the Cameroon's cholera Integrated Dieases Surveillance and Response (IDSR) strategy, which makes surveillance and laboratory data more usable, and determined that the system is "passive with neither data analysis nor rapid response at health district level. Thus the goal of IDSR strategy has not been met yet. Both human (trained surveillance officers) and material (computers) resources are needed at the district level to achieve this goal". No evidence was found of tests being conducted under this strategy. [9,10] No further evidence was found on the websites of the Ministries of Health, Livestock, or Scientific Research and Innovation. [11,12,13] The PHEOC does not have an online presence.

[1] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 25 September 2020.
[2] Centers for Disease Control and Prevention (CDC). "CDC Programs in Cameroon Pivot to COVID-19 Response". [https://www.cdc.gov/globalhealth/stories/cameroon-covid-response.html]. Accessed 27 September 2020.
[3] CDC. 2018. "Cameroon: Global Health Security Effort Gives "Muscle Memory" In How to Fight Disease". [https://www.cdc.gov/globalhealth/security/stories/cameroon-muscle-memory.html]. Accessed 25 September 2020.
[4] Editorials. September 2017. "Cameroon and U.S. Partners in Preparedness". [https://editorials.voa.gov/a/cameroon-us-partners-preparedness/4031133.html#:~:text=Cameroon%20health%20officials%20are%20using%20new%20and%20upgraded,exercise%20began%20September%207th%20and%20ended%20September%2015th.]. Accessed 25 September 2020.
[5] United States Embassy of Cameroon. September 2017. "U.S.-Cameroon Demonstrate Preparedness in Public Health Emergency Management". [https://cm.usembassy.gov/u-s-cameroon-demonstrate-preparedness-public-health-emergency-management/]. Accessed 25 September 2020.
[6] CDC. "CDC in Cameroon". [https://www.cdc.gov/globalhealth/countries/cameroon/pdf/Cameroon_factsheet.pdf]. Accessed 25 September 2020.
[7] World Health Organization (WHO). December 2019. "Seventeen African Countries Conducting Exercise to Test Readiness of Public Health Emergency Operations Centres". [https://www.afro.who.int/news/seventeen-african-countries-conducting-exercise-test-readiness-public-health-emergency]. Accessed 25 September 2020.
[8] Balajee, S., Pasi, O. G., Etoundi, A. M., Rzeszotarski, P., Do, T. T., Hennessee, I....Mounts, A. W. December 2017. "Sustainable Model for Public Health Emergency Operations Centers for Global Settings" [https://dx.doi.org/10.3201/eid2313.170435]. Accessed 25 September 2020.
[9] Ngwa, M. C., Liang, S., Mbam, L., Arabi, M., Teboh, A., Brekmo, K., Mevoula, O., & Morris, J. G. February 2015. "Cholera Public Health Surveillance System in Cameroon". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4512393/#:~:text=Following%20the%20recommendations%2C%20the%20WHO%20Regional%20Office%20for,the%20IDSR-strategy%20to%20fortify%20surveillance%20in%20the%20country.]. Accessed 25 September 2020.
[10] CDC. "Integrated Disease Surveillance and Response (IDSR)". [https://www.cdc.gov/globalhealth/healthprotection/idsr/index.html]. Accessed 25 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[12] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[13] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

The national laboratory which serves as a reference facility, the Medical Analysis Laboratory of Centre Pasteur Cameroone (CPC) was accredited to ISO 15189 standards on 12 November 2019. "Funding for this activity was provided from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through CDC". [1] The 2017 Joint External Evaluation (JEE) of Cameroon identifies three national reference laboratories: the CPC, the National Veterinary Laboratory (LANAVET) and the Military Health Research Centre (CRESAR). [2] Only the CPC serves as a reference facility for the World Health Organization (WHO) core tests. [3,4] As for the other reference laboratories, LANAVET has adopted a quality policy with an objective of "the continuous improvement of production conditions and diagnostic for LANAVET to comply with the ISO/CEI 17025 norms for diagnosis of animal diseases and ISO 9001 for production of vaccines." It has not achieved accreditation in these norms. [5] CRESAR has no online presence. There is no further evidence of reference laboratory standards accreditation from the Ministries of Health, Livestock, or Scientific Research and Innovation or the Department of Pharmacy, Medications and Laboratories.[6,7,8,9] The JEE recommends "putting in place a national programme for quality assurance and external quality evaluation for all laboratories in all sectors."[1] The CDC, however, has supported Cameroon in establishing a CDC-constructed National Public Health Laboratory to distribute COVID-19 test kids and other resources. It also has "facilitated international accreditation of five laboratories in Cameroon, including the current reference laboratory for COVID-19 testing", however it does not specific which of the laboratories were recently accreditated. [10]

[1] Global Health System Solutions. "Press Release: CDC Cameroon and GHSS Secure First International Accreditation for a Centre Pasteur Laboratory in Africa". [https://dpml.cm/index.php/fr]. Accessed 25 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[3] Cameroon Pasteur Centre (CPC). N.d. "Quality assurance (Assurance qualité)." [http://www.pasteur-yaounde.org/index.php/fr/analyses-medicales-biochimi]. Accessed 25 September 2020.
[4] Cameroon Pasteur Centre (CPC). 2014. "Activity report 2014 (Rapport d'activités 2014)". [http://www.pasteur-yaounde.org/images/docs/1racpc2014.pdf]. Accessed 25 September 2020.
[5] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[7] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[8] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[9] Department of Pharmacy, Medication and Laboratories (DPML). Official website. [https://dpml.cm/index.php/fr]. Accessed 25 September 2020.
[10] Centers for Disease Control and Prevention (CDC). "CDC Programs in Cameroon Pivot to COVID-19 Response". [https://www.cdc.gov/globalhealth/stories/cameroon-covid-response.html]. Accessed 27 September 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The national laboratory which serves as a reference facility, the Medical Analysis Laboratory of Centre Pasteur Cameroone (CPC), is subject to external quality assurance review. The CPC was accredited to ISO 15189 standards on 12 November 2019, meaning it is a medical laboratory that meets the College of American Pathologists (CAP) International Organization for Standardization requirements for quality and competence, which requires regular external audits to identify and address nonconformities. [1,2] The 2017 Joint External Evaluation (JEE) of Cameroon identifies three national reference laboratories: the CPC, the National Veterinary Laboratory (LANAVET) and the Military Health Research Centre (CRESAR). [3] Only the CPC serves as a reference facility for the World Health Organisation (WHO) core tests. The CPC has undergone external quality review with regard to its compliance with ISO 15189 requirements through the Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) framework, receiving 4 out of 5 stars in a September 2017 review. [4,5] The US Centers for Disease Control and Prevention (CDC) supports laboratories in Cameroon to engage in the SLIPTA process. [6] The CPC is also subject to external quality assurance reviews for its WHO reference laboratories. [7] As for the other reference laboratories, there is no evidence from LANAVET's website that it is subject to external quality review, and CRESAR has no online presence. [8] The SLIPTA database does not record participation by these laboratories. [5] The JEE recommends "putting in place a national programme for quality assurance and external quality evaluation for all laboratories in all sectors." [3] In November 2017, the health ministry opened a Centre for Quality Assurance (CQA) within the National Public Health Laboratory (LNSP), which coordinates external quality evaluation programmes for laboratories in the national network. [9] Neither the LNSP nor the CQA has an online presence and no further information on its work is available from the health ministry, Department of Pharmacy, Medication and Laboratories, or media reporting. [10,11]

[1] Global Health System Solutions. "Press Release: CDC Cameroon and GHSS Secure First International Accreditation for a Centre Pasteur Laboratory in Africa". [https://dpml.cm/index.php/fr]. Accessed 25 September 2020.
[2] Schneider, F., Maurer, C., & Friedberg, R. C. June 2017. "International Organization for Standardization (ISO) 15189". [https://doi.org/10.3343/alm.2017.37.5.365]. Accessed 25 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[4] Cameroon Pasteur Centre (CPC). N.d. "Quality assurance (Assurance qualité)." [http://www.pasteur-yaounde.org/index.php/fr/analyses-medicales-biochimi]. Accessed 25 September 2020.
[5] African Society for Laboratory Medicine (ASLM). "SLIPTA table: Cameroon". [https://aslm.org/slipta-table/?myvar=Cameroon]. Accessed 25 September 2020.
[6] US Centers for Disease Control and Prevention (CDC). 19 Oct 2017. "Global Health - Cameroon." [https://www.cdc.gov/globalhealth/countries/cameroon/default.htm]. Accessed 25 September 2020.
[7] Cameroon Pasteur Centre (CPC). "Renewing accreditations (Renouvellement d'accréditations)". [http://www.pasteur-yaounde.org/index.php/fr/echos-du-cpc/691-renouvellement-d-accreditations]. Accessed 25 September 2020.
[8] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.
[9] Ministry of Public Health. "Official handing over of the keys ceremony for the Centre for Quality Assurance of the National Public Health Laboratory (Cérémonie de remise officielle des clés du Centre d'Assurance Qualité du Laboratoire National de Santé Publique)". [http://www.minsante.gov.cm/site/?q=fr/content/c%C3%A9r%C3%A9monie-de-remise-officielle-des-cl%C3%A9s-du-centre-dassurance-qualit%C3%A9-du-laboratoire-national]. Accessed 25 September 2020.
[10] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[11] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 25 September

2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 0

While there does exist limited disease-specific systems in Cameroon, there is insufficient evidence of a standardized, comprehensive, nationwide transport system that covers a minimum of 80% of the country. The 2017 Joint External Evaluation of Cameroon scores its section "Specimen referral and transport system" as a '2', having limited capacity and notes that documented transport systems exist in certain cases: for specimens of suspected Ebola, for specimens of diseases under the Expanded Programme on Immunisation (polio, measles, yellow fever), and for the vertical disease programmes (HIV and tuberculosis). The report further states that the transport system is still insufficient and recommends "putting in place a harmonised and secure system for transport/transfer of specimens at all levels [of laboratories] with standard operating procedures." [1] There is no publicly available evidence that a more comprehensive specimen transport system has been introduced since 2017 from the Ministries of Health, Livestock, or Scientific Research and Innovation, the Department of Pharmacy, Medication and Laboratories (DPML) or the Institute of Medical Research and Herbal Medicine Studies (IMPM). [2,3,4,5,6] The Cameroon Pasteur Centre (CPC), which has several reference laboratories for infectious diseases, received ISO 15189 accreditation which means its services are considered satisfactory. The list of services include transportation, however, no details are available on what this entails exactly or whether this means the transport system covers 80% of the country. [7] The National Public Health Laboratory (LNSP), which coordinates the national laboratory network, has no online presence. [1] There is no further evidence from the CPC or from the National Veterinary Laboratory (LANAVET). [8,9]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[3] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[5] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 25 September 2020.
[6] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.
[7] Cameroon Pasteur Centre (CPC). "The CPC in an accreditation process (Le CPC dans une demarche d'accreditation)". [http://www.pasteur-yaounde.org/index.php/fr/echos-du-cpc/645-le-cpc-dans-une-demarche-d-accreditation]. Accessed 13 November 2020.
[8] CPC. [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 25 September 2020.
[9] National Order of Veterinarians of Cameroon (Ordre National des Veterinaires du Cameroun). "LANAVET". [https://www.onvc.org/lanavet/]. Accessed 25 September 2020.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence to show that Cameroon has a plan in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. A study conducted in January 2020 describes Cameroon's laboratory system saying "outside the capacity, Cameroon does not have reliable laboratory capacity, and surveillance systems that rely on laboratory confirmation could potentially delay reporting from healthcare facilities". There is no mention of authorizing or licensing laboratories in the case of an outbreak. [1] There seems to be some requirements to register and license laboratory facilities in Cameroon, however the World Health Organization (WHO) webpages were non-functional at the time of this research so the study that discussed this was not accessible. [2] There is no mention of a plan in place to rapidaly authorize laboratories according to the 2017 Joint External Evaluation (JEE) for Cameroon. [3] No evidence of authorizing or licensing laboratories was found on the websites for the Ministry of Public Health or the Ministry of Agriculture. [4,5] The Cameroon Emergency Organization (Organisation de Secours) (ORSEC) plan is not publicly available.

[1] Research Square. January 2020. "The Joint External Evaluation process in Cameroon: Assessing the country's capacity for health security". [https://www.researchsquare.com/article/rs-14860/v1]. Accessed 27 September 2020.
[2] World Health Organization (WHO). [https://apps.who.int/iris/bitstream/handle/10665/204630/9789290232872.pdf?sequence=1&isAllowed=y]. Attempted accessed on 27 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Attempted access on 27 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[5] Ministry of Agriculture, Fisheries, and Livestock. [http://www.minepia.cm/]. Accessed 27 September 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 0

There is insufficient evidence that Cameroon is conducting ongoing event-based surveillance and analysis for infectious disease.

According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country has a national public health emergency operations centre (PHEOC), which has systems for detecting events and for notification. However, it appears that this includes only events notified through syndromic surveillance, not from analysis of open-source information. A score of 3 is given for indicator D.2.1, which corresponds to the existence of either an indicator- or an event-based surveillance system, but not both. In the analysis for this indicator, the JEE notes the existence of indicator-based surveillance. Under the analysis for indicator D.2.4 on syndromic surveillance, the JEE notes the existence of well-coordinated systems for indicator - and event-based surveillance - apparently referring to events notified through syndromic surveillance systems. [1,2]

Although, event-based surveillance activities have occured such as between May 2017 to January 2018, when "Cameroon's Ministry of Health, in partnership with the US Centers for Disease Control and Prevention, Cameroon Pasteur Center, and National Public Health Laboratory, implemented event-based surveillance (EBS) in nine Yaoundé health facilities", there is no evidence to suggest that this is an ongoing process. [3,4,5] Cameroon district-level stakeholders also participated in event-based surveillance training in 2019 and lead community training. "The Field Epidemiology Training Program (FETP) in Cameroon has integrated with the EBS system, with FETP residents and graduates participating in EBS trainings in partnership with a Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) consultant who is the main EBS point of contact in the country". Although trainings are being implemented, no evidence suggests that there is an ongoing system in place. [6]

No further information about Cameroon's event-based surveillance is available from the Ministry of Health, Agriculture or from the Institute of Medical Research and Herbal Medicine Studies, and the websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection, responsible for general emergency response, were not working at time of research. [7,8,9,10,11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] World Health Organisation (WHO). "Joint external evaluation tool: International Health Regulations (2005)." [http://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf;jsessionid=23918831F58E29C23DAE2CBBD8E908DC?sequence=1]. Accessed 25 September 2020.
[3] Alroy, K. A., Gwom, L. C., Ndongo, C. B., Kenmoe, S., Monamele, G., Clara, A., Whitaker, B., Manga, H., Tayimetha, C. Y., Tseuko, D., Etogo, B., Pasi, O., Etoundi, A. G., Seukap, E., Njouom, R., & Balajee, A. January 2020. "Strengthening timely detection and reporting of unusual respiratory events from health facilities in Yaoundé, Cameroon:. [https://doi.org/10.1111/irv.12684]. Accessed 25 September 2020.
[4] Centers for Disease Control and Prevention. [https://www.cdc.gov/]. Accessed 3 May 2021.
[5] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 27 September 2020.
[6] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). January 2020. [https://www.tephinet.org/strengthening-event-based-surveillance-ebs-globally-by-developing-a-standard-ebs-training-curriculum]. Accessed 25 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[8] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.
[9] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 25 September 2020.
[10] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 25 September 2020.
[11] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 25 September 2020.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has reported a potential public health emergency of international concern (PHEIC) to the World Health Organisation (WHO) within the last two years. Outbreaks of cholera and monkeypox, however, were reported to the WHO in June 2018. [1] Between 18 and 21 May 2018, the Mayo Oulo's Health Zone in Cameroon reported three suspected cholera cases and no deaths in two health areas in Northern Cameroon, bordering Nigeria. The WHO reported this on 14 June. [2] Between 30 April and 30 May 2018, one confirmed and 15 suspected cases of monkeypox were reported to Cameroon's Department of Control of Epidemic and Pandemic diseases (DLMEP). These cases were located in five districts of Cameroon. [3] As of May 2020, Cameroon's government had not declared a state of emergency, since it has "chosen to base the fight against COVID-19 on its existing legal framework. The fight against COVID-19 is a public health issue which, according to Cameroonian law, is a component of public order. The protection of public order is the responsibility of executive authorities, which have the power to adopt any executive orders for its preservation. As of now, all the measures taken in the context of the fight against COVID-19 are administrative measures", therefore, no public health emergency has been reported to the WHO in response to COVID-19. [4] There is no evidence of other potential PHEICs reported to the WHO in the past year from the Ministry of Public Health, and the DLMEP has no website. [5]

[1] World Health Organisation (WHO). "Disease Outbreak News - Cameroon". [https://www.who.int/csr/don/archive/country/cmr/en/]. Accessed 25 September 2020.
[2] World Health Organisation (WHO). June 2018. "Cholera - Cameroon." [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 25 September 2020.
[3] World Health Organisation (WHO). June 2018. "Monkeypox - Cameroon." [https://www.who.int/csr/don/05-june-2018-monkeypox-cameroon/en/]. Accessed 25 September 2020.
[4] Verfassungsblog on Matters Constitutional. May 2020. "Cameroon's Fight Against COVID-19: An Ordinary Legal Framework for an Extraordinary Situation". [https://verfassungsblog.de/cameroons-fight-against-covid-19-an-ordinary-legal-framework-for-an-extraordinary-situation/]. Accessed 25 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Cameroon's government operates an electronic reporting surveillance system at both the national and sub-national level. According to the 2017 Joint External Evaluation of Cameroon, the country has an Integrated Disease and Response Surveillance system for mandatory indicator-based surveillance, with standardised forms for collection of surveillance data at a national and sub-national level. For human health, District Heath Information System (DHIS 2) software is installed in all health districts for collection and transmission of surveillance data. In animal health, ARIS 2 software is installed in departmental (regional) offices of the livestock ministry to collect data on zoonoses under surveillance. There is not a mechanism for sharing data between the human and animal health sectors. Surveillance at community level is weak. [1] Nonetheless, the JEE notes in its recommendations for real time laboratory surveillance that the

country should establish a permanent / real-time laboratory data collection mechanism by the Surveillance system and strengthen modes of communication and information to the public. [1] No evidence of the electronic reporting surveillance system was found on the website of the Ministry of Public Health. [2]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon's electronic reporting surveillance system collects real-time laboratory data. According to the 2017 Joint External Evaluation of Cameroon, the country has an Integrated Disease and Response Surveillance system for mandatory indicator-based surveillance, with standardised forms for collection of surveillance data at a national and sub-national level. For human health, District Heath Information System (DHIS 2) software is installed in all health districts for collection and transmission of surveillance data. In animal health, ARIS 2 software is installed in departmental (regional) offices of the livestock ministry to collect data on zoonoses under surveillance. The JEE identifies the need to establish a mechanism for real-time collection of laboratory data by the surveillance system.[1] There is no evidence that this has been established since 2017 from the websites of the Ministry of Health, the Department of Pharmacy, Medicines and Laboratories, the Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Ministry of Livestock. [2,3,4,5]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 25 September 2020.
[4] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 25 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 25 September 2020.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 0

There is no evidence that electronic health records are not commonly in use, but there is evidence they are used, and that additional efforts are being made to increase their use.

According to the Ministry of Health's National Public Health Observatory website, patients can establish their own portable electronic medical records (EMR) using the Cameroon e-Health website. Being web-based and designed to operate on all standard hardware platforms, it is accessible from any health facility with Internet access. [1,2,3] There is also evidence from a 2016 academic article that the government has developed an in-house EMR system for primary care called MEDCAD, limited in coverage, which was developed without the use of open source applications. [4]

According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country has an Integrated Disease and Response Surveillance system for mandatory indicator-based surveillance, with standardised forms for collection of surveillance data at a national and sub-national level. For human health, District Heath Information System (DHIS 2) software is installed in all health districts for collection and transmission of surveillance data. The JEE identifies the need to establish a mechanism for real-time collection of laboratory data by the surveillance system. [5]

In July 2018, the Ministry of Health held a conference on EMRs, and presented information on the possible development of an EMR management system. [6] In 2020, following a multi-year process of desk study and consultations with major stakeholders in the country, Cameroon, with the support of the Centers for Disease Control and Prevention (CDC) and I-TECH University of Washington, developed a Digital Health Strategic Plan with the vision of ensuring "that by 2024, digital health contributes effectively to Universal Health Coverage (UHC), through informed decision-making at all levels of the health pyramid, through reliable, robust, secure and interoperable systems". The strategy explains that in 2016, "6% of households had access to the internet and 4% had fixed broadband access at home (at least 2 Mbps)". [7] Today in rural areas, "only 23% of people have access to electricity and communications networks can be patchy". [8] A recommendation provided in the strategy is to "digitize records used by health workers to capture and store health information on clients/patients in order to follow up their health status and services received" because it is recognized that digital technologies contribute to the advancement of universal health coverage. [7]

There is no additional information on EHR system(s) from the websites of Cameroon e-Health, the Ministry of Health, the National Public Health Observatory, the Institute of Medical Research and Herbal Medicine Studies (IMPM) or the Department of Pharmacy, Medications and Laboratories. [3,9,10,11,12]

[1] Ministry of Public Health/ National Public Health Observatory. N.d. "Cyber health (Cyber santé)". [http://onsp.minsante.cm/eHealth-mHealth]. Accessed 26 September 2020.
[2] Cameroon e-Health. N.d. "Personal health record." [https://www.cameroonehealth.com/personal-health.php]. Accessed 26 September 2020.
[3] Cameroon e-Health. N.d. "About us." [https://www.cameroonehealth.com/About.php]. Accessed 26 September 2020.
[4] Bello, O. et al. Nov 2016. "Driving electronic health record system implementation in Nigeria: A proposal," paper submitted for IEEE Conference on ICT for Communicable diseases. [https://www.researchgate.net/publication/317844683_Driving_Electronic_Health_Record_System_Implementation_in_Nigeria_A_Proposal]. Accessed 26 September 2020.
[5] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[6] University of Dschang. 8 Jul 2018. "Development of the electronic health record (Elaboration du dossier médical

électronique)". [https://www.univ-dschang.org/elaboration-du-dossier-medical-electronique/]. Accessed 26 September 2020.
[7] The 2020-2024 National Digital Health Strategic Plan. 2020. [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-PLAN-STRATEGIQUE-NATIONAL-DE-SANTE-NUMERIQUE_R%C3%A9duit.pdf]. Accessed 26 September 2020.
[8] Mongabay: News & Inspiration from Nature's Frontline. September 2020. "Filling the vauum: How civil society is battling COVID-19 in Cameroon (commentary)". [https://news.mongabay.com/2020/09/filling-the-vacuum-how-civil-society-is-battling-covid-19-in-cameroon/]. Accessed 26 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[10] Ministry of Public Health/National Public Health Observatory. [http://onsp.minsante.cm/]. Accessed 26 September 2020.
[11] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 26 September 2020.
[12] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 26 September 2020.

2.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to show that the national public health system has access to electronic health records of individuals in their country. According to the Ministry of Health's National Public Health Observatory website, patients can establish their own portable electronic medical records (EMR) using the Cameroon e-Health website, however it does not appear to be government-run. Being web-based and designed to operate on all standard hardware platforms, it is accessible from any health facility with Internet access. [1,2,3] There is also evidence from a 2016 academic article that the government has developed an in-house EMR system for primary care called MEDCAD, limited in coverage, which was developed without the use of open source applications. [4] According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country has an Integrated Disease and Response Surveillance system for mandatory indicator-based surveillance, with standardised forms for collection of surveillance data at a national and sub-national level. For human health, District Heath Information System (DHIS 2) software is installed in all health districts for collection and transmission of surveillance data. The JEE identifies the need to establish a mechanism for real-time collection of laboratory data by the surveillance system. [5] In July 2018, the Ministry of Health held a conference on EMRs, and presented information on the possible development of an EMR management system. [6] In 2020, following a multi-year process of desk study and consultations with major stakeholders in the country, Cameroon, with the support of the Centers for Disease Control and Prevention (CDC) and I-TECH University of Washington, developed a Digital Health Strategic Plan with the vision of ensuring "that by 2024, digital health contributes effectively to Universal Health Coverage (UHC), through informed decision-making at all levels of the health pyramid, through reliable, robust, secure and interoperable systems". The strategy explains that in 2016, "6% of households had access to the internet and 4% had fixed broadband access at home (at least 2 Mbps)". A recommendation provided in the strategy is to "digitize records used by health workers to capture and store health information on clients/patients in order to follow up their health status and services received" because it is recognized that digital technologies contribute to the advancement of universal health coverage, and so far these methods have not been thoroughly developed. [7] There is no additional information on EHR system(s) from the websites of Cameroon e-Health, the Ministry of Health, the National Public Health Observatory, the Institute of Medical Research and Herbal Medicine Studies (IMPM) or the Department of Pharmacy, Medications and Laboratories. [3,8,9,10,11]

[1] Ministry of Public Health/ National Public Health Observatory. N.d. "Cyber health (Cyber santé)". [http://onsp.minsante.cm/eHealth-mHealth]. Accessed 26 September 2020.
[2] Cameroon e-Health. N.d. "Personal health record." [https://www.cameroonehealth.com/personal-health.php]. Accessed 26 September 2020.
[3] Cameroon e-Health. N.d. "About us." [https://www.cameroonehealth.com/About.php]. Accessed 26 September 2020.
[4] Bello, O. et al. Nov 2016. "Driving electronic health record system implementation in Nigeria: A proposal," paper submitted for IEEE Conference on ICT for Communicable diseases. [https://www.researchgate.net/publication/317844683_Driving_Electronic_Health_Record_System_Implementation_in_Nigeria_A_Proposal]. Accessed 26 September 2020.
[5] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[6] University of Dschang. 8 Jul 2018. "Development of the electronic health record (Elaboration du dossier médical électronique)". [https://www.univ-dschang.org/elaboration-du-dossier-medical-electronique/]. Accessed 26 September 2020.
[7] The 2020-2024 National Digital Health Strategic Plan. 2020. [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-PLAN-STRATEGIQUE-NATIONAL-DE-SANTE-NUMERIQUE_R%C3%A9duit.pdf]. Accessed 26 September 2020.
[8] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[9] Ministry of Public Health/National Public Health Observatory. [http://onsp.minsante.cm/]. Accessed 26 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 26 September 2020.
[11] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 26 September 2020.

2.4.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence to show that there exist data standards to ensure data is comparable (e.g., ISO standards). According to the Ministry of Health's National Public Health Observatory website, patients can establish their own portable electronic medical records (EMR) using the Cameroon e-Health website, however it does not appear to be government-run. Being web-based and designed to operate on all standard hardware platforms, using Service Oriented Architecture (SOA). The site provides no information on data standards used. [1,2,3] There is also evidence from a 2016 academic article that the government has developed an in-house electronic medical records (EMR) system for primary care called MEDCAD, however it is limited in coverage, and was developed without the use of open source applications. No evidence exists to suggest that there are data standards to follow. [4] In July 2018, the Ministry of Health held a conference on EMRs, presenting information on an envisaged system based on OpenMRS, currently being tested in two sites. A team from Dschang University proposed automating the exchange of data between the EMR management system and other health data management systems, such as DHIS2 (used for disease surveillance). However, information is lacking on whether the government's OpenMRS system and Cameroon e-Health's system use common data standards. [5] In 2020, following a multi-year process of desk study and consultations with major stakeholders in the country, Cameroon, with the support of the Centers for Disease Control and Prevention (CDC) and I-TECH University of Washington, developed a Digital Health Strategic Plan with the vision of ensuring "that by 2024, digital health contributes effectively to Universal Health Coverage (UHC), through

informed decision-making at all levels of the health pyramid, through reliable, robust, secure and interoperable systems". The strategy explains that in 2016, "6% of households had access to the internet and 4% had fixed broadband access at home (at least 2 Mbps)". One of it's objective pillars includes Health Data Standards and Interoperability, recognizing that at the moment, "health applications are developed according to a set of specifications that does not always take into account the existence of parallel solutions or operational integrity constraints in relation to ineroperability". The strategy concludes that it will support the production of guidelines on standards and interoperability to ensure their proper implementation and monitoring. [6] There is no additional information on data standards for the EMR system(s) from the websites of Cameroon e-Health, the Ministry of Health, the National Public Health Observatory, the Institute of Medical Research and Herbal Medicine Studies (IMPM) or the Department of Pharmacy, Medications and Laboratories. [3,7,8,9,10] The 2017 Joint External Evaluation (JEE) of Cameroon provides no further evidence showing that data standards exist in Cameroon to ensure data is comparable. [11]

[1] Ministry of Public Health/ National Public Health Observatory. N.d. "Cyber health (Cyber santé)". [http://onsp.minsante.cm/eHealth-mHealth]. Accessed 27 September 2020.
[2] Cameroon e-Health. N.d. "Personal health record." [https://www.cameroonehealth.com/personal-health.php]. Accessed 27 September 2020.
[3] Cameroon e-Health. N.d. "About us." [https://www.cameroonehealth.com/About.php]. Accessed 27 September 2020.
[4] Bello, O. et al. Nov 2016. "Driving electronic health record system implementation in Nigeria: A proposal," paper submitted for IEEE Conference on ICT for Communicable diseases. [https://www.researchgate.net/publication/317844683_Driving_Electronic_Health_Record_System_Implementation_in_Nigeria_A_Proposal]. Accessed 27 September 2020.
[5] University of Dschang. 8 Jul 2018. "Development of the electronic health record (Elaboration du dossier médical électronique)". [https://www.univ-dschang.org/elaboration-du-dossier-medical-electronique/]. Accessed 27 September 2020.
[6] The 2020-2024 National Digital Health Strategic Plan. 2020. [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-PLAN-STRATEGIQUE-NATIONAL-DE-SANTE-NUMERIQUE_R%C3%A9duit.pdf]. Accessed 27 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[8] Ministry of Public Health/National Public Health Observatory. [http://onsp.minsante.cm/]. Accessed 27 September 2020.
[9] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 26 September 2020.
[10] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[11] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 27 September 2020.

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

2.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of established mechanisms at the relevant ministries responsible for animal, human and wildlife surveillance in Cameroon to share data, though there is evidence of collaboration. According to the 2017 Joint External Evaluation of Cameroon, action plans for surveillance and response to key zoonotic diseases are being developed according to a One Health approach involving collaboration between the different sectoral administrations, and animal health personnel work in the public health system at national and sub-national levels. However, there is no mechanism for data sharing among sectors, and there are no standard operating procedures for forming multidisciplinary teams. The human and animal surveillance reporting systems use different software and are not linked, and wildlife surveillance is still in the pilot stage. The JEE recommends establishing systems and procedures for sharing information during normal times, and establishing a platform for sharing data and information from human, animal and environmental surveillance. [1] The World Health Organisation reported in 2017 that it was supporting Cameroon to establish a laboratory network encompassing human, animal, vegetable and environmental health sectors, which would enable real-time sharing of laboratory information. [2] No more recent or updated evidence was found on cross-sectoral data-sharing mechanisms since 2017, from the Ministries of Health or Livestock. [3,4] Neither was evidence found on websites for the Ministry of Health's National Public Health Observatory, the Research Ministry's Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Department of Pharmacy, Medications and Laboratories. [5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[2] World Health Organisation (WHO). 2017. "Cameroon: Annual report (Cameroun: Rapport annuel)". [https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/cameroon_who_country_office_annual_report_2017_french.pdf]. Accessed 27 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[4] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 27 September 2020.
[5] Ministry of Public Health/National Public Health Observatory. [http://onsp.minsante.cm/]. Accessed 27 September 2020.
[6] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 26 September 2020.
[7] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Cameroon makes de-identified health surveillance data on disease outbreaks publicly available via reports (or other format) on government websites (such as the Ministry of Health, Ministry of Agriculture, or similar).

When accessing the Ministry of Health's website, a pop-up window on COVID-19 statistics appears upon accessing the site.

The automatic window provides daily updates on the numbers of confirmed cases of COVID-19, as well as deaths, cured and active cases. [1,2] There is also a link on the Ministry of Health's homepage that directs you to another COVID-19 page with the same information provided in the pop-up and contains recorded daily briefings given by representatives of the Ministry of Health. [3] The daily briefings are also provided as written reports, however the last daily report was shared in July 2020. [4]

Although the COVID-19 data is provided regularly, there is insufficient evidence that the Ministry of Health makes de-identified health surveillance data on other disease outbreaks publicly available via reports on a weekly basis. The Ministry of Health does have a webpage that provides general information and statistics on the public health in the country but does not update it on a weekly or more frequent basis. The site includes statistics with regards to the prevalence of HIV, children under five mortality rates, Tuberculosis reports per 100,000 inhabitants, percentage of births assisted by a qualified personnel, and Malaria parasite prevalence rate. [5] The site also has a page that specifically provides information on HIV, which include published articles, how to prevent contracting the virus, projects active in the country. [6]

[1] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[2] Ministry of Public Health. "COVID-19". [http://covid19.minsante.cm/]. Accessed 26 September 2020.
[3] Ministry of Publich Health. "COVID-19 Briefings". [http://covid19.minsante.cm/actualites/]. Accessed 26 September 2020.
[4] Ministry of Public Health. July 2020. "Daily press briefing of the minister of public health". [https://www.minsante.cm/site/?q=en/content/point-de-presse-du-07-juillet-2020]. Accessed 14 November 2020.
[5] Ministry of Public Health. "National Observatory of Public Health". [http://onsp.minsante.cm/en]. Accessed 26 September 2020.
[6] Ministry of Public Health. "Fight against HIV/AIDS (Lutte contre le SIDA)". [http://www.cnls.cm/Bienvenue-Welcome]. Accessed 26 September 2020.

2.4.3b

Does the country make de-identified COVID-19 surveillance data (including details such as daily case count, mortality rate, etc) available via daily reports (or other formats) on government websites (such as the Ministry of Health, or similar)?
Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Cameroon makes de-identified health surveillance data on COVID-19 publicly available via daily reports (or other formats) on government websites (such as the Ministry of Health, Ministry of Agriculture, or similar). The Ministry of Health's home page contains a pop-up window on COVID-19 statistics upon entering the site. The automatic window provides daily updates on the numbers of confirmed cases of COVID-19, as well as deaths, cured and active cases. The pop-up also provides the Ministry of Health's COVID-19 strategy's 4 objectives, phone numbers in case someone believes they have contracted the virus, measures to take to minimize the risk of getting COVID-19, as well as a list of questions and answers for people to be better informed. [1] When entering the Ministry of Health's website, there is also a link that directs you to another COVID-19 page with the same information provided in the pop-up. It also contains recorded daily briefings given by representatives of the Ministry of Health. However, it does look as though a few of the briefing links are not currently available. [2]

[1] Ministry of Public Health. "COVID-19". [http://covid19.minsante.cm/]. Accessed 27 September 2020.
[2] Ministry of Publich Health. "COVID-19 Briefings". [http://covid19.minsante.cm/actualites/]. Accessed 27 September 2020.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Cameroon has laws, regulations or guidelines that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. The Collaboration on International Information Control and Technology (ICT) Policy for East and Southern Africa (CIPESA), a group that promotes effective and inclusive ICT policies in Africa, reports that "Cameroon does not have a data protection and privacy law", except for the Law N. 96-06 of 18 January 1996, which "guarantees privacy of communications in its preamble, stating that "the privacy of all correspondence is inviolate. No interference may be allowed except by virtue of decisions emanating from Judicial Power". There is no mention of data generated through health surveillance activities. [1] And an online law magazine, called Law.com, reported in May 2020 that "Cameroon, in central Africa, adopted cybercrime legislation in 2010, but has yet to introduce a specific data protection law" and also makes no mention of health data. [2] Information confidentiality is not addressed in the 1996 health law, which provides the legal framework for the health sector. [3] Law no. 90-36 from 1990 covers the exercise and organisation of the medical profession and states that it requires doctors to respect doctor-patient confidentiality and the professional Code of Ethics but does not specifically address confidentiality of health information for individuals. [4] The Code of Ethics reiterates the requirement for doctor-patient confidentiality, but does not mention confidentiality in the context of health information systems. [5] A 2010 decree establishing the Public Health Observatory, which incorporates the disease surveillance system, does not mention information confidentiality; nor does the 2016-2027 strategy for the health sector, or the 2016-2020 health development strategy. [6,7,8] No further regulations or guidance on information confidentiality within health systems are available from the Ministry of Health, the Institute of Medical Research and Herbal Medicine Studies or the Department of Pharmacy, Medications and Laboratories. [9,10,11] The 2020-2024 National Digital Health Strategic Plan also recoginzes that "there are legal loopholes in the implementation of health interventions in Cameroon, including the absence of instruments guaranteeing confidentiality and the right to privacy", therefore, as of the writing of this strategy in 2020, a draft instrument on telemedicine was being finalized by the Ministry of Public Health. [12]

[1] Collaboration on International ICT Policy for East and Southern Africa (CIPESA). September 2019. "Overview of Cameroon's Digital Landscape". [https://cipesa.org/2019/09/overview-of-cameroons-digital-landscape/]. Accessed 14 November 2020.
[2] Law.com. May 2020. "Africa's Lack of Data Protection Has Created Deep Vulnerabilities. But Is Change On The Way?". [https://www.law.com/legaltechnews/2020/05/27/africas-lack-of-data-protection-and-cybercrime-laws-has-created-deep-vulnerabilities-but-is-change-on-the-way-397-34613/?slreturn=20201014140236]. Accessed 14 November 2020.
[3] Government of Cameroon. 1996. "Law no. 96/03 of 4 January 1996 providing the legal framework for the health sector (Loi no. 96/03 du 4 janvier 1996 portant loi cadre dans le domaine de la santé)". [https://www.medcamer.org/wp-content/uploads/2014/11/Loi-cadre-sant%C3%A9-1996.pdf]. Accessed 27 September 2020.
[4] Government of Cameroon. 1990. "Law no. 90-36 of 10 August 1990 on the exercise and organisation of the medical profession (Loi no. 90-36 du 10 août relative à l'exercise et à l'organisation de la profession de médécin)". Download from link by clicking on "Chapter iv (Chapitre iv)". [http://cm-minsante-drh.com/site/index.php/home-4/category/9-textes-reglementaires-legislation-du-ministere-de-la-sante-publique]. Accessed 27 September 2020.
[5] Government of Cameroon. 1983. "Decree no. 83-166 of 12 April 1983 providing the code of medical ethics (Décret no. 83-166 du 12 avril 1983 portant code de déontologie des médécins)". Download from link by clicking on "Chapter iv (Chapitre iv)". [http://cm-minsante-drh.com/site/index.php/home-4/category/9-textes-reglementaires-legislation-du-ministere-de-la-

sante-publique]. Accessed 27 September 2020.
[6] Government of Cameroon. 2010. "Decree no. 2010/2952/PM of 1 November 2010 on creation, organisation and functioning of the Public Health Observatory (Decret no. 2010/2952/PM du 1er novembre 2010 portant creation, organisation et fonctionnement de l'Observatoire de la Santé Publique)". [http://opencamer.blogspot.com/2013/08/decret-n-20102952pm-du-1er-novembre.html]. Accessed 27 September 2020.
[7] Ministry of Public Health. 11 Jan 2016. "Health sector strategy 2016-2027 (Stratégie sectorielle de santé 2016-2027)". [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-Strategie-Sectorielle-de-Sante-2016-2027.pdf]. Accessed 27 September 2020.
[8] Ministry of Public Health. Aug 2016. "National health development strategy 2016-2020." [http://www.minsante.cm/site/sites/default/files/PNDS_FRANCAIS-min.pdf]. Accessed 27 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[11] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[12] The 2020-2024 National Digital Health Strategic Plan. 2020. [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-PLAN-STRATEGIQUE-NATIONAL-DE-SANTE-NUMERIQUE_R%C3%A9duit.pdf]. Accessed 27 September 2020.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Cameroon has laws, regulations or guidelines that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities and which include mention of protections from cyber attacks. The Collaboration on International Information Control and Technology (ICT) Policy for East and Southern Africa (CIPESA), a group that promotes effective and inclusive ICT policies in Africa, reports that "Cameroon does not have a data protection and privacy law", except for the Law N. 96-06 of 18 January 1996, which "guarantees privacy of communications in its preamble, stating that "the privacy of all correspondence is inviolate. No interference may be allowed except by virtue of decisions emanating from Judicial Power". There is no mention of data generated through health surveillance activities and no indication that protections from cyber attacks are included. [1] And an online law magazine, called Law.com, reported in May 2020 that "Cameroon, in central Africa, adopted cybercrime legislation in 2010, but has yet to introduce a specific data protection law" and also makes no mention of health data. [2] Information confidentiality is not addressed in the 1996 health law, which provides the legal framework for the health sector. [3] Law no. 90-36 from 1990 covers the exercise and organisation of the medical profession and states that it requires doctors to respect doctor-patient confidentiality and the professional Code of Ethics but does not specifically address confidentiality of health information for individuals. [4] The Code of Ethics reiterates the requirement for doctor-patient confidentiality, but does not mention confidentiality in the context of health information systems or protections from cyber attacks. [5] A 2010 decree establishing the Public Health Observatory, which incorporates the disease surveillance system, does not mention information confidentiality; nor does the 2016-2027 strategy for the health sector, or the 2016-2020 health development strategy. [6,7,8] No further regulations or guidance on information confidentiality within health systems are available from the Ministry of Health, the Institute of Medical Research and Herbal Medicine Studies or the Department of Pharmacy, Medications and Laboratories. [9,10,11] The 2020-2024 National Digital Health Strategic Plan also recoginzes

that "there are legal loopholes in the implementation of health interventions in Cameroon, including the absence of instruments guaranteeing confidentiality and the right to privacy", therefore, as of the writing of this strategy in 2020, a draft instrument on telemedicine was being finalized by the Ministry of Public Health. [12]

[1] Collaboration on International ICT Policy for East and Southern Africa (CIPESA). September 2019. "Overview of Cameroon's Digital Landscape". [https://cipesa.org/2019/09/overview-of-cameroons-digital-landscape/]. Accessed 14 November 2020.
[2] Law.com. May 2020. "Africa's Lack of Data Protection Has Created Deep Vulnerabilities. But Is Change On The Way?". [https://www.law.com/legaltechnews/2020/05/27/africas-lack-of-data-protection-and-cybercrime-laws-has-created-deep-vulnerabilities-but-is-change-on-the-way-397-34613/?slreturn=20201014140236]. Accessed 14 November 2020.
[3] Government of Cameroon. 1996. "Law no. 96/03 of 4 January 1996 providing the legal framework for the health sector (Loi no. 96/03 du 4 janvier 1996 portant loi cadre dans le domaine de la santé)". [https://www.medcamer.org/wp-content/uploads/2014/11/Loi-cadre-sant%C3%A9-1996.pdf]. Accessed 27 September 2020.
[4] Government of Cameroon. 1990. "Law no. 90-36 of 10 August 1990 on the exercise and organisation of the medical profession (Loi no. 90-36 du 10 août relative à l'exercise et à l'organisation de la profession de médécin)". Download from link by clicking on "Chapter iv (Chapitre iv)". [http://cm-minsante-drh.com/site/index.php/home-4/category/9-textes-reglementaires-legislation-du-ministere-de-la-sante-publique]. Accessed 27 September 2020.
[5] Government of Cameroon. 1983. "Decree no. 83-166 of 12 April 1983 providing the code of medical ethics (Décret no. 83-166 du 12 avril 1983 portant code de déontologie des médécins)". Download from link by clicking on "Chapter iv (Chapitre iv)". [http://cm-minsante-drh.com/site/index.php/home-4/category/9-textes-reglementaires-legislation-du-ministere-de-la-sante-publique]. Accessed 27 September 2020.
[6] Government of Cameroon. 2010. "Decree no. 2010/2952/PM of 1 November 2010 on creation, organisation and functioning of the Public Health Observatory (Decret no. 2010/2952/PM du 1er novembre 2010 portant creation, organisation et fonctionnement de l'Observatoire de la Santé Publique)". [http://opencamer.blogspot.com/2013/08/decret-n-20102952pm-du-1er-novembre.html]. Accessed 27 September 2020.
[7] Ministry of Public Health. 11 Jan 2016. "Health sector strategy 2016-2027 (Stratégie sectorielle de santé 2016-2027)". [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-Strategie-Sectorielle-de-Sante-2016-2027.pdf]. Accessed 27 September 2020.
[8] Ministry of Public Health. Aug 2016. "National health development strategy 2016-2020." [http://www.minsante.cm/site/sites/default/files/PNDS_FRANCAIS-min.pdf]. Accessed 27 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[10] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[11] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[12] The 2020-2024 National Digital Health Strategic Plan. 2020. [https://www.prb.org/wp-content/uploads/2020/06/Cameroun-PLAN-STRATEGIQUE-NATIONAL-DE-SANTE-NUMERIQUE_R%C3%A9duit.pdf]. Accessed 27 September 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 1

There is evidence that Cameroon has made a commitment via a cooperative agreement to share surveillance data for one disease (Cholera) with other countries in the Central and West Africa region but not for public health emergencies generally.

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

Cameroon was also one of the Central African countries which operationalized the Africa Centres for Disease Control and Prevention's (Africa CDC) Regional Collaborating Centre (RCC) in Gabon in July 2017. This enables collaboration over surveillance of and emergency response to infectious diseases, but there is no evidence that Cameroon's involvement in the Africa CDC specifically involves a commitment to share surveillance data during a public health emergency. [4,5,6] Cameroon is part of the One Health Central and Eastern Africa Network (OHCEA), the members of which collaborate over capacity building for disease control, but again there is no evidence that this involves a commitment to share surveillance data during a public health emergency. [7]

There is no evidence of other relevant national plans from the websites of the Ministry of Health, the Department of Pharmacy, Medication and Laboratories (DPML), the Ministry of Research or its Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Cameroon Pasteur Centre which oversees surveillance for several diseases. [8,9,10,11,12]

[1] Health Ministers of Benin, Cameroon, Central African Republic, Chad, Equatorial Guinea, Niger and Nigeria. 18 Oct 2010. "Abuja Commitment on Public Health Issues." [https://plateformecholera.info/attachments/article/317/Abuja%20Commitment%202010%20(EN).pdf]. Accessed 27 September 2020.
[2] The West and Central Africa Cholera Platform. 2018. "Lake Chad Basin - the cross-border meeting of Ndjamena (June 2018)." [https://plateformecholera.info/index.php/coordination/workshop/542-lake-chad-basin-the-cross-border-meeting-of-ndjamena-june-2018]. Accessed 27 September 2020.
[3] The West and Central Africa Cholera Platform. May 2017. "Overview of the strategy to control and prevent cholera in West and Central Africa: The "Shield and Sword" concept." [https://www.plateformecholera.info/attachments/category/99/Brochure%20Strategie%20BCP%202017__may2017.pdf]. Accessed 27 September 2020.
[4] African Union. 2 Aug 2017. "Central Africa establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to improve surveillance, preparedness and response to infectious and non-communicable diseases." [https://reliefweb.int/report/world/central-africa-establishes-africa-centres-disease-control-and-prevention-regional]. Accessed 27 September 2020.
[5] African Union/Africa Centers for Disease Control and Prevention. "Regional collaborating centres." [https://unfccc.int/about-us/regional-collaboration-centres/rcc-lome]. Accessed 27 September 2020.
[6] African Union/Africa Centers for Disease Control and Prevention. "Continental commitments." [https://africacdc.org/resource-type/continental-commitments/]. Accessed 27 September 2020.
[7] One Health Central and Eastern Africa Network (OHCEA). N.d. "About us." [https://www.devex.com/organizations/one-health-central-and-eastern-africa-network-ohcea-121664#:~:text=One%20Health%20Central%20and%20Eastern%20Africa%20(OHCEA)%20is%20an%20international,in%20Ea

stern%2C%20Central%20and%20Western]. Accessed 27 September 2020.
[8] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[9] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[10] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 27 September 2020.
[11] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[12] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 27 September 2020.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

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

Starting in January 2020, the Centers for Disease Control and Prevention (CDC), supported Cameroon's preparedness and response to the COVID-19 pandemic by assisting in the Ministry of Public Health's COVID-19 plans and conducting trainings at national and regional levels. As well, "more than 800 graduates of the CDC-established Field Epidemiology Training Program are working in 10 regions of Cameroon. They are trained to collect, analyze, and interpret data and contribute to evidence-based decisions. They constitute the rapid response teams and are the ground force of Cameroon's COVID-19 response - conducting disease surveillance, case investigations, and contact tracing". Although contact tracing is being used during the recent pandemic, no evidence was found that that the national government supports sub-national systems to prepare for future public health emergencies. [1]

There is also evidence that contact tracing is being scaled up through efforts from other organizations. [2,3,4] In response to COVID-19, the government of Cameroon has also put in place a preparedness and response plan which includes contact tracing as part of it's third objective, which is to "Rapidly investigate all cases whether rumors or suspected cases". [5] There is no other evidence of a national system that could provide contact tracing support in the event of a public health emergency from the websites of the Ministry of Health, the Department of Pharmacy, Medication and Laboratories (DPML), the Ministry of Research or its Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Cameroon Pasteur Centre which oversees surveillance for several diseases. [6,7,8,9,10]

[1] Centers for Disease Control and Prevention (CDC). "CDC Programs in Cameroon Pivot to COVID-19 Response". [https://www.cdc.gov/globalhealth/stories/cameroon-covid-response.html]. Accessed 27 September 2020.
[2] Action Against Hunger. April 2020. "Scaling up contact tracing in Cameroon". [https://www.actionagainsthunger.org.uk/blog/scaling-contact-tracing-cameroon]. Accessed 27 September 2020.
[3] Network Africa. April 2020. "COVID-19: Cameroon intensifies contact tracing".

[https://www.youtube.com/watch?v=zIRot0bmwVs]. Accessed 27 September 2020.
[4] United Nations AIDS (UNAIDS). May 2020. "Dealing with COVID-19 in Cameroon". [https://www.unaids.org/en/resources/presscentre/featurestories/2020/may/20200511_covid19-cameroon]. Accessed 27 September 2020.
[5] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 27 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[7] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[8] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 27 September 2020.
[9] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[10] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 27 September 2020.

2.5.1b

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

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

Current Year Score: 0

No evidence was found that Cameroon has wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, particularly economic support (paycheck, job security) and medical attention. There is no mention of wraparound services in the Government of Cameroon's preparedness and response plan to COVID-19. [1] There is no other evidence of wraparound services from the websites of the Ministry of Health, the Department of Pharmacy, Medication and Laboratories (DPML), the Ministry of Research or its Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Cameroon Pasteur Centre which oversees surveillance for several diseases. [2,3,4,5,6]

[1] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 27 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 27 September 2020.
[5] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[6] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 27 September 2020.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence to show that Cameroon makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports (or other format) on government websites (such as the Ministry of Health, or similar). Although Cameroon does make de-identified data on the number of cases available, no evidence was found of contact tracing efforts. The Ministry of Health's home page contains a pop-up window on COVID-19 statistics upon entering the site. The automatic window provides daily updates on the numbers of confirmed cases of COVID-19, as well as deaths, cured and active cases. The pop-up also provides the Ministry of Health's COVID-19 strategy's 4 objectives, phone numbers in case someone believes they have contracted the virus, measures to take to minimize the risk of getting COVID-19, as well as a list of questions and answers for people to be better informed. [1] When entering the Ministry of Health's website, there is also a link that directs to another COVID-19 page with the same information provided in the pop-up. It also contains recorded daily briefings given by representatives of the Ministry of Health. No information on contact tracing is included in these daily updates. [2]

[1] Ministry of Public Health. "COVID-19". [http://covid19.minsante.cm/]. Accessed 27 September 2020.
[2] Ministry of Publich Health. "COVID-19 Briefings". [http://covid19.minsante.cm/actualites/]. Accessed 27 September 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no evidence of a joint plan or cooperative agreement between the public health system and border control authorities to monitor suspected and potential cases for international travelers in the event of an active or future public health emergency.

The 2017 Joint External Evaluation of Cameroon scores the liaison between the "Public health and safety authorities (for example, services responsible for law enforcement, border control and customs)" during a "suspected or confirmed biological event" a '2', meaning Cameroon has limited capacity in this regard. [1] In response to the COVID-19 pandemic, Cameroon made the announcement that it would close its borders stating that "On March 17, the government said it shut down land, air and sea borders indefinitely, starting from March 18. All international flights were suspended, except for cargo planes, until April 17", however in these communications, there is no indication that a cooperative agreement has been made between the public health system and border control authorities to monitor cases for international travelers to prepare for future public health emergencies or in response to active public health emergencies. [2,3]

There is no other evidence of agreements with border control authorities having to do with monitoring cases during public health emergencies from the websites of the Ministry of Health, the Department of Pharmacy, Medication and Laboratories (DPML), the Ministry of Research or its Institute of Medical Research and Herbal Medicine Studies (IMPM), or the Cameroon Pasteur Centre which oversees surveillance for several diseases. [4,5,6,7,8]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 15 November 2020.
[2] Aljazeera. June 2020. "Coronavirus: Travel restrictions, border shutdowns by country". [https://www.aljazeera.com/news/2020/06/03/coronavirus-travel-restrictions-border-shutdowns-by-country/]. Accessed 27 September 2020.
[3] United States Embassy in Cameroon. March 2020. "Cameroon Border Closure". [https://cm.usembassy.gov/cameroon-border-closure/]. Accessed 27 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[5] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 27 September 2020.
[6] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 27 September 2020.
[7] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 27 September 2020.
[8] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 27 September 2020.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?
- Applied epidemiology training program (such as FETP) is available in country
- Resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP)

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

Current Year Score: 1

A field epidemiology training programme (FETP) is available in Cameroon, but there is no evidence that the government provides resources to send citizens to another country to participate in an applied epidemiology training programme. The 2017 Joint External Evaluation of Cameroon notes the existence of an FETP under the Ministry of Health and Higher Education. [1] Candidates must be civil servants employed by the Ministry of Health or Livestock. [2] Cameroon Field Epidemiology Training Programme (CAFETP) was established with support from the US Centers for Disease Control and Prevention (CDC) and the Defense Threat Reduction Agency (DTRA) in 2011. It includes basic and advanced programmes and is accredited by the Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). [3] In 2019, district-level stakeholders participated in event-based surveillance (EBS) training and lead their own community trainings. In some cases, the FETP in Cameroon "has integrated with the EBS system, with FETP residents and graduates participating in EBS trainings in partnership with a [TEPHINET] consultant who is the main EBS point of contact in the country". There is no further evidence through this program that Cameroon provides resources to travel to get FETP training. [4] There is no evidence from the Ministry of Health, Agriculture, or Higher Education of a government program to fund citizens to attend an applied epidemiology programme in another country. [5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[2] Ministry of Public Health. 12 Jul 2018. "Ministry of Public Health and Ministry of Higher Education joint notice of 12 July 2018 on the organisation of the admissions contest for the field epidemiology training programme 'Cameroon Field Epidemiology Training Programme' (Arrêté conjoint MINSANTE-MINESUP du 12 juillet 2018, portant organisation du concours d'admission du programme de formation en épidémiologie de terrain du Cameroun "Cameroon Field Epidemiology Training Programme")". [http://www.minsante.gov.cm/site/?q=fr/content/arr%C3%AAt%C3%A9-conjoint-minsante-minesup-du-12-juillet-2018-portant-organisation-du-concours]. Accessed 27 September 2020.
[3] Cameroon Field Epidemiology Training Programme (CAFETP). [http://cafetp.org/]. Accessed 27 September 2020.
[4] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). January 2020. [https://www.tephinet.org/strengthening-event-based-surveillance-ebs-globally-by-developing-a-standard-ebs-training-curriculum]. Accessed 15 November 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 27 September 2020.
[7] Ministry of Higher Education. [https://www.google.com/search?client=firefox-b&q=cameroun+MINESUP]. Accessed 27 September 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

Cameroon Field Epidemiology Training Programme (CAFETP) is explicitly inclusive of animal health professionals. The 2017 Joint External Evaluation of Cameroon notes the existence of an FETP under the Ministry of Health and Higher Education. [1] Candidates must be civil servants employed by the Ministries of Health and/or Livestock. [2] The cohort at the time of the JEE assessment included 3 veterinarians. [1] CAFETP was established with support from the US Centers for Disease Control and Prevention (CDC) and the Defense Threat Reduction Agency (DTRA) in 2011. It includes basic and advanced programmes and is accredited by TEPHINET. [3] Additionally, in 2018, the FAO and the Institute for Infectious Animal Diseases (IIAD) at Texas A&M AgriLife Research launched the In-Service Applied Veterinary Epidemiology (ISAVET) program in 14 countries, including Cameroon. [4,5] The program is a four-month frontline field epidemiology program to train veterinary field epidemiologists. [6]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[2] Ministry of Public Health. 12 Jul 2018. "Ministry of Public Health and Ministry of Higher Education joint notice of 12 July 2018 on the organisation of the admissions contest for the field epidemiology training programme "Cameroon Field Epidemiology Training Programme" (Arrêté conjoint MINSANTE-MINESUP du 12 juillet 2018, portant organisation du concours d'admission du programme de formation en épidémiologie de terrain du Cameroun "Cameroon Field Epidemiology Training Programme")". [http://www.minsante.gov.cm/site/?q=fr/content/arr%C3%AAt%C3%A9-conjoint-minsante-minesup-du-12-juillet-2018-portant-organisation-du-concours]. Accessed 27 September 2020.
[3] Cameroon Field Epidemiology Training Programme (CAFETP). [http://cafetp.org/]. Accessed 27 September 2020.

[4] Food and Agriculture Organisation (FAO) of the United Nations. October 2018. "New training for veterinarians in 14 African countries to help combat infectious diseases." [http://www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/1161401]. Accessed 27 September 2020.
[5] Institute for Infectious Animal Diseases. "Frontline ISAVET." [https://iiad.tamu.edu/frontline-isavet]. Accessed 27 September 2020.
[6] Food and Agriculture Organisation (FAO) of the United Nations. October 2019. "First FAO ISAVET training programme held in Uganda." [http://www.fao.org/resilience/news-events/detail/en/c/1171750]. Accessed 27 September 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 1

There is no evidence that Cameroon has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, though some disease-specific response plans exist, such as the detailed emergency response plan published for the 2018 cholera epidemic, based on the national contingency plan for cholera. [1] According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011), which is a disaster risk reduction plan; sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. There is no multi-risk plan for response to public health emergencies, though at the time of writing the report, preparatory work had been done to map out risks and resources. [2] The 'National contingency plan'

addresses human and animal disease outbreaks. It does not provide health emergency response plans, but calls for these to be developed. [3] No evidence was found of an updated National Continguency Plan and the disease-specific contingency plans are not publicly available, nor is there evidence of a new general public health emergency response plan, from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [4,5,6,7] As of 2017, the ORSEC plan only covered two municipalities and no evidence was found to show that updates have been made since. [8] The ORSEC plan is also not publicly available, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10] No further evidence was found on the Ministry of Health website. [11] A National Preparation and Response Strategic Plan was also developed in February 2020, in response to the COVID-19 pandemic and does not address planning for multiple communicable diseases. [12]

[1] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 27 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[3] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 26 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 26 September 2020.
[6] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 26 September 2020.
[7] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 26 September 2020.
[8] United National Development Program (UNDP). August 2017. "Assessment of Development Results. Evaluation of UNDP Contribution. Cameroon". [https://erc.undp.org/evaluation/documents/download/10770]. Accessed 26 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 26 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 26 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[12] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 26 September 2020.

3.1.1b

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

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

Current Year Score: 0

There is no evidence that Cameroon has a national overarching public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential and therefore it has not been updated in the last 3 years. Some disease-specific response plans exist, such as a detailed emergency response plan specific to the 2018

cholera outbreak which has been published within the past 3 years. [1] According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011), which is a disaster risk reduction plan; sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. There is no multi-risk plan for response to public health emergencies, though at the time of writing the report, preparatory work had been done to map out risks and resources. [2] The 'National contingency plan' addresses human and animal disease outbreaks. It does not provide health emergency response plans, but calls for these to be developed. [3] No evidence was found of an updated National Continguency Plan and the disease-specific contingency plans are not publicly available, nor is there evidence of a new general public health emergency response plan, from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [4,5,6,7] As of 2017, the ORSEC plan only covered two municipalities and no evidence was found to show that updates have been made since. [8] The ORSEC plan is also not publicly available, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10] No further evidence was found on the Ministry of Health website. [11] A National Preparation and Response Strategic Plan was also developed in February 2020, in response to the COVID-19 pandemic and does not address planning for multiple communicable diseases. [12]

[1] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 26 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[3] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 26 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 26 September 2020.
[6] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 26 September 2020.
[7] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 26 September 2020.
[8] United National Development Program (UNDP). August 2017. "Assessment of Development Results. Evaluation of UNDP Contribution. Cameroon". [https://erc.undp.org/evaluation/documents/download/10770]. Accessed 26 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 26 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 26 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[12] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 26 September 2020.

3.1.1c

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

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

Current Year Score: 0

There is no evidence that Cameroon has a national overarching public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential and therefore there are no considerations for pediatric and/or other vulnerable populations in the plan. Some disease-specific response plans exist, such as a detailed emergency response plan specific to the 2018 cholera outbreak, however It does not consider the needs of children, but does call for vaccinations for vulnerable people in refugee camps. [1] According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011), which is a disaster risk reduction plan; sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. There is no multi-risk plan for response to public health emergencies, though at the time of writing the report, preparatory work had been done to map out risks and resources. [2] The 'National contingency plan' addresses human and animal disease outbreaks. It does not provide health emergency response plans, but calls for these to be developed. [3] No evidence was found of an updated National Continguency Plan and the disease-specific contingency plans are not publicly available, nor is there evidence of a new general public health emergency response plan, from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [4,5,6,7] As of 2017, the ORSEC plan only covered two municipalities and no evidence was found to show that updates have been made since. [8] The ORSEC plan is also not publicly available, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10] No further evidence was found on the Ministry of Health website. [11] A National Preparation and Response Strategic Plan was also developed in February 2020, in response to the COVID-19 pandemic and does not address planning for multiple communicable diseases nor does it address pediatric and/or other vulnerable populations. [12]

[1] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 27 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 26 September 2020.
[3] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 26 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 26 September 2020.
[6] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 26 September 2020.
[7] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 26 September 2020.
[8] United National Development Program (UNDP). August 2017. "Assessment of Development Results. Evaluation of UNDP Contribution. Cameroon". [https://erc.undp.org/evaluation/documents/download/10770]. Accessed 26 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 26 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 26 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 26 September 2020.

[12] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 26 September 2020.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Cameroon has a mechanism for engaging with the private sector to assist with outbreak emergency preparedness and response. According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. [1] The 'National contingency plan' does not mention a mechanism for engaging with the private sector on outbreak preparedness and response. [2] The disease-specific contingency plans are not publicly available from the health ministry, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [3,4,5,6] However, a detailed emergency response plan has been published for the 2018 cholera epidemic, based on the national contingency plan for cholera. It does not mention a mechanism for engaging with the private sector on emergency preparedness and response, though it assigns some funds for holding consultation and advocacy meetings with the private sector and civil society, and mentions the existence of a liaison office under the health ministry which is responsible for liaising with the private and public sectors. [7] The ORSEC plan is not publicly available, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [8,9] A National Preparation and Response Strategic Plan was also developed in February 2020, in response to the COVID-19 pandemic but it does not provide mechanisms for engaging with the private sector. [10]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 27 September 2020.
[2] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 27 September 2020.

[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[4] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 27 September 2020.
[5] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 27 September 2020.
[6] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 27 September 2020.
[7] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 27 September 2020.
[8] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access 27 September 2020.
[9] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access 27 September 2020.
[10] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 27 September 2020.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 0

There is no evidence that Cameroon has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic for one or more diseases.

A National Preparation and Response Strategic Plan was developed in February 2020 in response to the COVID-19 pandemic, however there is no mention of NPIs. [1]

According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. [2] The 'National contingency plan' does not mention a mechanism for NPIs. [3]The disease-specific contingency plans are not publicly available from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [4,5,6,7]

A detailed emergency response plan was published for the 2018 cholera epidemic, based on the national contingency plan for cholera, however it does not mention NPIs. [8] The ORSEC plan is not publicly available, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10]

[1] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 27 September 2020.
[2] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 27 September 2020.
[3] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 27 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 27 September 2020.
[6] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 27 September 2020.
[7] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 27 September 2020.
[8] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 27 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access 27 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access 27 September 2020.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

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

Current Year Score: 1

There is no evidence that Cameroon has activated a national emergency response plan for an infectious disease outbreak, since there does not seem to be a specific emergecny response plan. There is evidence, though, that Cameroon has developed a plan to address COVID-19 and then activated it. There is also evidence that Cameroon has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year.

According to the World Health Organization (WHO) Simulation Exercise webpage, Cameroon participated in a simulation exercise that was conducted in October 2019 on "Multisectoral collaboration for zoonotic diseases". [1]

Cameroon's first case of COVID-19 was confirmed on March 5, 2020. It was on 17 March that the authorities put the country on maximum alert and activated the National Contingency Plan of 2011, which is a disaster risk reduction plan and addresses human and animal disease outbreaks, it does not provide health emergency response plans. "Since 18 March, the Government has taken important measures to control the oubreak: closure of Cameroon's land, air, and sea borders, school closures, closure of restaurants, bars and entertainment spots after 6pm. On 13 April, these measures were reinforced by new ones including the compulsory wearing of masks in public spaces, the adoption of locally manufactured chloroguine treatment, and the opening of specialized testing centers in all the regions". [2,3] As of May 2020, Cameroon's government had not declared a formal state of emergency, since it had "chosen to base the fight against COVID-19 on its existing legal framework. The fight against COVID-19 is a public health issue which, according to Cameroonian law, is a component of public order. The protection of public order is the responsibility of executive authorities, which have the power to adopt any executive orders for its preservation. As of now, all the measures taken in the context of the fight against COVID-19 are administrative measures". [4] In February 2020, Cameroon developed a National Preparation and Response Strategic Plan in response to the COVID-19 pandemic. And the Public Health Emergency Operations Center (PHEOC) was activated in March 2020. [5,6]

According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. There is no multi-risk plan for response to public health emergencies, though at the time of writing the report, preparatory work had been done to map out risks and resources. [7] No evidence was found of an updated National Continguency Plan and the disease-specific contingency plans are not publicly available, nor is there evidence of a new general public health emergency response plan, from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [8,9,10,11] As of 2017, the ORSEC plan only covered two municipalities and no evidence was found to show that updates have been made since. [12] The ORSEC is also not publically available.

[1] World Health Organisation (WHO). "Health Security Calendar - 2019". [https://extranet.who.int/sph/calendar/2019?1&type=All&field_region_tid=All&country_tid=216]. Accessed 10 November 2020.
[2] ReliefWeb. May 2020. "OCHA Cameroon: COVID 19 Emergency Situation Report No. 01 - As of 18 May 2020". [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-no-01-18-may-2020]. Accessed 28 September 2020.
[3] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[4] Verfassungsblog on Matters Constitutional. May 2020. "Cameroon's Fight Against COVID-19: An Ordinary Legal Framework for an Extraordinary Situation". [https://verfassungsblog.de/cameroons-fight-against-covid-19-an-ordinary-legal-framework-for-an-extraordinary-situation/]. Accessed 28 September 2020.
[5] Republic of Cameroon. February 2020. "Preparation and Response Plan for COVID-19 in Cameroon". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[6] ReliefWeb. July 2020. "Cameroon: COVID-19 Emergency Situation Report No. 05 - As of 30 July 2020. [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-]no-05-30-july-2020]. Accessed 28 September 2020.
[7] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[8] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

[9] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[10] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[11] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[12] United National Development Program (UNDP). August 2017. "Assessment of Development Results. Evaluation of UNDP Contribution. Cameroon". [https://erc.undp.org/evaluation/documents/download/10770]. Accessed 28 September 2020.

3.2.1b

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

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

Current Year Score: 0

There is no evidence that Cameroon has in the past year identified a list of gaps and best practices in response (either through an infectious disease response of a biological-threat focused exercise) and developed a plan to improve response capabilities. The World Health Organization (WHO) after action review webpage does not list any planned or completed reviews in Cameroon. [1] There is evidence from the WHO and US Centers for Disease Control and Prevention (CDC) that Cameroon has conducted simulations of emergency responses, but not that action reviews were conducted in response. [2,3] There is no evidence of after-action reviews or biological threat-focused exercises from the Ministry of Health, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [4,5,6]

[1] World Health Organisation. "After action review." [https://extranet.who.int/sph/after-action-review]. Accessed 27 September 2020.
[2] World Health Organisation. "Cameroon: Health security status." [https://extranet.who.int/sph/country/216]. Accessed 27 September 2020.
[3] US Centers for Disease Control and Prevention (CDC). 19 Oct 2017. "First-of-its-kind exercise tests Cameroon's ability to detect, respond and stop cholera 'outbreak'." [https://www.cdc.gov/globalhealth/security/stories/first-of-its-kind_exercise_tests.html]. Accessed 27 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[5] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 27 September 2020.
[6] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 27 September 2020

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has in the past year undergone a national-level biological threat-focused exercise that has included private sector representatives. The World Health Organization (WHO) Simulation Exercise webpage reports that a simulation exercise was conducted in October 2019 on "Multisectoral collaboration for zoonotic diseases", however there is no indication that this included private sector representatives. [1] No further evidence of engaging private sector representatives was available on the website of the US Centers for Disease Control and Prevention (CDC), despite there being a simulation exercise in response to Cholera conducted in 2017. [2] There is no evidence of biological threat-focused exercises from the Ministry of Health, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [3,4,5]

[1] World Health Organisation (WHO). "Health Security Calendar - 2019". [https://extranet.who.int/sph/calendar/2019?1&type=All&field_region_tid=All&country_tid=216]. Accessed 10 November 2020.
[2] US Centers for Disease Control and Prevention (CDC). 19 Oct 2017. "First-of-its-kind exercise tests Cameroon's ability to detect, respond and stop cholera 'outbreak'." [https://www.cdc.gov/globalhealth/security/stories/first-of-its-kind_exercise_tests.html]. Accessed 27 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[4] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 27 September 2020.
[5] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 27 September 2020

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

Does the country have in place an Emergency Operations Center (EOC)?
Yes = 1 , No = 0

Current Year Score: 1

There is sufficient evidence that Cameroon has an Emergency Operations Center. According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country has a functioning Public Health Emergency Operations Centre (PHEOC). [1] At the time of writing the JEE in 2017, the PHEOC had yet to pass the regulation formally creating it and establishing its structure and functions. In December 2018, however, the PHEOC was formally put into place to strengthen emergency management capacity and help improve health security. [2] The country also has regional public health alert cells. The JEE recommends providing resources to enable the PHEOC to operate 24 hours a day, 7 days a week, and developing a strategic plan for it. [1] No further information about the PHEOC is available from the Ministry of Health and the websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection, responsible for general emergency response, were not working at time of research. [3,4,5]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 25 September 2020.

[2] United States Embassy of Cameroon. December 2018. "Ambassador's Remarks for the Ribbon Cutting Ceremony for the Cameroon Public Health Emergency Operations Center (PHEOC)". [https://cm.usembassy.gov/ambassadors-remarks-pheoc-ribbon-cutting-ceremony/]. Accessed 25 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 25 September 2020.
[4] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 25 September 2020.
[5] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 25 September 2020.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon's Public Health Emergency Operations Centre (PHEOC) is required to conduct a drill at least once a year and no evidence was found that an annual health-focused drill was conducted in the last year.

According to the 2017 Joint External Evaluation (JEE) of Cameroon, the country has a functioning Public Health Emergency Operations Centre (PHEOC). [1] At the time of writing the JEE in 2017, the PHEOC had yet to pass the regulation formally creating it and establishing its structure and functions. In December 2018, however, the PHEOC was formally put into place to strengthen emergency management capacity and help improve health security. [2]

The JEE report does not mention a requirement or schedule for drills, though states that some have been conducted. [1] The PHEOC conducted outbreak response drills in September 2017 and 2018 with the assistance of international partners, but there is no evidence that these drills have been continued on an annual basis since 2018. The reports on these do not mention a requirement for regular drills. [3,4] No further or more updated evidence is available to suggest that it requires conducting a drill at least once a year as the PHEOC does not have an online presence. And no further evidence was found of drills conducted in the last year. No further information about the PHEOC is available from the Ministry of Health and the websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection, responsible for general emergency response, were not working at time of research. [5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 27 September 2020.
[2] United States Embassy of Cameroon. December 2018. "Ambassador's Remarks for the Ribbon Cutting Ceremony for the Cameroon Public Health Emergency Operations Center (PHEOC)". [https://cm.usembassy.gov/ambassadors-remarks-pheoc-ribbon-cutting-ceremony/]. Accessed 27 September 2020.
[3] US Centers for Disease Control and Prevention (CDC). 19 Oct 2017. "First-of-its-kind exercise tests Cameroon's ability to detect, respond and stop cholera 'outbreak'." [https://www.cdc.gov/globalhealth/security/stories/first-of-its-kind_exercise_tests.html]. Accessed 27 September 2020.
[4] Ministry of Public Health. 20 Sep 2018. "Opening ceremony of 2nd international forum on management of public health events and closure of simulation exercise of a major epidemic crisis (Cérémonie d'ouverture du 2ème forum international sur la gestion des évènements de santé publique et la clôture de l'exercice de simulation d'une crise épidémique majeure)". [http://www.minsante.cm/site/?q=fr/content/c%C3%A9r%C3%A9monie-d%E2%80%99ouverture-du-2%C3%A8me-forum-international-sur-la-gestion-des-%C3%A9v%C3%A8nements-de-sant%C3%A9]. Accessed 27 September 2020.

[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 27 September 2020.
[6] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 27 September 2020.
[7] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 27 September 2020.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon's Emergency Operations Center (EOC) has conducted within the last year a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario. Cameroon's first case of COVID-19 was confirmed on March 5, 2020. It was on 17 March that the authorities put the country on maximum alert and activated a contingency plan. "Since 18 March, the Government has taken important measures to control the oubreak: closure of Cameroon's land, air, and sea borders, school closures, closure of restaurants, bars and entertainment spots after 6pm. On 13 April, these measures were reinforced by new ones including the compulsory wearing of masks in public spaces, the adoption of locally manufactured chloroguine treatment, and the opening of specialized testing centers in all the regions". [1] There is no evidence that these measures were initially activated within 120 minutes of identifying the public health emergency/scenario. The World Health Organization (WHO) does not report a disease outbreak in the past year. [2] The response time of the PHEOC has previously been a point of concern. The 2017 Joint External Evaluation (JEE) reported that the EOC did not have the capacity to activate rapidly. As part of formalizing the PHEOC in 2018 and improving its capacity, with support from the Centers for Disease Control and Prevention (CDC), the government of Cameroon set up a framework with tools and mechanisms intended to "detect disease outbreaks at the earliest possible moment in order to respond effectively". [3,4,5] No further information about the PHEOC or response times is available from the Ministry of Health. [6]

[1] ReliefWeb. May 2020. "OCHA Cameroon: COVID 19 Emergency Situation Report No. 01 - As of 18 May 2020". [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-no-01-18-may-2020]. Accessed 28 September 2020.
[2] World Health Organization. "Emergencies preparedness, response". [https://www.who.int/csr/don/archive/country/cmr/en/]. Accessed 28 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[4] Editorials. September 2017. "Cameroon and U.S. Partners in Preparedness". [https://editorials.voa.gov/a/cameroon-us-partners-preparedness/4031133.html#:~:text=Cameroon%20health%20officials%20are%20using%20new%20and%20upgraded,exercise%20began%20September%207th%20and%20ended%20September%2015th.]. Accessed 28 September 2020.
[5] United States Embassy of Cameroon. September 2017. "U.S.-Cameroon Demonstrate Preparedness in Public Health Emergency Management". [https://cm.usembassy.gov/u-s-cameroon-demonstrate-preparedness-public-health-emergency-management/]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?
- Is there public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
- Are there publicly available standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack)?

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

Current Year Score: 0

There is no evidence that Cameroon has carried out an exercise to respond to a deliberate biological event, nor is there conclusive evidence that guidelines or agreements exist on how to coordinate the public health and security authorities when responding to such an event. There is no evidence of an exercise to respond to a biological attack from the Ministry of Health's website or from a wider online search for World Health Organisation (WHO) reports or media articles, and the websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection (DCP), responsible for general emergency response, were not working at time of research. [1,2,3] According to the 2017 Joint External Evaluation of Cameroon, the country has not drafted a memorandum of understanding on coordination between security and health authorities when responding to a biological event but, based on elements in the 2011 'National contingency plan' and regulations in force, the Directorate of Civil Protection at MINATD ensures multisectoral coordination in case of events involving multiple sectors. [4] The 'National contingency plan' does not contain clear guidelines on coordination of a response involving the security and health authorities, and does not mention biological attacks. [5]

[1] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[2] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[3] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.
[4] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[5] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Cameroon has a strategy outlining how messages on public health emergency response will reach populations and sectors with different communications needs. According to the 2017 Joint External Evaluation of Cameroon, the health ministry operates an effective communication system involving national and local media, SMS messages, opinion leaders and local languages. However, there is no public plan available which outlines this system. The report also states that planning for public health emergencies is covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. [1] The 'National contingency plan' does not provide a communication strategy for use in a public health emergency. [2] The disease-specific contingency plans are not publicly available, nor is there evidence that a general public health emergency response plan has been published since 2017, from the Ministry of Health, or from relevant international organisations. [3,4,5,6] However, a detailed emergency response plan has been published for the 2018 cholera epidemic, based on the national contingency plan for cholera. With regard to communication, it states that educational tools and a media plan on preventing and combating cholera exist, and cites non-government organisations, places of worship and public and private media as communication resources. Besides listing these capabilities, it does not contain a communication strategy for use during an outbreak. [7] The media plan mentioned in the cholera plan is not available online from the Ministry of Health nor is any other communication strategy document. [3] The ORSEC plan is not publicly available. The Preparedness and Response Plan developed in February 2020 in response to the COVID-19 pandemic, also states that Cameroon does not have a risk communication plan. The budget shows there is a line dedicated to the development of a communication plan, but there are no further details in the rest of the response plan to explain what the contents might be. [8] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[5] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[6] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[7] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[8] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.

[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Cameroon has a risk communication plan specifically intended for use during a public health emergency. According to the 2017 Joint External Evaluation of Cameroon, there is no national multisectoral plan on risk communication, and there are no standard procedures for risk communication. It scores the country's risk communication system a "1", stating that has no capacity. According to the report, planning for public health emergencies is covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. [1] The 'National contingency plan' does not provide a risk communication plan for use in a public health emergency. [2] The disease-specific contingency plans are not publicly available, nor is there evidence that a general public health emergency response plan has been published since 2017, from the Ministry of Health, or from relevant international organisations. [3,4,5,6] However, a detailed emergency response plan has been published for the 2018 cholera epidemic, based on the national contingency plan for cholera. With regard to communication, it states that educational tools and a media plan on preventing and combatting cholera exist, and cites non-government organisations, places of worship and public and private media as communication resources. Besides listing these capabilities, it does not contain a risk communication plan for use during an outbreak. [7] The media plan mentioned in the cholera plan is not available online from the Ministry of Health. [3] The ORSEC plan is not publicly available. The Preparedness and Response Plan developed in February 2020 in response to the COVID-19 pandemic, also states that Cameroon does not have a risk communication plan. The budget shows there is a line dedicated to the development of a communication plan, but there are no further details in the rest of the response plan to explain what the contents might be. [8] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites.[9,10]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[5] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[6] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[7] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018".

[https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[8] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[9] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there exists a risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) therefore there is not a designated position within the government to serve as the primary spokesperson to the public during a public health emergency. The Preparedness and Response Plan developed in February 2020 in response to the COVID-19 pandemic, states that Cameroon does not have a risk communication plan. The budget shows there is a line dedicated to the development of a communication plan, but there are no further details in the rest of the response plan to explain what the contents might be. The plan does state that the Directorate of Health Promotion is the dedicated structure for the communication on risks to the Ministry of Public Health, but it is unclear whether this is also the structure responsible for communication to the Cameroonian public. [1] On the Ministry of Health's COVID-19-specific webpage, daily recorded video briefings are available. The spokesperson for the briefings rotates between several people and nowhere is it indicated that any of these staff are the official spokespeople to share COVID-19 updates. [2] According to the 2017 Joint External Evaluation of Cameroon, there is no national multisectoral plan on risk communication, and there are no standard procedures for risk communication. It scores the country's risk communication system a "1", stating that has no capacity. The report makes no mention of a designated position to serve as a spokesperson. The report also states that public health emergencies are covered in the general 'National contingency plan' (2011); sectoral contingency plans for diseases such as Ebola, polio and cholera; and a general "ORSEC" ("Organisation de secourisme" - Rescue organisation) plan. [3] The 'National contingency plan' does not provide a risk communication plan for use in a public health emergency. [4] The disease-specific contingency plans and ORSEC are not publicly available, nor is there evidence that a general public health emergency response plan, or a risk communication plan with an identified dedicated spokesperson, has been published since 2017, from the Ministry of Health, World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [5,6,7,8] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [9,10]

[1] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[2] Ministry of Publich Health. "COVID-19 Briefings". [http://covid19.minsante.cm/actualites/]. Accessed 28 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-

fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[4] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[6] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[7] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[8] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 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

In the past year, there is evidence that Cameroon's public health system has actively shared messages via online media platforms (eg social media, website) to inform the public about ongoing public health concerns and/or dispel rumors, misinformation or disinformation, however messages via these platforms are not frequent or daily. According to the 2017 Joint External Evaluation of Cameroon, the government uses national and local media platforms to disseminate information about public health emergencies. [1] The Ministry of Health has a noticeboard on the home page of its website, on which it publishes updates on epidemics, such as the 2018 cholera outbreak. [2] More recently it contains a pop-up window on COVID-19 statistics upon entering the site, accessible here: http://covid19.minsante.cm/. The automatic window provides daily updates on the numbers of confirmed cases of COVID-19, as well as deaths, cured and active cases. The pop-up also provides the Ministry of Health's COVID-19 strategy's 4 objectives, phone numbers in case someone believes they have contracted the virus, measures to take to minimize the risk of getting COVID-19, as well as a list of questions and answers for people to be better informed. [3] When entering the Ministry of Health's website, there is also a link that directs you to another COVID-19 page with the same information provided in the pop-up. It also contains recorded daily briefings given by representatives of the Ministry of Health. [4] In terms of social media outlets, it posts updates on outbreaks on its Facebook page but these are not frequent. The last COVID-19 post was in April 2020. [5] And a Twitter profile exists but there has not been a new post since 2016. [6]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

[3] Ministry of Public Health. "COVID-19". [http://covid19.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Publich Health. "COVID-19 Briefings". [http://covid19.minsante.cm/actualites/]. Accessed 28 September 2020.
[5] Ministry of Public Health. Official Facebook page. See for example post from 18 July 2018. [https://www.facebook.com/pg/MINSANTE.PageOfficielle/posts/?ref=page_internal]. Accessed 28 September 2020.
[6] Ministry of Public Health. Official Twitter page. [https://twitter.com/minsantec?lang=en]. Accessed 28 September 2020.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no evidence that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases (in the past two years). Most recently, and with regards to the COVID-19 pandemic, Cameroon has struggled with the spread of misinformation and fake news about hospitals being overwhelmed or that testing is either not available or expensive. There is no evidence, however, that these rumors were spread by a senior leader. In response, health workers have attempted to counteract the rumors by channeling real information on twitter. Smart Click Africa and COVID19.cm are both sites that were developed in response and intend on encouraging Cameroonians to be vigilant with the sources they use to acquire information. [1,2,3] Cameroon has a law that states that it is illegal to report "any news without being able to prove either its truth or that there was good reason to believe it to be true". In line with the law, in 2018, Cameroon put four journalists in jail for false news. [4,5] At this time, the country also requested help from Facebook to attempt to manage fake news in preparation for the elections that were to occur in October 2018. [6] No further evidence was found of a senior leader sharing misinformation or disinformation.

[1] VOANEWS. June 2020. "In Cameroon, Social Media Used to Fight Misinformation". [https://www.voanews.com/covid-19-pandemic/cameroon-social-media-used-fight-misinformation]. Accessed 28 September 2020.
[2] Smart Click Africa. [https://smartclickafrica.org/projets/]. Accessed 28 September 2020.
[3] COVID.19. "Coronavirus au Cameroun". [https://www.covid19.cm/]. Accessed 28 September 2020.
[4] Poynter. "A guide to anit-misinformation actions around the world". [https://www.poynter.org/ifcn/anti-misinformation-actions/]. Accessed 28 September 2020.
[5] WashingtonPost. December 2018. "In Cameroon, journalists are being jailed on charges of 'fake news'". [https://www.washingtonpost.com/world/africa/in-cameroon-journalists-are-being-jailed-on-charges-of-fake-news/2018/12/15/80bcb5c6-f9ad-11e8-8642-c9718a256cbd_story.html]. Accessed 28 September 2020.
[6] QuartzAfrica. September 2018. "Cameroon has been asking Facebook for help with fake news ahead of a contentious election". [https://qz.com/africa/1390219/cameroon-asks-facebook-to-help-beat-fake-news-as-election-looms/]. Accessed 28 September 2020.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 23.2

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: 81.76

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: 6.0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 5.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that Cameroon has issued restriction in the past year, without international/bilateral support, on the export/import of medical goods (eg: medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak. Cameroon's first case of COVID-19 was confirmed on March 5, 2020, and by March 18, the government had closed land, air, and sea borders, as well as closed schools, restaurants, bars, and entertainment spots after 6pm. The measures were reinforced on April 13, and included "the compulsory wearing of masks in public spaces, the adoption of locally manufactured chloroguine treatment, and the opening of specialized testing centers in all the regions". [1,2] No evidence of restrictions on the export/import of medical goods was found, however. No other evidence of restrictions was found on the Ministry of Public Health's website or Facebook page, or from the Ministry of Livestock website or the customs agency. [3,4,5,6] The last outbreak reported to the World Health Organization was in 2018 and no restrictions on medical goods were reported as a result. [7]

[1] ReliefWeb. May 2020. "OCHA Cameroon: COVID 19 Emergency Situation Report No. 01 - As of 18 May 2020". [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-no-01-18-may-2020]. Accessed 28 September 2020.
[2] Aljazeera. June 2020. "Coronavirus: Travel restrictions, border shutdowns by country". [https://www.aljazeera.com/news/2020/06/03/coronavirus-travel-restrictions-border-shutdowns-by-country/]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Public Health. Official Facebook page. [https://www.facebook.com/pg/MINSANTE.PageOfficielle/posts/?ref=page_internal]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Cameroon Customs. [http://www.douanes.cm/douane/index.php/fr/]. Accessed 28 September 2020.
[7] World Health Organisation (WHO). 14 Jun 2018. "Cholera - Cameroon." [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 28 September 2020.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that Cameroon 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. Cameroon's first case of COVID-19 was confirmed on March 5, 2020, and by March 18, the government had closed land, air, and sea borders, as well as closed schools, restaurants, bars, and entertainment spots after 6pm. The measures were reinforced on April 13, and included "the

compulsory wearing of masks in public spaces, the adoption of locally manufactured chloroguine treatment, and the opening of specialized testing centers in all the regions". [1,2] No evidence of restrictions on the export/import of non-medical goods was found, however. No other evidence of restrictions was found on the Ministry of Public Health's website or Facebook page, or from the Ministry of Livestock website or the customs agency. [3,4,5,6] The last outbreak reported to the World Health Organization was in 2018 and no restrictions on non-medical goods were reported as a result. [7]

[1] ReliefWeb. May 2020. "OCHA Cameroon: COVID 19 Emergency Situation Report No. 01 - As of 18 May 2020". [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-no-01-18-may-2020]. Accessed 28 September 2020.
[2] Aljazeera. June 2020. "Coronavirus: Travel restrictions, border shutdowns by country". [https://www.aljazeera.com/news/2020/06/03/coronavirus-travel-restrictions-border-shutdowns-by-country/]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Public Health. Official Facebook page. [https://www.facebook.com/pg/MINSANTE.PageOfficielle/posts/?ref=page_internal]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Cameroon Customs. [http://www.douanes.cm/douane/index.php/fr/]. Accessed 28 September 2020.
[7] World Health Organisation (WHO). 14 Jun 2018. "Cholera - Cameroon." [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 28 September 2020.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0 , No = 1

Current Year Score: 0

There is evidence that Cameroon has implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak in the past year. Cameroon's first case of COVID-19 was confirmed on March 5, 2020, and by March 18, the government had closed land, air, and sea borders, restricting all incoming or outgoing travelers, except for cargo planes. [1,2] No other evidence of restrictions was found on the Ministry of Public Health's website or Facebook page, or from the Ministry of Livestock website or the customs agency. [3,4,5,6] The last outbreak reported to the World Health Organization was in 2018 and no travel restrictions were reported as a result. [7]

[1] ReliefWeb. May 2020. "OCHA Cameroon: COVID 19 Emergency Situation Report No. 01 - As of 18 May 2020". [https://reliefweb.int/report/cameroon/cameroon-covid-19-emergency-situation-report-no-01-18-may-2020]. Accessed 28 September 2020.
[2] Aljazeera. June 2020. "Coronavirus: Travel restrictions, border shutdowns by country". [https://www.aljazeera.com/news/2020/06/03/coronavirus-travel-restrictions-border-shutdowns-by-country/]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Public Health. Official Facebook page. [https://www.facebook.com/pg/MINSANTE.PageOfficielle/posts/?ref=page_internal]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Cameroon Customs. [http://www.douanes.cm/douane/index.php/fr/]. Accessed 28 September 2020.

[7] World Health Organisation (WHO). 14 Jun 2018. "Cholera - Cameroon." [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 28 September 2020.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 8.81

2011

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 91.64

2011

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 evidence that Cameroon has a health workforce strategy in place (which has been updated in the past five years) to identify fields where there is an insufficient workforce and strategies to address these shortcomings. Although Cameroon has a public health workforce strategy in place, no evidence was found that it has been updated since 2012. Cameroon has a national human resources for health (HRH) development strategy for 2013-2017, published in 2012. [1,2,3,4] It addresses

aspects such as human resources management, recruitment, training and monitoring, and draws on a 2011 survey of the health workforce. [2,4] The Ministry of Health runs a 'National Observatory of Human Resources for Health'. Its website has a repository of documents related to workforce assessment and planning. It does not contain a more recent workforce strategy, nor is there evidence of a more recent strategy from the World Health Organisation (WHO) national health planning cycle repository for Cameroon, or from the Ministry of Health's main website. [4,5,6]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. 2012. "Human resources development plan for the health system of Cameroon 2013-2017 (Plan de développement des ressources humaines du système de santé du Cameroun 2013-2017)". [https://extranet.who.int/countryplanningcycles/sites/default/files/planning_cycle_repository/cameroon/plan_strategique_de_developpement_des_ressources_humaines_en_sante.pdf]. Accessed 28 September 2020.
[3] WHO. "Cameroon". [https://extranet.who.int/countryplanningcycles/file-repository/CMR]. Accessed 28 September 2020.
[4] Ministry of Public Health/National Observatory of Human Resources for Health. "Documents (Documentation)". [http://www.cm-minsante-drh.com/site/index.php/en/home-4]. Accessed 28 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 130

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: 1

There is evidence that Cameroon has the capacity to isolate patients with highly communicable diseases in a patient isolation facility within the country, however during the most recent COVID-19 pandemic, sources show that in some regions there has been a lack of capacity and resources to isolate: "There are only three ventilators in the whole [Northwest] region and nearly no isolation-designated spaces in hospitals". [1] The Preparedness and Response Plan for COVID-19, reports that capacity for isolation is sufficient in Yaounde and Daoula, however in some areas equipment in the isolation rooms and in the waiting rooms are insufficient. The plan has budget lines to improve isolation capacity: 1/ Layout and equipment for isolation rooms in reference hospitals; 2/ Construction and equipment of an isolation care center for COVID 19 cases in the Littoral region; 3/

Layout and equipment for 7 isolation rooms in airports (Dla, Ydé, Maroua, Garoua) and ports (Kribi, Limbe, Dla). [2] During the 2014 Ebola outbreak in Africa, the World Health Organisation (WHO) reported on preparations in Cameroon. It noted the existence of the Mimetala Centre for Isolation and Treatment of Ebola, located between the capital, Yaoundé, and the international airport. This facility has defined clean and contaminated areas, a circuit for PPE dressing and undressing, and areas to deal with waste. In 2014 it was in the final stages of preparation, and a second centre in Douala was being planned. [3,4] Local media reported in late 2014 that the Mimetala centre had just been constructed, and was managed by Yaoundé Central Hospital, while the Douala centre was at Laquintinie Hospital. [5,6] There is no current information on the preparedness of either of these facilities from the websites of Yaoundé Central Hospital, Laquintinie Hospital, the health ministry or a wider online search. [7,8,9] In 2018, the national response plan for the cholera epidemic states that emergency isolation rooms suitable for cholera were available at Yaoundé Central Hospital, Yaoundé District Hospital and Northern District Hospital. [10]

[1] Human Rights Watch. April 2020. [https://www.hrw.org/news/2020/04/10/cameroon-allow-aid-access-amid-pandemic#]. Accessed 28 September 2020.
[2] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[3] World Health Organisation (WHO). N.d. "Ebola prevention: Cameroon reinforces its preparation with support from an international United Nations mission (Prévention de la maladie a virus Ebola : le Cameroun renforce sa préparation avec l'appui d'une mission internationale des nations unies)". [https://afro.who.int/fr/news/prevention-de-la-maladie-virus-ebola-le-cameroun-renforce-sa-preparation-avec-lappui-dune]. Accessed 28 September 2020.
[4] World Health Organisation (WHO). 2014. "Ebola virus disease preparedness strengthening team: Cameroon country visit 10-14 November 2014." [http://apps.who.int/iris/bitstream/handle/10665/145678/WHO_EVD_PCV_Cameroon_14_eng.pdf;jsessionid=B600C6F6E46CE80FBEC91CBF6A563488?sequence=1]. Accessed 28 September 2020.
[5] Mosima, E. 14 Nov 2014 "Cameroon: Yaounde Ebola isolation centre ready." [https://allafrica.com/stories/201411141140.html]. Accessed 28 September 2020.
[6] Journal du Cameroun. 14 Nov 2014. "An Ebola quarantine and treatment centre in Yaoundé (Un centre de mise en quarantaine et de traitement du virus Ebola à Yaoundé)". [https://www.journalducameroun.com/un-centre-de-mise-en-quarantaine-et-de-traitement-du-virus-ebola-a-yaounde/]. Accessed 28 September 2020.
[7] Yaoundé Central Hospital. 2018. "Services." [https://hopitalcentral.cm/index.php?option=com_content&view=article&id=62&Itemid=54]. Accessed 28 September 2020.
[8] Laquintinie Hospital. [https://www.hopitalaquintinie.cm/index-en.html]. Accessed 28 December 2018.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[10] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.

4.1.2c

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

Current Year Score: 1

There is evidence that Cameroon has demonstrated capacity to expand isolation capacity in some regions, and has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years.

During the most recent COVID-19 pandemic, sources show that in some regions there has been a lack of capacity and resources to isolate: "There are only three ventilators in the whole [Northwest] region and nearly no isolation-designated spaces in hospitals". [1]

The Preparedness and Response Plan for COVID-19, reports that capacity for isolation is sufficient in Yaounde and Daoula, however in some areas equipment in the isolation rooms and in the waiting rooms are insufficient. The plan has budget lines to improve isolation capacity: 1/ Layout and equipment for isolation rooms in reference hospitals; 2/ Construction and equipment of an isolation care center for COVID 19 cases in the Littoral region; 3/ Layout and equipment for 7 isolation rooms in airports (Dla, Ydé, Maroua, Garoua) and ports (Kribi, Limbe, Dla). [2]

During the 2014 Ebola outbreak in Africa, the World Health Organisation (WHO) reported on preparations in Cameroon. It noted the existence of the Mimetala Centre for Isolation and Treatment of Ebola, located between the capital, Yaoundé, and the international airport. This facility has defined clean and contaminated areas, a circuit for PPE dressing and undressing, and areas to deal with waste. In 2014 it was in the final stages of preparation, and a second centre in Douala was being planned. [3,4] Local media reported in late 2014 that the Mimetala centre had just been constructed, and was managed by Yaoundé Central Hospital, while the Douala centre was at Laquintinie Hospital. [5,6] There is no current information on the preparedness of either of these facilities from the websites of Yaoundé Central Hospital, Laquintinie Hospital, the health ministry or a wider online search. [7,8,9] In 2018, the national response plan for the cholera epidemic states that emergency isolation rooms suitable for cholera were available at Yaoundé Central Hospital, Yaoundé District Hospital and Northern District Hospital. [10]

[1] Human Rights Watch. April 2020. [https://www.hrw.org/news/2020/04/10/cameroon-allow-aid-access-amid-pandemic#]. Accessed 28 September 2020.
[2] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[3] World Health Organisation (WHO). N.d. "Ebola prevention: Cameroon reinforces its preparation with support from an international United Nations mission (Prévention de la maladie a virus Ebola : le Cameroun renforce sa préparation avec l'appui d'une mission internationale des nations unies)". [https://afro.who.int/fr/news/prevention-de-la-maladie-virus-ebola-le-cameroun-renforce-sa-preparation-avec-lappui-dune]. Accessed 28 September 2020.
[4] World Health Organisation (WHO). 2014. "Ebola virus disease preparedness strengthening team: Cameroon country visit 10-14 November 2014."
[http://apps.who.int/iris/bitstream/handle/10665/145678/WHO_EVD_PCV_Cameroon_14_eng.pdf;jsessionid=B600C6F6E46CE80FBEC91CBF6A563488?sequence=1]. Accessed 28 September 2020.
[5] Mosima, E. 14 Nov 2014 "Cameroon: Yaounde Ebola isolation centre ready."
[https://allafrica.com/stories/201411141140.html]. Accessed 28 September 2020.
[6] Journal du Cameroun. 14 Nov 2014. "An Ebola quarantine and treatment centre in Yaoundé (Un centre de mise en quarantaine et de traitement du virus Ebola à Yaoundé)". [https://www.journalducameroun.com/un-centre-de-mise-en-quarantaine-et-de-traitement-du-virus-ebola-a-yaounde/]. Accessed 28 September 2020.
[7] Yaoundé Central Hospital. 2018. "Services."
[https://hopitalcentral.cm/index.php?option=com_content&view=article&id=62&Itemid=54]. Accessed 28 September 2020.

[8] Laquintinie Hospital. [https://www.hopitalaquintinie.cm/index-en.html]. Accessed 28 December 2018.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[10] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018".
[https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is no evidence to show that Cameroon has 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.

The 2017 Joint External Evaluation of Cameroon states that there is a central procurement system for the acquisition of laboratory needs, but does not specify which laboratories (public and/or animal health) it covers. It cites a 'National strategic plan for the development of laboratories in Cameroon (2016-2020)', but this is not available from the website of the Department of Pharmacy, Medication and Laboratories (DPML), or from those of the Ministries of Health, Research or Agriculture. The report also states that there is no national plan to access and transfer medical supplies in case of a public health emergency and scores Cameroon's capacity to do so as a "2", meaning the country has limited capacity. [1,2,3,4,5]

The DPML is charged with overseeing supply of medical biology reagents. [6,7] The National Supply Centre for Essential Medicines and Medical Consumables (CENAME) supplies regional/local health establishments via regional pharmaceutical supply centres, and supplies general hospitals directly, which host the national-level public health laboratories. [1,8,9] It does so through the National System for Supply of Essential Medications (SYNAME), now operated through an online system. [10] SYNAME's repertoire includes laboratory materials and reagents. [11] No information is available on the Global Tenders database for Cameroon. [12] The recent Preparation and Response Plan developed in February 2020, in response to the COVID-19 pandemic, identifies a procurement mechanism to respond to public health emergencies as a gap. [13]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 28 September 2020.

[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Ministry of Public Health. Aug 2016. "National health development strategy 2016-2020." [http://www.minsante.cm/site/sites/default/files/PNDS_FRANCAIS-min.pdf]. Accessed 28 September 2020.
[7] Government of Cameroun. 2013. "Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health (Décret No. 2013/093 du 03 avril 2013 portant organisation du Ministère de la Santé Publique)". [https://dpml.cm/images/La%20DPML/organigrammeminsant%20MINSANTE.pdf]. Accessed 28 September 2020.
[8] Department of Pharmacy, Medication and Laboratories (DPML). 19 June 2018. "Decision specifying the list of CENAME's clients (Décision précisant la liste des clients de la CENAME)". [https://dpml.cm/index.php/fr/procedure/approvisionnement/procedures-d-approvisionnements/367-decision-precisant-la-liste-des-clients-de-la-cename]. Accessed 28 September 2020.
[9] Government of Cameroon. 2018. "Order no. 3827/MINSANTE of 5 December 2018 defining supply methods for essential medicines and other pharmaceutical products for health facilities (Arreté no. 3827/MINSANTE du 5 décembre 2018 définissant les modalités d'approvisionnement des formations sanitaires en medicaments essentiels et autres produits pharmaceutiques)". [http://www.minsante.gov.cm/site/?q=fr/content/arr%C3%AAt%C3%A9-d%C3%A9finissant-les-modalit%C3%A9s-d-approvisionnement-des-formations-sanitaires-en]. Accessed 28 September 2020.
[10] Department of Pharmacy, Medication and Laboratories (DPML). N.d. "Project SIGLe/eLMIS (Projet SIGLe/eLMIS)". [https://dpml.cm/index.php/fr/catalogue/acces-web-au-donnees-du-sigle-elmis]. Accessed 28 September 2020.
[11] Department of Pharmacy, Medication and Laboratories (DPML). 18 Aug 2016. "Repertoire of the medications code (Répertoire des codes des medicaments)". [https://dpml.cm/index.php/fr/catalogue/codification-nationale-des-medicaments]. Accessed 28 September 2020.
[12] Global Tenders. "Global Tenders - Procurement News, Plans and Forecast from Cameroon". [https://www.globaltenders.com/global-procurement-cameroon.php]. Accessed 28 September 2020.
[13] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 1

There is some evidence to suggest that Cameroon maintains a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency although they are insufficient and there are no details on what they contain.

The 2017 Joint External Evaluation of Cameroon states that the country maintains emergency MCM stockpiles at central and intermediate levels, but these are insufficient for responding to public health emergencies at all levels and there is a lack of knowledge about procedures for mobilising them. [1]

The website of the Department of Pharmacy, Medications and Laboratories (DPML), the drug regulator which sits under the health ministry, lists legislative texts but no texts have been written to cover medical supplies. [2] The recent Preparedness and Response Plan for COVID-19 states that there is an insufficiency in PPEs as medical teams respond to COVID-19 patients. The plan also states that stockpiles are insufficient, however it is unclear which stockpiles this is referring to. Finally the plan

also highlights the need for equipment in isolation rooms and to treat COVID-19, suggesting that accessing these supplies are insufficient. [3] There is no other relevant evidence from the Ministry of Health and no further information on the DPML website, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [4,5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Department of Pharmacy, Medications and Laboratories (DPML). "Standards and legislation: Pharmaceutical products (Normes et législations : Produits pharmaceutiques)". [https://dpml.cm/index.php/fr/publications/normes-et-legislation/produits-pharmaceutiques]. Accessed 28 September 2020.
[3] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[5] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[6] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[7] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.2.2b

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

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

Current Year Score: 0

There is no evidence that Cameroon has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. There is no mention of laboratory stockpiles in the 2017 Joint External Evaluation of Cameroon, although it does cite a 'National strategic plan for the development of laboratories in Cameroon (2016-2020)', but this is not available from the website of the Department of Pharmacy, Medication and Laboratories (DPML), or from those of the Ministries of Health, Research or Livestock. [1,2,3,4,5] The National Supply Centre for Essential Medicines and Medical Consumables (CENAME) supplies regional/local health establishments via regional pharmaceutical supply centres, and supplies general hospitals directly, which host the national-level public health laboratories. [1,6,7] It does so through the National System for Supply of Essential Medications (SYNAME), now operated through an online system. [8] However, there is no indication that these supplies provide a stockpile of laboratory supplies in case of a public health emergency. [1] The website of the Department of Pharmacy, Medications and Laboratories (DPML), the drug regulator which sits under the health ministry, lists legislative texts but no texts have been written to cover the availability of laboratory supplies. [9] One of the objectives in the recent Preparedness and Response Plan for COVID-19 is to "Reinforce laboratory capacities to diagnose COVID-19", suggesting that capacities and resources are currently insufficient. The plan also states that stockpiles are insufficient, however It is unclear which stockpiles this is referring to. [10] There is no other relevant evidence from the Ministry of Health and no further information on the DPML website, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [2,3,11,12]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Department of Pharmacy, Medication and Laboratories (DPML). 19 June 2018. "Decision specifying the list of CENAME's clients (Décision précisant la liste des clients de la CENAME)".
[https://dpml.cm/index.php/fr/procedure/approvisionnement/procedures-d-approvisionnements/367-decision-precisant-la-liste-des-clients-de-la-cename]. Accessed 28 September 2020.
[7] Government of Cameroon. 2018. "Order no. 3827/MINSANTE of 5 December 2018 defining supply methods for essential medicines and other pharmaceutical products for health facilities (Arreté no. 3827/MINSANTE du 5 décembre 2018 définissant les modalités d'approvisionnement des formations sanitaires en medicaments essentiels et autres produits pharmaceutiques)". [http://www.minsante.gov.cm/site/?q=fr/content/arr%C3%AAt%C3%A9-d%C3%A9finissant-les-modalit%C3%A9s-d-approvisionnement-des-formations-sanitaires-en]. Accessed 28 September 2020.
[8] Department of Pharmacy, Medication and Laboratories (DPML). N.d. "Project SIGLe/eLMIS (Projet SIGLe/eLMIS)".
[https://dpml.cm/index.php/fr/catalogue/acces-web-au-donnees-du-sigle-elmis]. Accessed 28 September 2020.
[9] Department of Pharmacy, Medications and Laboratories (DPML). "Standards and legislation: Pharmaceutical products (Normes et législations : Produits pharmaceutiques)". [https://dpml.cm/index.php/fr/publications/normes-et-legislation/produits-pharmaceutiques]. Accessed 28 September 2020.
[10] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19".
[https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[11] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[12] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence to suggest that Cameroon conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency.

The 2017 Joint External Evaluation of Cameroon scores its capacital system for sending and receiving medical supplies during a public health emergency, a "2", meaning there is limited capacity. There is no mention of laboratory stockpiles in the report, although it does cite a 'National strategic plan for the development of laboratories in Cameroon (2016-2020)', but this is not available from the website of the Department of Pharmacy, Medication and Laboratories (DPML), or from those of the Ministries of Health, Research or Livestock. There is no other mention of an annual review of stockpiles in the report. [1,2,3,4,5] The DPML website lists legislative texts but no texts have been written to cover stockpiles and no mention of any review of stockpiles was found. [2]

The recent Preparedness and Response Plan for COVID-19 states that there is an insufficiency in PPEs as medical teams respond to COVID-19 patients. The plan also states that stockpiles are insufficient, however it is unclear which stockpiles this is referring to and no reference to a review of stockpiles was made. Finally the plan also highlights the need for equipment in isolation rooms and to treat COVID-19, suggesting that accessing these supplies are insufficient. [6] There is no other relevant evidence from the Ministry of Health and no further information on the DPML website, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [2,3,7,8]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Department of Pharmacy, Medication and Laboratories (DPML). 19 June 2018. "Decision specifying the list of CENAME's clients (Décision précisant la liste des clients de la CENAME)".
[https://dpml.cm/index.php/fr/procedure/approvisionnement/procedures-d-approvisionnements/367-decision-precisant-la-liste-des-clients-de-la-cename]. Accessed 28 September 2020.
[7] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[8] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

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 Cameroon 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.

The 2017 Joint External Evaluation of Cameroon scores its capacital system for sending and receiving medical supplies during a public health emergency, a "2", meaning there is limited capacity. The report also mentions maintaining emergency MCM stockpiles at central and intermediate levels, but these are insufficient for responding to public health emergencies at all levels and there is a lack of knowledge about procedures for mobilising them. [1] The website of the Department of Pharmacy, Medications and Laboratories (DPML), the drug regulator which sits under the health ministry, lists legislative

texts but no texts have been written to cover medical supplies. [2]

The recent Preparedness and Response Plan for COVID-19 states that there is an insufficiency in PPEs as medical teams respond to COVID-19 patients. Finally the plan also highlights the need for equipment in isolation rooms and to treat COVID-19, suggesting that accessing these supplies through procurement or production is insufficient. [3] There is no other relevant evidence from the Ministry of Health and no further information on the DPML website, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [4,5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Department of Pharmacy, Medications and Laboratories (DPML). "Standards and legislation: Pharmaceutical products (Normes et législations : Produits pharmaceutiques)". [https://dpml.cm/index.php/fr/publications/normes-et-legislation/produits-pharmaceutiques]. Accessed 28 September 2020.
[3] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[5] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[6] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[7] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.2.3b

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

Current Year Score: 0

There is no evidence that Cameroon has a plan/agreement to leverage domestic manufacturing capacity to produce or to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The 2017 Joint External Evaluation of Cameroon states that there is a central procurement system for the acquisition of laboratory needs, but does not specify which laboratories (public and/or animal health) it covers. It cites a 'National strategic plan for the development of laboratories in Cameroon (2016-2020)', but this is not available from the website of the Department of Pharmacy, Medication and Laboratories (DPML), or from those of the Ministries of Health, Research or Livestock. [1,2,3,4,5] The National Supply Centre for Essential Medicines and Medical Consumables (CENAME) supplies regional/local health establishments via regional pharmaceutical supply centres, and supplies general hospitals directly, which host the national-level public health laboratories. [1,6,7] It does so through the National System for Supply of Essential Medications (SYNAME), now operated through an online system. [8] SYNAME's repertoire includes laboratory materials and reagents. [9] No information is available on the Global Tenders database for Cameroon. [10] The website of the Department of Pharmacy,

Medications and Laboratories (DPML), the drug regulator which sits under the Ministry of Health, lists legislative texts but no texts have been written to cover the availability of laboratory supplies. [11] One of the objectives in the recent Preparedness and Response Plan for COVID-19 is to "Reinforce laboratory capacities to diagnose COVID-19", suggesting that laboratory capacities and resources are currently insufficient. [12] There is no other relevant evidence from the Ministry of Health and no further information on the DPML website, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [13,14,15,16]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[4] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 28 September 2020.
[5] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[6] Department of Pharmacy, Medication and Laboratories (DPML). 19 June 2018. "Decision specifying the list of CENAME's clients (Décision précisant la liste des clients de la CENAME)". [https://dpml.cm/index.php/fr/procedure/approvisionnement/procedures-d-approvisionnements/367-decision-precisant-la-liste-des-clients-de-la-cename]. Accessed 28 September 2020.
[7] Government of Cameroon. 2018. "Order no. 3827/MINSANTE of 5 December 2018 defining supply methods for essential medicines and other pharmaceutical products for health facilities (Arreté no. 3827/MINSANTE du 5 décembre 2018 définissant les modalités d'approvisionnement des formations sanitaires en medicaments essentiels et autres produits pharmaceutiques)". [http://www.minsante.gov.cm/site/?q=fr/content/arr%C3%AAt%C3%A9-d%C3%A9finissant-les-modalit%C3%A9s-d-approvisionnement-des-formations-sanitaires-en]. Accessed 28 September 2020.
[8] Department of Pharmacy, Medication and Laboratories (DPML). N.d. "Project SIGLe/eLMIS (Projet SIGLe/eLMIS)". [https://dpml.cm/index.php/fr/catalogue/acces-web-au-donnees-du-sigle-elmis]. Accessed 28 September 2020.
[9] Department of Pharmacy, Medication and Laboratories (DPML). 18 Aug 2016. "Repertoire of the medications code (Répertoire des codes des medicaments)". [https://dpml.cm/index.php/fr/catalogue/codification-nationale-des-medicaments]. Accessed 28 September 2020.
[10] Global Tenders. "Global Tenders - Procurement News, Plans and Forecast from Cameroon". [https://www.globaltenders.com/global-procurement-cameroon.php]. Accessed 28 September 2020.
[11] Department of Pharmacy, Medications and Laboratories (DPML). "Standards and legislation: Pharmaceutical products (Normes et législations : Produits pharmaceutiques)". [https://dpml.cm/index.php/fr/publications/normes-et-legislation/produits-pharmaceutiques]. Accessed 28 September 2020.
[12] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[13] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[14] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[15] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[16] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence to suggest that Cameroon has a national plan for dispensing medical countermeasures (MCM) during a public health emergency. According to the 2017 Joint External Evaluation (JEE) of Cameroon, as well as the Preparedness and Response Plan for COVID-19, the country has an approved and tested plan for MCM supply (not specifically for public health emergencies) which enables the authorities to take decisions on deploying them in an emergency. It has also created a working group to develop a national plan for MCM supply in emergencies. However, with regard to dispensing MCMs, the JEE notes a lack of knowledge about mechanisms for setting up and mobilizing emergency stocks. [1,2] In June 2018, the Ministry of Health announced the publication of a national 'Medical countermeasures supply chain plan', which, along with tools for preparing and managing the emergency supply chain, has been tested in a simulation and approved. [3] There is no information from the Ministry of Health announcement on whether this plan for MCM supply addresses how to dispense them during an emergency. The plan itself is not available from the Ministry of Health or its Department of Pharmacy, Medication and Laboratories (DPML), which is the drugs regulator. [4,5] There is no other relevant evidence from the Ministry of Health or DPML, and the websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection (DCP), responsible for general emergency response, were not working at time of research. [4,5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. 29 Jun 2018. "Adoption of tools for preparation for and management of emergency supply chains in Cameroon (L'adoption des outils de preparation et de gestion de la chaine d'approvisionnement d'urgence au Cameroun)". [http://www.minsante.cm/site/?q=fr/content/l%E2%80%99adoption-des-outils-de-prepartion-et-de-gestion-de-la-chaine-d%E2%80%99approvisionnement-d%E2%80%99urgence]. Accessed 28 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[5] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[6] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[7] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

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

4.3.2a

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

Current Year Score: 0

There is no evidence that Cameroon has a public plan for receiving foreign health personnel during a public health emergency. According to the 2017 Joint External Evaluation of Cameroon, the country does not have a plan for receiving health personnel during a public health emergency. [1] The Preparedness and Response Plan for COVID-19 emphasizes the lack in capacity of hospital staff and number of personnel but makes no mention of an ability to receive foreign health personnel during this period. [2] There is no evidence from the Ministry of Health or its 'National Observatory of Human Resources for Health' that such a plan has been published since 2017. [3,4] There is no evidence of a system for receiving foreign health personnel from the websites of international partner agencies (the World Health Organisation, ReliefWeb and the United Nations Office for the Coordination of Humanitarian Affairs), or in the national response plan for the 2018 cholera outbreak. [5,6,7,8] The websites of the Ministry of Territorial Administration and Decentralisation (MINATD) and its Department of Civil Protection (DCP), responsible for general emergency response, were not working at time of research. [9,10]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] Ministry of Public Health/National Observatory of Human Resources for Health. "Documents (Documentation)". [http://www.cm-minsante-drh.com/site/index.php/en/home-4]. Accessed 28 September 2020.
[5] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[6] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[7] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[8] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[9] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[10] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 64.7

2014

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: 123.37

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 Cameroon's government 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. No such commitment is mentioned in the 2017 Joint External Evaluation of Cameroon. [1] Considering emergency response documents which are publicly available, there is no reference to such a commitment in the general 'National contingency plan' (2011), the emergency response plan for the 2018 cholera epidemic, or the Preparedness and Response Plan for COVID-19. [2,3,4] The 2011 'Technical guide for integrated disease surveillance and response in Cameroon' mentions the need to vaccinate medical personnel during an outbreak, but does not call for priority treatment of medical responders who become sick as a result of responding to an emergency. [5] Government order no. 122/CAB/MINSANTE of 19 January 2018 creates a network of emergency health services to respond to health emergencies, specialised in interventions outside of hospitals. It does not mention prioritised treatment for health personnel. [6] No other or more updated documents addressing priority treatment of emergency response health workers are available from the Ministry of Health, the World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [7,8,9,10] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [11,12]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[4] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[5] Ministry of Public Health and World Health Organisation (WHO). 2011. "Technical guide for integrated disease surveillance and response in Cameroon (Guide technique pour la surveillance intégrée de la maladie et la riposte au Cameroun)". [http://www.cis-minsante.cm/site/index.php/telecharger/category/11-guides]. Accessed 28 September 2020.
[6] Government of Cameroon. "Order no. 122/CAB/MINSANTE of 19 January 2018 Reorganisation of urgent medical aid (Arreté no. 122/CAB/MINSANTE du 19 janvier 2018 Reorganisation de l'aide médicale urgente)". [https://www.camerlex.com/arrete-n-122cabminsante-19-janvier-2018-reorganisation-de-laide-medicale-urgente/]. Accessed 28 September 2020.
[7] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[8] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[9] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.

[10] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[11] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[12] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of a system for public health officials and healthcare workers to communicate during a public health emergency.

Under "Communication and coordination - internal and with partners", the 2017 Joint External Evaluation of Cameroon states that the Ministry of Public Health has created a communication task force, and that there is real-time diffusion of information in emergencies by means of situation reports. However, it does not specify what the task force does, and adds that there is no mechanism for coordination of communication between stakeholders (public sector, civil society, private sector, hospitals) during emergencies. [1] The situation outbreak reports available online are for general consumption, not specifically from public health authorities to healthcare workers. [2]

The Preparedness and Response Plan for COVID-19 makes no mention of a communication system between health officials and healthcare workers, although does state that Cameroon does not have a risk communication plan. The budget shows there is a line dedicated to the development of a communication plan, but there are no further details in the rest of the response plan to explain what the contents might be. The plan also states that the Directorate of Health Promotion is the dedicated structure for the communication on risks to the Ministry of Public Health, but it is unclear whether this is in line with any communication system. [3] The response plan for the 2018 cholera outbreak does not explicitly mention any mechanisms for communication between public health authorities and healthcare workers, other than surveillance reporting. [4] No relevant evidence is available from the 2011 'National contingency plan', the Ministry of Health, or repositories of the World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), or a wider search. [5,6,7,8,9] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [10,11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. 5 Oct 2018. "Situation report no. 26: Management of the cholera epidemic (Rapport de situation no. 26: Gestion de l'épidémie de choléra)".

[http://www.minsante.cm/site/sites/default/files/Sitrep%2026%20Cholera%20%281%29.pdf]. Accessed 28 September 2020.
[3] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[4] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[5] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[7] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[8] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 30 December 2018.
[9] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[10] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[11] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a system for public health officials and healthcare workers to communicate during an emergency and therefore it does not encompass healthcare workers in both the public and private sector.

Under "Communication and coordination - internal and with partners", the 2017 Joint External Evaluation of Cameroon states that the Ministry of Public Health has created a communication task force, and that there is real-time diffusion of information in emergencies by means of situation reports. However, it does not specify what the task force does, and adds that there is no mechanism for coordination of communication between stakeholders (public sector, civil society, private sector, hospitals) during emergencies. [1] The situation outbreak reports available online are for general consumption, not specifically from public health authorities to healthcare workers. [2]

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(OCHA), or a wider search. [5,6,7,8,9] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [10,11]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Ministry of Public Health. 5 Oct 2018. "Situation report no. 26: Management of the cholera epidemic (Rapport de situation no. 26: Gestion de l'épidémie de choléra)".
[http://www.minsante.cm/site/sites/default/files/Sitrep%2026%20Cholera%20%281%29.pdf]. Accessed 28 September 2020.
[3] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19".
[https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[4] Ministry of Public Health. "National plan for response to the cholera epidemic in Cameroon August-October 2018 (Plan national de réponse à l'épidemie de choléra au Cameroun août-octobre 2018".
[https://reliefweb.int/sites/reliefweb.int/files/resources/plan_national_de_reponse_au_cholera_2018_version_longue.pdf]. Accessed 28 September 2020.
[5] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)."
[http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[7] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[8] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 30 December 2018.
[9] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[10] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[11] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon's public health system is monitoring and tracking the number of health care associated infections (HCAI) that occur in healthcare facilities.

The 2017 Joint External Evaluation of Cameroon recommends developing a national plan for combatting HCAI and does not mention any monitoring activities. It notes the existence of a sub-department for hygiene and sanitation at the health

ministry, charged with overseeing hospital hygiene. [1] In the Preparedness and Response Plan for COVID-19, there is mention that there are procedures in place to monitor infections in hospitals but it is unclear whether these are referring to HCAI and no evidence was found of such a procedure or document. [2]

In February 2018, the Ministry of Health published a hygiene and sanitation plan as part of its 'Project to strengthen performance of the health system'. It focuses on disposal of medical waste and does not mention monitoring of HCAI. [3] HCAI are not among the 100 core health indicators tracked by Cameroon's National Public Health Observatory. [4] There is no evidence of HCAI monitoring from the websites of the Ministry of Health, the Ministry of Research's Institute of Medical Research and Herbal Medicine Studies (IMPM) or the Cameroon Pasteur Centre (which serves as a national reference laboratory), and the National Public Health Laboratory has no online presence.[5,6,7]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 10 December 2018.
[2] Government of Cameroon. February 2020. "Cameroon Preparedness and Response Plan for COVID-19". [https://reliefweb.int/sites/reliefweb.int/files/resources/plan_de_preparation_coronavirus_cmr._version_du_10_mars_2019.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health/National Public Health Observatory and World Health Organisation (WHO). "Tracking 100 core health indicators for Cameroon in 2017." [http://www.minsante.gov.cm/site/?q=fr/content/tracking-100-core-health-indicators-cameroon-2017]. Accessed 28 September 2020.
[4] Noetchognou, J et al. 8 Dec 2016. "Surveillance of nosocomial infections in the Yaounde University Teaching Hospital, Cameroon", in Biomed Central Research Notes, 9. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5146876/]. Accessed 28 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[6] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 28 September 2020.
[7] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 28 September 2020.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Cameroon has a national requirement for ethical review before beginning a clinical trial. The Division for Health Operations Research (DROS) of the Ministry of Health is responsible for giving administrative clearance to conduct health research in Cameroon. [1] DROS is assigned responsibility for ethics in human health research in articles 29-31 of Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health. [2] To achieve administrative clearance from DROS, a project must first receive ethical clearance from a research ethics committee approved by DROS. [3] The Ministry of Health

created the first such committee, the Cameroon National Ethics Committee (CNEC), in 1987 with a mandate to examine all proposed research projects involving humans. The CNEC still handles the largest number of applications, but other national and institutional committees now exist. [4,5,6] Four research ethics committees have been approved by and registered with DROS: those linked to the Cameroon Baptist Church, the International Centre "Chantal Biya" (CIRCB), the Faculty of Medicine of Yaoundé and the University of Buéa. [3]

[1] Canadian Coalition for Global Health Research. N.d. "Cameroon research environment." [https://www.ccghr.ca/resources/harmonization/cameroon/cameroon-research-environment/]. Accessed 28 September 2020.
[2] Government of Cameroun. 2013. "Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health (Décret No. 2013/093 du 03 avril 2013 portant organisation du Ministère de la Santé Publique)". [https://dpml.cm/images/La%20DPML/organigrammeminsant%20MINSANTE.pdf]. Accessed 28 September 2020.
[3] Fomboh, R. Apr 2017. "Review of research and research ethics in Cameroon", in International Journal of Research Culture Society, 1
[2]. [https://www.researchgate.net/publication/319311863_Review_of_Research_and_Research_Ethics_in_Cameroon]. Accessed 28 September 2020.
[4] Canadian Coalition for Global Health Research. N.d. "Cameroon research ethics." [https://www.ccghr.ca/resources/harmonization/cameroon/cameroon-research-ethics/]. Accessed 28 September 2020.
[5] Government of Cameroon. 1983. "Order no. 079/A/MSP/DS of the Ministry of Public Health on 22 October 1987 on the creation and organisation of an Ethics Committee for Research Involving Humans (Arrêté no. 079/A/MSP/DS du Ministre de la Santé Publique du 22 octobre 1987 portant création et organisation d'un Comité d'Ethique sur la Recherche Impliquant les Etres Humains)". [https://elearning.trree.org/mod/folder/view.php?id=158]. Accessed 28 September 2020.
[6] Training and Resources in Research Ethics Evaluation (TRREE). 16 Aug 2012. "Introduction to the legal system in Cameroon (Introduction au système du droit Camerounais)". [https://elearning.trree.org/mod/page/view.php?id=155&lang=fr]. Accessed 28 September 2020.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. The Division for Health Operations Research (DROS) of the health ministry is responsible for giving administrative clearance to conduct health research in Cameroon, for which ethical review by an approved research ethics committee is required. [1,2,3] DROS has no dedicated website, and neither the Ministry of Health's website or that of its Virtual Documentation Center has any information related to DROS' work or an expedited process for approving clinical trials. [4,5,6] No evidence that an expedited approvals process exists is available from the 2017 Joint External Evaluation of Cameroon or a wider online search. [7]

[1] Canadian Coalition for Global Health Research. N.d. "Cameroon research environment." [https://www.ccghr.ca/resources/harmonization/cameroon/cameroon-research-environment/]. Accessed 28 September 2020.
[2] Government of Cameroun. 2013. "Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health (Décret No. 2013/093 du 03 avril 2013 portant organisation du Ministère de la Santé Publique)". [https://dpml.cm/images/La%20DPML/organigrammeminsant%20MINSANTE.pdf]. Accessed 28 September 2020.

[3] Fomboh, R. Apr 2017. "Review of research and research ethics in Cameroon", in International Journal of Research Culture Society, 1
[2]. [https://www.researchgate.net/publication/319311863_Review_of_Research_and_Research_Ethics_in_Cameroon]. Accessed 28 September 2020.
[4] Ministry of Public Health. N.d. "Division for Health Operations Research (Division de la Recherche Opérationelle en Santé)". [http://www.minsante.cm/site/?q=fr/organigramme/division-de-la-recherche-op%C3%A9rationnelle-en-sant%C3%A9]. Accessed 28 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[6] Ministry of Public Health. "Virtual Documentation Center for the Health Sector: DROS - Division for Health Operations Research (DROS - Division Recherche Opérationnelle Santé)". [http://minsante-cdnss.cm/en/content/dros-division-recherche-op%C3%A9rationnelle-sant%C3%A9]. Accessed 28 September 2020
[7] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Current Year Score: 1

The Department of Pharmacy, Medication and Laboratories (DPML) under the Ministry of Health is responsible for approving new medical countermeasures for humans. Under Article 81 of Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health, it is responsible for controlling the import, export, manufacture and distribution of pharmaceuticals, biological reagents, medical devices and cosmetics. [1,2] Approvals of new medical countermeasures (including medications and general medical supplies) are given by its Office of Market Authorisations. [2,3]

[1] Department of Pharmacy, Medication and Laboratories (DPML). 17 Aug 2016. "Our missions (Nos missions)". [https://dpml.cm/index.php/fr/la-dpml/nos-missions]. Accessed 28 September 2020.
[2] Government of Cameroon. 2013. "Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health (Décret No. 2013/093 du 03 avril 2013 portant organisation du Ministère de la Santé Publique)". [https://dpml.cm/images/La%20DPML/organigrammeminsant%20MINSANTE.pdf]. Accessed 28 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). 17 Aug 2016. "Organigram (Organigramme)". [https://dpml.cm/index.php/fr/la-dpml/organigramme]. Accessed 28 September 2020.

4.7.2b

Is there an expedited process for approving medical countermeasures (MCM) for human use during public health emergencies?
Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Cameroon has an expedited process for approving medical countermeasures (MCMs) for human use during public health emergencies. The Department of Pharmacy, Medication and Laboratories (DPML) under the health

ministry is responsible for approving the manufacturing, import and distribution of pharmaceutical products, biological reagents and medical supplies for humans, under Article 81 of Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health. [1,2] Approvals of new medications and general medical supplies are given by its Office of Market Authorisations. There is no specific mention of MCMs for use in public health emergencies nor of an expedited process for approvals. [2,3] There is no evidence from the DPML's website or the legislation it lists of an expedited process for approving MCM for human use, either during public health emergencies or in other scenarios. [4,5]

[1] Department of Pharmacy, Medication and Laboratories (DPML). 17 Aug 2016. "Our missions (Nos missions)". [https://dpml.cm/index.php/fr/la-dpml/nos-missions]. Accessed 28 September 2020.
[2] Government of Cameroon. 2013. "Decree no. 2013/093 of 3 April 2013 on the organisation of the Ministry of Public Health (Décret No. 2013/093 du 03 avril 2013 portant organisation du Ministère de la Santé Publique)". [https://dpml.cm/images/La%20DPML/organigrammeminsant%20MINSANTE.pdf]. Accessed 28 September 2020.
[3] Department of Pharmacy, Medication and Laboratories (DPML). 17 Aug 2016. "Organigram (Organigramme)". [https://dpml.cm/index.php/fr/la-dpml/organigramme]. Accessed 28 September 2020.
[4] Department of Pharmacy, Medication and Laboratories (DPML). 2018. Official website. [https://dpml.cm/index.php/fr/]. Accessed 28 September 2020.
[5] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

Epidemics and pandemics are integrated into the national risk reduction strategy, as there is not a standalone national disaster risk reduction strategy for epidemics and pandemics. According to the 2017 Joint External Evaluation of Cameroon, planning for public health emergencies is covered in the general 'National contingency plan' (2011), which is a disaster risk reduction plan. It does not mention the existence of a stand-alone national risk reduction strategy for pandemics, however. [1] The 'National contingency plan' addresses health risks, including epidemics (specifically of meningitis, yellow fever and cholera) and animal diseases. It has sections on preparing for and preventing the identified risks, for instance through public awareness-raising, improved surveillance and developing response plans. [2] There is no evidence of a stand-alone national risk reduction strategy for pandemics from the website of the Ministry of Health or repositories of the World Health Organisation (WHO), ReliefWeb, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). [3,4,5,6] Neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites. [7,8]

[1] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[2] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[3] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[4] World Health Organisation (WHO). "Country planning cycle database." [http://www.nationalplanningcycles.org/planning-cycle/CMR]. Accessed 28 September 2020.
[5] ReliefWeb. "Cameroon." [https://reliefweb.int/country/cmr]. Accessed 28 September 2020.
[6] United Nations Office for the Coordination of Humanitarian Affairs (OCHA). "Humanitarian response/Cameroon/Documents." [https://www.humanitarianresponse.info/en/operations/cameroon/documents]. Accessed 28 September 2020.
[7] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[8] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

There is evidence to show that Cameroon has a cross-border agreement as part of a regional group with regard to public health emergencies. Cameroon was one of the Central African countries which operationalised the Africa Centres for Disease Control and Prevention's (Africa CDC) Regional Collaborating Centre (RCC) in Gabon in July 2017. This aims to jointly

strengthen surveillance, preparation and emergency response to infectious diseases. [1,2,3] According to its value statement, "In the event of a public health emergency on the continent with cross border or regional implications, the Africa CDC is mandated to deploy responders, in consultation with affected Member States, to support Member States in delivering an effective response." [4] Cameroon is also part of the One Health Central and Eastern Africa Network (OHCEA), the members of which collaborate over capacity building for disease control, but this does not involve an explicit agreement or protocol for mutual support in a public health emergency. [5] There is no evidence of other agreements from the website of the Ministry of Health, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection Department (responsible for emergency response planning) currently have functioning websites.[6,7,8]

[1] African Union. 2 Aug 2017. "Central Africa establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to improve surveillance, preparedness and response to infectious and non-communicable diseases." [https://reliefweb.int/report/world/central-africa-establishes-africa-centres-disease-control-and-prevention-regional]. Accessed 28 September 2020.
[2] African Union/Africa Centers for Disease Control and Prevention. "Regional collaborating centres." [http://www.africacdc.org/rccs]. Accessed 28 September 2020.
[3] African Union/Africa Centers for Disease Control and Prevention. "Emergency preparedness and response." [http://www.africacdc.org/focus-areas/emergency-preparedness-and-response]. Accessed 28 September 2020.
[4] African Union/Africa Centers for Disease Control and Prevention. "Vision, mission, values." [http://www.africacdc.org/about/vision-mission-values]. Accessed 28 September 2020.
[5] One Health Central and Eastern Africa Network (OHCEA). N.d. "About us." [http://ohcea.org/index.php?option=com_content&view=article&id=31&Itemid=102]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[7] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[8] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September.

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 Cameroon has cross-border agreements, protocols or MOUs with neighbouring countries, or as part of a regional group, with regards to animal health emergencies. It is part of the One Health Central and Eastern Africa Network (OHCEA), the members of which collaborate over capacity building for disease control, but this does not involve an explicit agreement or protocol for mutual support in an animal health emergency. [1] The National Veterinary Laboratory (LANAVET)'s website states that its outbreak surveillance work is coordinated at a regional level by the Food and Agriculture Organisation (FAO), within the Network of West and Central African Veterinary Laboratories for the diagnosis of avian influenza and other transboundary diseases (RESOLAB) and the IDENTIFY project. However, it links to defunct FAO websites for these. [2] Operation of RESOLAB was handed over from the FAO to regional coordinators in 2013, and divided into Central African (RESOLAB-CA) and West African (RESOLAB-WA) networks. [3] No web presence can be found for RESOLAB-CA. The former RESOLAB sub-network for rabies has now been absorbed into the Pan-African Rabies Control Network (PARACON), of which Cameroon is a member. There is no evidence that PARACON members have an agreement for mutual support during animal health emergencies. [4,5] There is no evidence of other agreements from the website of the Ministry of Livestock or LANAVET, and neither the Ministry of Territorial Administration and Decentralisation (MINATD), nor its Civil Protection

Department (responsible for emergency response planning) currently have functioning websites. [6,7,8,9]

[1] One Health Central and Eastern Africa Network (OHCEA). N.d. "About us." [http://ohcea.org/index.php?option=com_content&view=article&id=31&Itemid=102]; and "Cameroon engages biomedical practitioners and academics on biorisk issues in the country." [http://ohcea.org/index.php?option=com_content&view=article&id=182:cameroon-engages-biomedical-practitioners-and-academics-on-biorisk-issues-in-the-country&catid=31&Itemid=617]. Accessed 28 September 2020.
[2] National Veterinary Laboratory of Cameroon. N.d. "Epidemiological surveillance of animal diseases." [http://www.lanavet.com/WD150AWP/WD150Awp.exe/CTX_3984-1-uajXRSsALu/PAGE_01_Accueil/SYNC_-598589745?WD_ACTION_=MENU&ID=M12]. Note: Links to LANAVET's web pages often do not work, the page can also be reached by navigating from [http://www.lanavet.com/Lanavet_WEB/] to the English home page, and to "Surveillance of diseases". Accessed 28 September 2020.
[3] Food and Agriculture Organisation (FAO). 2013. "FAO hands over coordination of animal networks to regional coordinators in West and Central Africa." [http://www.fao.org/ag/AGAInfo/programmes/en/empres/news_201213b.html]. Accessed 28 September 2020.
[4] IZSAM G. Caporale. January 2018. "National Veterinary Epidemiological Bulletin", no. 29. [http://www.izs.it/BENV_NEW/Engine/RAServeFile.php/f/pdf_arretrati_benv/2018/benv_29_january_2018_en.pdf]. Accessed 28 September 2020.
[5] Global Alliance for Rabies Control (GARC). "Pan-African Rabies Control Network (PARACON): A rabies epidemiological database for sub-Saharan Africa." [https://rabiesalliance.org/networks/paracon/bulletin]. Accessed 28 September 2020.
[6] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[7] National Veterinary Laboratory of Cameroon. [http://www.lanavet.com/Lanavet_WEB/]. Accessed 28 September 2020.
[8] Ministry of Territorial Administration and Decentralisation (MINATD). [http://www.minatd.cm/index.php/fr]. Attempted to access on 28 September 2020.
[9] Department of Civil Protection. [http://www.dpcminat.cm/]. Attempted to access on 28 September 2020

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

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

- Membership in Global Health Security Agenda (GHSA)

- Membership in the Alliance for Country Assessments for Global Health Security and IHR Implementation (JEE Alliance)

- Membership in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP)

- Membership in the Australia Group (AG)

- Membership in the Proliferation Security Initiative (PSI)

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

Current Year Score: 0

2021

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

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

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

5.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

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

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

5.4.2a

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

Yes = 1 , No = 0

Current Year Score: 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 insufficient evidence to show that Cameroon has allocated national funds to improve capacity to address epidemic threats within the past three years. With support from the Centers for Disease Control and Prevention (CDC), in December 2018, the Public Health Emergency Operations Center (PHEOC) was formally put into place to strengthen emergency management capacity and help improve health security, which included setting up a framework with tools and mechanisms intended to "detect disease outbreaks at the earliest possible moment in order to respond effectively". [1,2,3] However, no evidence was found to indicate how much funding was allocated from the Cameroonian government. The PHEOC also has no online presence. No information on fund allocation was available on the Prime Minister's webpage. [4] The last National Health Accounts report published was in 2012 and no other information was available on the Ministry of Health website. [5,6]

[1] United States Embassy of Cameroon. September 2017. "U.S.-Cameroon Demonstrate Preparedness in Public Health Emergency Management". [https://cm.usembassy.gov/u-s-cameroon-demonstrate-preparedness-public-health-emergency-management/]. Accessed 28 September 2020.
[2] Centers for Disease Control and Prevention (CDC). "CDC in Cameroon". [https://www.cdc.gov/globalhealth/countries/cameroon/pdf/Cameroon_factsheet.pdf]. Accessed 28 September 2020.
[3] United States Embassy of Cameroon. December 2018. "Ambassador's Remarks for the Ribbon Cutting Ceremony for the Cameroon Public Health Emergency Operations Center (PHEOC)". [https://cm.usembassy.gov/ambassadors-remarks-pheoc-ribbon-cutting-ceremony/]. Accessed 28 September 2020.
[4] Republic of Cameroon - Prime Minister Services (Services du Premier Ministre). [https://www.spm.gov.cm/site/?q=en/content/investing-cameroon]. Accessed 28 September 2020.
[5] Ministry of Public Health. 2012. "National Health Accounts". [https://minsante.cm/site/?q=en/download/file/fid/466]. Accessed 28 September 2020.
[6] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of a publicly identified special emergency public financing mechanism and funds which the country can access in the face of a public health emergency. Cameroon is eligible for the World Bank pandemic financing facility and has a domestic emergency fund for disaster response, which is not specifically for but includes pandemics. It is on the list of countries eligible for International Development Association (IDA) funding, and is therefore eligible for the World Bank's Pandemic Emergency Financing Facility. [1] This provides surge financing to low-income countries affected by a large-scale disease outbreak to prevent it from reaching pandemic proportions. [2] Domestically, the 2017 Joint External Evaluation of Cameroon states that Cameroon "has a budget line specifically for epidemic management (preparation and response to public health emergencies)", but adds that "mobilisation of resources is difficult", and recommends advocating for strengthened budgetary support. [3] The 2011 'National contingency plan' for general disaster risk reduction, which includes human and animal disease threats, states that a national emergency fund will be put in place. [4] According to a 2014

progress report on Cameroon's implementation of the Hyogo Framework for Action, this financing instrument for general disaster relief and assistance operations has existed since 2012 and is known as the 'Victim support fund for disasters and natural disasters.' It is in a special account managed by the minister in charge of civil protection. [5]

[1] International Development Association (IDA). "Borrowing countries." [http://ida.worldbank.org/about/borrowing-countries]. Accessed 28 September 2020.
[2] World Bank. "Pandemic Emergency Financing Facility." [http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf]. Accessed 28 September 2020.
[3] World Health Organisation (WHO). 2017. "Joint external evaluation of IHR core capacities of Cameroon: Mission report 25-29 September 2017 (Evaluation externe conjointe des principales capacité RSI de la République de Cameroon: Rapport de mission 25-29 Septembre 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259676/WHO-WHE-CPI-REP-2017.60-fre.pdf;jsessionid=F8E068FD3061AE57FA1101DEB8910F33?sequence=1]. Accessed 28 September 2020.
[4] Government of Cameroon. 2011. "National contingency plan (Plan national de contingence)." [http://extwprlegs1.fao.org/docs/pdf/cmr147301.pdf]. Accessed 28 September 2020.
[5] PreventionWeb. 23 Dec 2014. "Cameroon: National progress report on the implementation of the Hyogo Framework for Action (2013-2015) - Interim (Cameroun: Rapport national de suivi sur la mise en œuvre du Cadre d'action de Hyogo (2013-2015) - Interim)". [https://www.preventionweb.net/files/41516_CMR_NationalHFAprogress_2013-15.pdf]. Accessed 28 September 2020.

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

5.5.4a

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

Current Year Score: 0

There is no evidence that senior leaders (president or ministers), in the past three years, have made a public commitment either to improve Cameroon's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity, and no evidence that Cameroon has supported other countries to improve capacity to address epidemic threats by providing financing or support. No evidence was found of such commitment in a general media search. With support from the Centers for Disease Control and Prevention (CDC), the government of Cameroon did set up a framework with tools and mechanisms intended to "detect disease outbreaks at the earliest possible moment in order to respond effectively". In 2017, Cameroon conducted an 11-day exercise to test these mechanisms, which included "improved laboratories, real time surveillance, point of entry, medical countermeasures, risk communications, a new cadre of 'disease detectives', and an Emergency Operations Center". [1,2,3] However these efforts were not accompanied by evidence that a senior leader made a public announcement to improve capacity to address epidemic threats. No other evidence of statements made by senior leaders were available on the websites of the Ministry of Health, Cameroon Customs, or on the World Health Organization (WHO) Cameroon country-specific webpage. [4,5,6]

[1] Editorials. September 2017. "Cameroon and U.S. Partners in Preparedness". [https://editorials.voa.gov/a/cameroon-us-partners-

preparedness/4031133.html#:~:text=Cameroon%20health%20officials%20are%20using%20new%20and%20upgraded,exercise%20began%20September%207th%20and%20ended%20September%2015th.]. Accessed 25 September 2020.
[2] United States Embassy of Cameroon. September 2017. "U.S.-Cameroon Demonstrate Preparedness in Public Health Emergency Management". [https://cm.usembassy.gov/u-s-cameroon-demonstrate-preparedness-public-health-emergency-management/]. Accessed 25 September 2020.
[3] Centers for Disease Control and Prevention (CDC). "CDC in Cameroon". [https://www.cdc.gov/globalhealth/countries/cameroon/pdf/Cameroon_factsheet.pdf]. Accessed 25 September 2020.
[4] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[5] Cameroon Customs. [http://www.douanes.cm/douane/index.php/fr/]. Accessed 28 September 2020.
[6] World Health Organization (WHO). "Cameroon". [https://www.who.int/countries/cmr/]. Accessed 15 November 2020.

5.5.4b

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

Current Year Score: 1

There is publicly available evidence that Cameroon has, in the past three years, invested finances (from donors) to improve capacity to address epidemic threats but there is no evidence that it has provided other countries with financing or technical support to improve capacity to address epidemic threats.

According to the Georgetown Infectious Disease Atlas (GIDA) Global Health Security Tracker, Cameroon has recevied USD 1.20 billion in global health funds. USAID, for example, has funded both the One Health Workforce project (a total of 699.30M USD disbursed) and PREDICT II (a total of 166.41M USD disbursed), which are both capacity building programs. PREDICT II was active through 2019, while the One Health Workforce project is still ongoing. [1]

Cameroon has received support from the Centers for Disease Control and Prevention (CDC), to set up a framework with tools and mechanisms intended to "detect disease outbreaks at the earliest possible moment in order to respond effectively". In 2017, Cameroon conducted an 11-day exercise to test these mechanisms, which included "improved laboratories, real time surveillance, point of entry, medical countermeasures, risk communications, a new cadre of 'disease detectives', and an Emergency Operations Center". [2,3,4]

In May 2020, the Association of Insurance Companies of Cameroon (ASAC) donated "120 million and 05 million CFA francs to the Minister of Public Health as a contribution to the national solidarity fund for the fight against Covid-19, created on 31 March 2020 by the President of the Republic". [5] Cameroon has also received assistance from a number of other stakeholders, "The government said it used money contributed to a COVID-19 solidarity fund to buy the COVID kits. Cameroon president Paul Biya contribited $ 1.8 million to the fund. Other contributions were received from civilians, companies, minister, lawmakers and senior sate functionaries. Cameroon also received assistance to fight COVID-19 from foreign governments. The central African state said it received $226 million in emergency funding from the International Monetary Fund". [6] However, again, no evidence is available to suggest that these donations were meant to improve Cameroon's capacity to address epidemic threats. No further evidence is available on the websites of the Ministry of Health, or on the World Health Organization (WHO) Cameroon country-specific webpage. [7,8]

[1] Georgetown Infectious Disease Atlas (GIDA) Global Health Security Tracker. "Cameroon". [https://tracking.ghscosting.org/details/46/recipient]. Accessed 28 September 2020.
[2] Georgetown Infectious Disease Atlas (GIDA). "Cameroon". [https://tracking.ghscosting.org/table/907/recipient]. Accessed 3 May 2021.
[3] USAID. "EMERGING PANDEMIC THREATS 2 PROGRAM (EPT-2)". [https://www.usaid.gov/global-health/health-areas/emerging-pandemic-threats/programs]. Accessed 3 May 2021.
[4] Editorials. September 2017. "Cameroon and U.S. Partners in Preparedness". [https://editorials.voa.gov/a/cameroon-us-partners-preparedness/4031133.html#:~:text=Cameroon%20health%20officials%20are%20using%20new%20and%20upgraded,exercise%20began%20September%207th%20and%20ended%20September%2015th.]. Accessed 25 September 2020.
[4] United States Embassy of Cameroon. September 2017. "U.S.-Cameroon Demonstrate Preparedness in Public Health Emergency Management". [https://cm.usembassy.gov/u-s-cameroon-demonstrate-preparedness-public-health-emergency-management/]. Accessed 25 September 2020.
[6] Centers for Disease Control and Prevention (CDC). "CDC in Cameroon". [https://www.cdc.gov/globalhealth/countries/cameroon/pdf/Cameroon_factsheet.pdf]. Accessed 25 September 2020.
[7] Ministry of Public Health. May 2020. "Covid-19: ASAC and CARTE ROSE CEMAC support the Government in the response". [https://minsante.cm/site/?q=en/node/2253]. Accessed 25 September 2020.
[8] VOA News. July 2020. "Cameroon Citizens Raised $40M for COVID Relief, But Where is It?". [https://www.voanews.com/covid-19-pandemic/cameroon-citizens-raised-40m-covid-relief-where-it]. Accessed 28 September 2020.
[9] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[10] World Health Organization (WHO). "Cameroon". [https://www.who.int/countries/cmr/]. Accessed 15 November 2020.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 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 evidence of a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza. Cameroon has signed up to a joint initiative with other Central and West African countries to share epidemiological data with international health organisations: the Abuja Commitment on Public Health Issues. Cameroon was a signatory to the Abuja Commitment in 2010, which commits it to share information on cross-border public health issues with the World Health Organisation (WHO) and sub-regional health organisations to enable joint planning, coordination and timely response to disease outbreaks (going beyond influenza to include, for instance, neglected tropical diseases). [1] Under the Abuja Commitment, in 2016 and again in 2018 Cameroon participated in developing roadmaps for sub-regional collaboration and information-sharing on cholera in the Chad Basin area; [2] and it is one of the countries implementing the regional strategy for cholera in West and Central Africa, which involves sharing epidemiological data to target response and prevention activities in emergency and non-emergency situations. A publicly-available overview of the strategy notes that cross-border and regional interventions are targeted using shared information on high-risk populations, locales, periods and practices. For instance, epidemiological data is used to target water, sanitation and hygiene (WASH) development programmes, and molecular biology is used to understand cholera diffusion, all under a shared regional approach. [3] The Western and Central Africa Cholera Platform website outlines the steps involved in regional epidemiological collaboration. The platform brings together region-wide epidemiological data in maps of cholera hotspots, and publishes field epidemiology reports from individual countries. [4,5] Cameroon was also one of the Central African countries which operationalised the Africa Centres for Disease Control and Prevention's (Africa CDC) Regional Collaborating Centre (RCC) in Gabon in July 2017. This enables collaboration over surveillance of and emergency response to infectious diseases, but there is no evidence that Cameroon's involvement in the Africa CDC involves a commitment to share genetic data, epidemiological data, clinical specimens, and/or isolated specimens with other countries. [6,7,8,9] Cameroon is part of the One Health Central and Eastern Africa Network (OHCEA), the members of which collaborates over capacity building for disease control, but again there is no evidence that this involves a commitment to share genetic data, epidemiological data, clinical specimens, and/or isolated specimens. [10] There is no evidence of other national plans to share these from the websites of the health ministry, its Department of Pharmacy, Medication and Laboratories (DPML), the research ministry or its Institute of Medical Research and Herbal Medicine Studies (IMPM), the Cameroon Pasteur Centre, the livestock ministry or the National Veterinary Laboratory. [11,12,13,14,15,16,17]

[1] Health Ministers of Benin, Cameroon, Central African Republic, Chad, Equatorial Guinea, Niger and Nigeria. 18 Oct 2010. "Abuja Commitment on Public Health Issues." [https://plateformecholera.info/attachments/article/317/Abuja%20Commitment%202010%20(EN).pdf]. Accessed 28 September 2020.
[2] The West and Central Africa Cholera Platform. "Lake Chad Basin - the cross-border meeting of Ndjamena (June 2018)." [https://plateformecholera.info/index.php/coordination/workshop/542-lake-chad-basin-the-cross-border-meeting-of-ndjamena-june-2018]. Accessed 28 September 2020.
[3] The West and Central Africa Cholera Platform. May 2017. "Overview of the strategy to control and prevent cholera in West and Central Africa: The "Shield and Sword" concept." [https://www.plateformecholera.info/attachments/category/99/Brochure%20Strategie%20BCP%202017__may2017.pdf]. Accessed 28 September 2020.
[4] Cholera Platform. N.d. "Step 1: Identifying the cholera hotspots." [https://plateformecholera.info/index.php/strategy/cholera-hotspots]. Accessed 28 September 2020.
[5] Cholera Platform. N.d. "Step 2 and 3 Field investigations & Investment plans - Identifying programmatic response & proposing adequate solutions." [https://plateformecholera.info/index.php/strategy/field-investigation]. Accessed 28 September 2020.
[6] African Union. 2 Aug 2017. "Central Africa establishes the Africa Centres for Disease Control and Prevention Regional

Collaborating Centre to improve surveillance, preparedness and response to infectious and non-communicable diseases." [https://reliefweb.int/report/world/central-africa-establishes-africa-centres-disease-control-and-prevention-regional]. Accessed 28 September 2020.
[7] African Union/Africa Centers for Disease Control and Prevention. "Regional collaborating centres." [http://www.africacdc.org/rccs]. Accessed 28 September 2020.
[8] African Union/Africa Centers for Disease Control and Prevention. "Continental commitments." [http://www.africacdc.org/resources/continental-commitments]. Accessed 28 September 2020.
[9] African Union/Africa Centers for Disease Control and Prevention. "Surveillance and intelligence." [http://www.africacdc.org/resources/strategic-framework/strategic-framework/surveillance-and-disease-intelligence/detail]. Accessed 28 September 2020.
[10] One Health Central and Eastern Africa Network (OHCEA). N.d. "About us." [http://ohcea.org/index.php?option=com_content&view=article&id=31&Itemid=102]; and "Cameroon engages biomedical practitioners and academics on biorisk issues in the country." [http://ohcea.org/index.php?option=com_content&view=article&id=182:cameroon-engages-biomedical-practitioners-and-academics-on-biorisk-issues-in-the-country&catid=31&Itemid=617]. Accessed 28 September 2020.
[11] Ministry of Public Health. [http://www.minsante.cm/]. Accessed 28 September 2020.
[12] Department of Pharmacy, Medication and Laboratories (DPML). [https://dpml.cm/index.php/fr]. Accessed 28 September 2020.
[13] Ministry of Scientific Research and Innovation. [http://www.minresi.cm/]. Accessed 28 September 2020.
[14] Institute of Medical Research and Herbal Medicine Studies (IMPM). [http://www.impm-cm.org]. Accessed 28 September 2020.
[15] Cameroon Pasteur Centre (CPC). [http://www.pasteur-yaounde.org/index.php/fr]. Accessed 28 September 2020.
[16] Ministry of Livestock, Fisheries and Animal Industries. [http://www.minepia.gov.cm/]. Accessed 28 September 2020.
[17] Cameroon National Veterinary Laboratory (LANAVET). [http://www.lanavet.com]. Accessed 28 September 2020.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Cameroon has not shared samples in accordance with the PIP framework in the past two years. The World Health Organisation (WHO) has not reported any non-compliance in the past year by Cameroon, nor did a search for media articles on this produce any relevant results. [1]

[1] World Health Organisation. 2018. "Virus sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 28 September 2020.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Cameroon has not shared pandemic pathogen samples during an outbreak in the past two years. There is no suggestion from World Health Organisation (WHO) reports on the two outbreaks of notifiable diseases in 2018 - of cholera and monkeypox - that Cameroon's authorities failed to share pathogen samples. The WHO assisted with the responses to both outbreaks. [1,2] There is also no publically available evidence to suggest that Cameroon has failed to share pathogen samples during the COVID-19 pandemic and no other media reporting in the past two years to suggest that Cameroon has failed to share pathogen samples during any other outbreak.

[1] World Health Organisation (WHO). 14 Jun 2018. "Cholera - Cameroon." Disease Outbreak News. [https://www.who.int/csr/don/14-june-2018-cholera-cameroon/en/]. Accessed 25 September 2020.
[2] World Health Organisation (WHO). 4 Jun 2018. "Monkeypox - Cameroon." Disease Outbreak News. [https://www.who.int/csr/don/05-june-2018-monkeypox-cameroon/en/]. Accessed 25 September 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 25

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 0

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 4

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 1

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 0

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 1

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: 77.07

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: 0.43

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: 8.4

2014

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

According to the International Labor Organization (ILOSTAT), Cameroon's share of employment in the informal sector was 90.2%, as of 2014. [1] The World Bank reports Cameroon's share of employment in the informal sector at 84% in 2014. [2] No more recent data is available.

[1] International Labor Organization (ILOSTAT). "Country Profiles". [https://ilostat.ilo.org/data/country-profiles/]. Accessed 28 September 2020.
[2] The World Bank. "Informal Employment (% total of non-agricultural employement)". [https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=CM&name_desc=false&view=chart]. Accessed 28 September 2020.

6.2.3c

Coverage of social insurance programs (% of population)
Scored in quartiles (0-3, where 3=best)

Current Year Score: 0

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions
Input number

Current Year Score: 0

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.47

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: 0

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 56.97

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: -1.24

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 58.92

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: 660.5

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 2.72

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 9.3

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 11.4

2016

WHO

6.5.2 Access to potable water and sanitation

6.5.2a

Percentage of homes with access to at least basic water infrastructure

Input number

Current Year Score: 60.38

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 39.08

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: 7.96

2018

WHO Global Health Expenditure database

6.5.4 Trust in medical and health advice

6.5.4a

Trust medical and health advice from the government

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018