

Morocco

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

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

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

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

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

Current Year Score: 2

There is publicly available evidence that there is a national antimicrobial resistance (AMR) plan for the surveillance, detection, and reporting of priority AMR pathogens in Morocco.

The Ministry of Health of Morocco, supported by the World Health Organization (WHO), developed in 2016 the National Strategic Plan against AMR. The plan's strategic objectives include raising awareness, improving and developing skills of the medical staff in monitoring and surveillance, enhancing knowledge through research, mechanisms of controlling and preventing infections and spread of diseases, in addition to optimizing the use of antibiotics in the human and animal medicine. [1, 2] The national AMR plan addresses collecting, analyzing, and reporting data on AMR pathogens. [3]

The Joint External Evaluation report for Morocco was published in 2016 before the development of The National Strategic Plan against AMR. While the JEE notes the lack of a national AMR plan, it states that "Morocco has many positive approaches that indicate its ability to respond to AMR. These include several vertical programs that have laboratory capacity to diagnose AMR and a national protocol to ban the use of antibiotics for the growth of livestock by July 2017." [4]

[1] Benbachir, M. 31st March-2nd April 2017. "National Strategic Plan against AMR" (Plan stratégique national de lutte contre la résistance aux antibiotiques). Paper presented at the fifth National Congress SOMIPEV (Moroccan Society of Pediatric Infectiology and Vaccinology or Societe Marocaine d'Infectiologie Pédiatrique et de Vaccinologie), 31st March-2nd April 2017, Marrakech. [http://www.somipev.ma/congres/2017/resumes/10_M_Benbachir.pdf]. Accessed 7 February 2021.

[2] Ministry of Health. "Le Ministère de la Santé crée l'unité de coordination nationale et le comité technique pour la surveillance de la résistance aux antimicrobiens."

[<https://www.sante.gov.ma/Pages/communiqués.aspx?communiquelD=337>]. Accessed 7 February 2021.

[3] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017-3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[4] World Health Organization Library of National Action Plans. "National strategic plan for the prevention and control of antimicrobial resistance (Plan stratégique national de prévention et de contrôle de la Résistance aux Antimicrobiens)".

[<https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 7 February 2021.

1.1.1b

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

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

Current Year Score: 1

There is publicly available evidence that the national laboratory system in Morocco tests for some of the priority AMR pathogens.

According to the Joint External Evaluation (JEE) report for Morocco, published in 2016, the national laboratory system has sentinel sites that test for priority AMR pathogens without further elaboration on the pathogens tested for. [1]

The Pasteur Institute of Morocco tests for four of the 7+1 priority AMR pathogens: E. coli, K. pneumoniae, Salmonella, and N. gonorrhoea. [2] The Institute collaborates with the French National Reference Center of Escherichia on testing for coli, Shigella, and Salmonella (CNR), and works with the laboratory of microbiology CHU Casablanca for the fight against AMR. [3] Also, the Medical Unit of Bacteriology and Hospital Hygiene in the National Reference Laboratory in Morocco detects and tests for Mycobacterium tuberculosis. No further evidence is provided suggesting that the National Reference Laboratory tests for other AMR priority pathogens. [4]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] The Pasteur Institute of Morocco. 2016. "Catalog of Medical Biology Center" (Catalogue des prestations du Centre de Biologie Médicale). [<http://www.pasteur.ma/uploads/catAnalyses.pdf>]. Accessed 7 February 2021.

[3] The Pasteur Institute of Morocco. "Microbiology" (Microbiologie). [<http://www.pasteur.ma/microbiologie.php>]. Accessed 7 February 2021.

[4] The National Reference Laboratory. "Our Skills" (Nos compétences). [<http://www.lnr.ma/infectiologie/>]. Accessed 7 February 2021.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the government of Morocco conducts environmental detection or surveillance activities (e.g., in soil, waterways) for antimicrobial residues or antimicrobial resistance (AMR) organisms.

Neither the website of the Ministry of Health nor the website of the Secretariat of State at the Ministry of Energy, Mining, and Environment, which is responsible for sustainable development in Morocco, provide information suggesting that the country conducts environmental detection or surveillance activities for antimicrobial residues or AMR organisms. [1, 2]

The Ministry of Health of Morocco, supported by the WHO, developed in 2016 the National Strategic Plan against AMR. The plan's strategic objectives include raising awareness, improving and developing skills of the medical staff in monitoring and surveillance, enhancing knowledge through research, mechanisms of controlling and preventing infections and spread of diseases, in addition to optimizing the use of antibiotics in the human and animal medicine. [3, 4] The national AMR plan addresses collecting, analyzing, and reporting data on AMR pathogens. [5] The plan, nonetheless, does not provide information related to environmental detection or surveillance activities for antimicrobial residues or AMR organisms.

The Joint External Evaluation report for Morocco, published in 2016, does not include relevant information, neither does the World Health Organization's (WHO) report on global progress on addressing AMR. [6, 7]

- [1] Secretariat of State at the Ministry of Energy, Mining, and Environment. "Strategies and Programmes". [<http://www.environnement.gov.ma/fr/strategies-et-programmes>]. Accessed 7 February 2021.
- [2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.
- [3] Benbachir, M. 31st March-2nd April 2017. "National Strategic Plan against AMR" (Plan strategique national de lutte contre la resistance aux antibiotiques). Paper presented at the fifth National Congress SOMIPEV (Moroccan Society of Pediatric Infectiology and Vaccinology or Societe Marocaine d'Infectiologie Pediatrique et de Vaccinologie), 31st March-2nd April 2017, Marrakech. [http://www.somipev.ma/congres/2017/resumes/10_M_Benbachir.pdf]. Accessed 7 February 2021.
- [4] Ministry of Health. "Le Ministère de la Santé crée l'unité de coordination nationale et le comité technique pour la surveillance de la résistance aux antimicrobiens." [<https://www.sante.gov.ma/Pages/communiqués.aspx?communiquelD=337>]. Accessed 7 February 2021.
- [5] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.
- [6] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.
- [7] World Health Organization (WHO). 2018. "Monitoring Global Progress on Addressing Anti Microbial Resistance." [<http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1>]. Accessed 7 February 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 0

There is no publicly available evidence that Morocco has a national legislation or regulation in place requiring prescriptions for antibiotic use for humans.

Neither the website of the Ministry of Health nor the ministry's National Pharmaceutical Policy Report published in 2015, contain indication of national legislation or regulation requiring prescriptions for antibiotic use for humans. [1, 2] The newspaper "LesEco" states that pharmacists in Morocco sell antibiotics to patients without any prescriptions. [3] The Joint External Evaluation (JEE) report for Morocco, published in 2016, recommends developing a national policy on antibiotic use for humans, which in turn suggests the lack of such a plan or regulation. [4]

- [1] Ministry of Health of Morocco. "Regulations." (Reglementation). [<http://www.sante.gov.ma/Reglementation/Pages/default.aspx>]. Accessed 7 February 2021.
- [2] Ministry of Health of Morocco. 2015. "National Pharmaceutical Policy" (Politique Pharmaceutique Nationale). [<http://www.sante.gov.ma/Documents/2016/02/PPN-Fr-2015.pdf>]. Accessed 7 February 2021.
- [3] Saleheddine Lemaizi. 31 March 2018. "The dangerous addiction to antibiotics in Morocco" (Au Maroc, la dangereuse addiction aux antibiotiques). LesEco 1689. [<http://www.leseco.ma/decryptages/focus/64999-au-maroc-la-dangereuse-addiction-aux-antibiotiques.html>]. Accessed 7 February 2021.
- [4] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

1.1.2b

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

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

Current Year Score: 0

There is no publicly available evidence that there is national legislation or regulation in place requiring prescriptions for antibiotic use for animals in Morocco.

In 2015, the Ministry of Health organized the first 'global week to promote the good use of antibiotics' (1ere semaine mondiale pour un bon usage des antibiotiques), which aimed to encourage different actors within the health sector to fight against AMR by implementing regulation for good use of antibiotics for both humans and animals. [1] This implicitly suggests the lack of legislation or regulation that streamlines antibiotic use for animals or that requires prescriptions for antibiotics.

The Joint External Evaluation (JEE) for Morocco, published in 2016, does not refer to or mention any existing national legislation or regulation requiring prescriptions for antibiotic use for animals but indicates that the country committed to addressing AMR in the animal health sector. The same source states that "Morocco has many positive approaches that indicate its ability to respond to AMR" including "a national protocol to ban the use of antibiotics for the growth of livestock by July 2017." [2]

During the World Organization for Animal Health's (OIE) Global Conference on Antimicrobial Resistance held in Morocco on 29-31 October 2018, the National Office of Sanitary Security of Food Products (ONSSA) presented about the evolution of the governance of the veterinary drug in Morocco. However, there is no mention of national legislation or regulation in place requiring prescriptions for antibiotic use for animals is mentioned in their presentation or report. [3] The websites of the Ministry of Health and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not include further evidence. [4, 5]

[1] Ministry of Health. 16-22 November 2015. "Antibiotics: to handle with precaution" (antibiotiques: a manipuler avec precaution). Paper presented at The 1st World week for a good use of antibiotics (1ere semaine mondiale pour un bon usage des antibiotiques), 16-22 November 2015, Rabat.

[http://www.sante.gov.ma/Documents/2015/Bon%20usage%20ATB_H.pdf]. Accessed 7 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] The Pasteur Institute of Morocco. 2016. "Catalog of Medical Biology Center" (Catalogue des prestations du Centre de Biologie Médicale). [<http://www.pasteur.ma/uploads/catAnalyses.pdf>]. Accessed 7 February 2021.

[3] The Pasteur Institute of Morocco. "Microbiology" (Microbiologie). [<http://www.pasteur.ma/microbiologie.php>]. Accessed 7 February 2021.

[3] The National Office of Sanitary Security of Food Products (ONSSA). 2018. "Evolution of the Governance of the Veterinary Drug in Morocco" (Evolution de la gouvernance du medicament veterinaire au maroc). [http://www.oie.int/amr2018/wp-content/uploads/2018/11/S7_5_KhadijaldSidiYahia.pdf]. Accessed 7 February 2021.

[4] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.

[5] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7

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1.2 ZONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a national legislation, plans, or equivalent strategy documents on zoonotic disease in Morocco. According to the Joint External Evaluation (JEE) report for Morocco, published in 2016, "the national food laboratory (ONSAA) and the Ministry of Health have signed a formal memorandum of understanding (MOU) and developed joint policies for rabies; similar sectoral coordination is desired for other zoonoses such as [tuberculosis] TB and brucellosis." [1] However, the MOU is not publicly available and there is no evidence that it is in use. The websites of the Ministry of Health and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not include evidence on documents regarding zoonotic diseases in the country. [2, 3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Morocco has a national legislation, plans or equivalent strategy document(s) which includes measures for risk identification and reduction for zoonotic disease spillover events from animals to humans.

There is no mention of a plan or equivalent strategy that would address risk identification and reduction for spillover events in the Joint External Evaluation (JEE) report for Morocco, published in 2016. [1] There is no publicly available evidence of relevant strategies on the websites for the Ministry of Health or the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [2,3] During the World Organization for Animal Health's (OIE) Global Conference on Antimicrobial Resistance held in Morocco on 29-31 October 2018, the National Office of Sanitary Security of Food Products (ONSSA) presented about the evolution of the governance of the veterinary drug in Morocco. There was no mention of zoonotic disease spillover events from animals to humans in the presentation or report. [4] There is no other mention of spillover event legislation or similar on the Pasteur Institute website. [5] No other articles or studies were found that would suggest that Morocco has a plan or strategy to address risks in the case of zoonotic disease spillover events.

- [1] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 21 February 2021.
- [2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 21 February 2021.
- [3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 21 February 2021.
- [4] The Pasteur Institute of Morocco. 2014. "Rabies, a difficult disease to fight in Morocco." (La rage, cette maladie difficile a combattre au Maroc). Pasteur letter 3:1. [http://www.pasteur.ma/uploads/Lettre_pasteur3.pdf]. Accessed 21 February 2021.
- [5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 21 February 2021.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern in Morocco.

According to the Joint External Evaluation for Morocco, published in 2016, active surveillance programs are implemented for major zoonotic diseases such as tuberculosis, brucellosis, and avian influenza, in addition to other zoonotic diseases. There are also specific procedures, activities, and lines of reporting for such surveillance activities in the country. However, JEE does not provide evidence of national control plans for zoonotic pathogens of public health concern. [1]

The Pasteur Institute of Morocco's information letter published in 2014 indicates that there is specific and valid regulation for monitoring and surveillance of rabies in the country and that there is a national interdepartmental program involving the Ministry of Health, Agriculture, and the Ministry of the Interior on this issue. Nonetheless, there is no evidence of control plans for other diseases. [2]

No further evidence is found on national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern through the websites of the Ministry of Health or the website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [3, 4]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.
- [2] The Pasteur Institute of Morocco. 2014. "Rabies, a difficult disease to fight in Morocco." (La rage, cette maladie difficile a combattre au Maroc). Pasteur letter 3:1. [http://www.pasteur.ma/uploads/Lettre_pasteur3.pdf]. Accessed 7 February 2021.
- [3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.
- [4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries in Morocco.

Morocco has a National Interdepartmental Committee dedicated to rabies, the most common zoonotic disease in the country. The committee functions across the Ministry of Health and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and the Ministry of Interior. [1] Also, according to the Pasteur Institute of Morocco, there is a specific and valid regulation for rabies and a national interdepartmental program involving both the Ministry of Health, Agriculture and the Ministry of the Interior although no further information is provided on the nature of the collaboration. [2] However, besides the rabies ad hoc committee, there is no evidence of a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries in Morocco on the website of the Ministry of Health or the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [3, 4]

[1] Ministry of Health of Morocco. 2018. "National Program against rabies." (Programme national de lutte contre la rage). [<http://www.sante.gov.ma/Documents/2018/09/Rage%20JMLR%202018.pdf>]. Accessed 7 February 2021.

[2] The Pasteur Institute of Morocco. 2014. "Rabies, a difficult disease to fight in Morocco" (La rage, cette maladie difficile a combattre au Maroc). Pasteur letter 3:1. [http://www.pasteur.ma/uploads/Lettre_pasteur3.pdf]. Accessed 7 February 2021.

[3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 March 2021.

[4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 March 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016, does not include indication of a national mechanism for livestock owners to conduct and report on disease surveillance to a central government agency. [1] No evidence is found on such a mechanism through the website of the Ministry of Health including the "e-service" page; [2, 3] or through the website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [4]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.

[3] Ministry of Health. "eService". [<http://www.sante.gov.ma/eservice/applicationdrc/Pages/default.aspx>]. Accessed 7 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulations that safeguard the confidentiality of information generated through surveillance activities for animals (for owners) in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016, does not include indication of legislation and/or regulations safeguarding the confidentiality of information generated through surveillance activities for animalowners. [3] The websites of the Ministry of Health and Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not provide relevant evidence. [2, 3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.

[3] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that Morocco conducts surveillance of zoonotic disease in wildlife (e.g., wild animals, insects, other disease vectors). According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the Ministry of Health and the veterinary authorities conduct multiple surveillance activities for zoonotic diseases for both wild and domestic animals. The JEE further suggests that the coordination of joint activities could be improved as the sharing of epidemiological data between is effective during outbreaks, but not during routine operations. [1] The JEE nonetheless, does not elaborate on the method of surveillance be it through sampling or monitoring certain diseases. The websites of the Ministry of Health and Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not provide further evidence. [2,3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.

[3] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 5.48

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 1.81

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of national plan on zoonotic disease or other legislation, regulations, or plans that include mechanisms for working with the private sector in controlling or responding to zoonoses in Morocco. The Joint External Evaluation (JEE) report, published in 2016, mentions that more than 600 veterinarians from the private sector were contracted by the National Office for Health Security of Food Products (ONSSA) for public health and disease control missions. [1] According to EpiReg-Maghreb, Morocco has regulations that formally include the private veterinarians although their role is limited to health surveillance and control, as well as announcing endemic and emerging diseases to the local public sector. [2] No further evidence is provided on mechanisms for working with the private sector in controlling or responding to zoonoses in Morocco through the websites of the Ministry of Health and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [3, 4]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.
- [2] EpiReg-Maghreb. 2009. "Structure and operation" (Structuration et fonctionnement). [http://epireg-maghreb.cirad.fr/presentation_generale/du_maroc/structuration_et_fonctionnement]. Accessed 7 February 2021.
- [3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.
- [4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a record, updated within the past five years, of the facilities in which especially dangerous pathogens and toxins are stored or processed, including details on inventories and inventory management systems of those facilities in Morocco.

The Joint External Evaluation for Morocco, published in 2016, recommends identifying up-to-date records and pathogen inventories in facilities that store or process dangerous pathogens and toxins. Regarding the inventory management systems in laboratories, while generally, each laboratory has a separate inventory of pathogens on which they work, "there is no national inventory of pathogens and mapping according to their actual storage status. [1]

The websites of the Ministry of Health, the Pasteur Institute, the National Reference Laboratory, and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not include further evidence; [2, 3, 4, 5] neither does the VERTIC database for Morocco. [6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to a record of the facilities in which especially dangerous pathogens and toxins are stored or processed. [7]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 7 February 2021.
- [2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 7 February 2021.
- [3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 7 February 2021.
- [4] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 7 February 2021.
- [5] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 7 February 2021.
- [6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 08 February 2021.
- [7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc->

ecbm.unog.ch/state/morocco]. Accessed 7 February 2021.

1.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco has in place legislation and/or regulations related to biosecurity that 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.

The Joint External Evaluation (JEE) for Morocco, published in June 2016, states that the country does not have national biosafety or biosecurity legislation, regulation, or guidelines. [1] Although the Pasteur Institute established a biosecurity committee to implement a biohazard management system in 2015, including procedures, rules, and instructions, there is no mention on the institute's website of legislation or regulations related to biosecurity in the country. [2]

The Moroccan Biosecurity Association (MOBSA) aims at building the capacity in biological risks management, developing training frameworks for technicians specialized in the fields of safety and biosecurity, raising awareness about the dangers of misusing dangerous pathogens in public and private laboratories including laboratories affiliated with universities. The Association further seeks to develop a code of conduct in research laboratories in research on disease prevention and control. The MOBSA's website, however, does not include information on any legislation and/or regulations related to biosecurity addressing requirements of facilities in which especially dangerous pathogens and toxins are stored or processed. [3]

There is no evidence on such legislation or regulation through the websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research; [4, 5, 6] neither there is evidence through the VERTIC database for Morocco. [7] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to biosafety regulation or legislation. [8]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 8 February 2021.

[2] The Pasteur Institute of Morocco. "Biological risk management" (Gestion des risques biologiques). [<http://www.pasteur.ma/management-des-biorisques.php>]. Accessed 8 February 2021.

[3] Moroccan Biosecurity Association (MOBSA).

[http://www.mobsa.org/index.php?option=com_content&view=article&id=31&Itemid=39]. Accessed 8 February 2021.

[4] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[5] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 February 2021.

[6] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[7] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 08 February 2021.

[8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 7 February 2021.

1.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations in Morocco.

The Joint External Evaluation (JEE) for Morocco, published in June 2016, states that the country does not have national biosafety or biosecurity legislation, regulation, or guidelines. [1] Hence, there is no mention of an agency in the country responsible for biosafety regulations.

Although the Pasteur Institute established a biosecurity committee to implement a biohazard management system in 2015, including procedures, rules, and instructions, there is no mention on the institute's website of legislation or regulations related to biosecurity in the country. [2] The Moroccan Biosecurity Association (MOBSA) aims at building the capacity in biological risks management, developing training frameworks for technicians specialized in the fields of safety and biosecurity, raising awareness about the dangers of misusing dangerous pathogens in public and private laboratories including laboratories affiliated with universities. The Association further seeks to develop a code of conduct in research laboratories in research on disease prevention and control. The MOBSA's website, however, does not include information on any legislation and/or regulations related to biosecurity addressing requirements of facilities in which especially dangerous pathogens and toxins are stored or processed. [3]

There is no evidence on such legislation or regulation through the websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research; [4, 5, 6] neither there is evidence through the VERTIC database for Morocco. [7] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to biosafety regulation or legislation. [8]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 8 February 2021.

[2] The Pasteur Institute of Morocco. "Biological risk management" (Gestion des risques biologiques). [<http://www.pasteur.ma/management-des-biorisques.php>]. Accessed 8 February 2021.

[3] Moroccan Biosecurity Association (MOBSA). [http://www.mobsa.org/index.php?option=com_content&view=article&id=31&Itemid=39]. Accessed 8 February 2021.

[4] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[5] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 February 2021.

[6] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[7] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 08 February 2021.

[8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 7 February 2021.

ecbm.unog.ch/state/morocco]. Accessed 7 February 2021.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco took action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities.

According to the Joint External Evaluation for Morocco, published in 2016, the National Institute of Hygiene (INH) carried out an inventory and risk assessment, and both the Pasteur Institute and the virology laboratory at Mohammed V University Hospital also embarked on process. However, the JEE does not elaborate on whether this assessment included consolidation of inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [1]

The websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence; [2, 3, 4] neither does the VERTIC database for Morocco. [5] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to any action taken to consolidate inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 8 February 2021.

[2] Ministry of Health of Morocco. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 8 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [http://www.agriculture.gov.ma]. Accessed 8 February 2021.

[4] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [https://www.men.gov.ma/en/Pages/Accueil.aspx]. Accessed 8 February 2021.

[5] VERTIC Database. "Morocco." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/]. Accessed 08 February 2021.

[6] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [https://bwc-ecbm.unog.ch/state/morocco]. Accessed 7 February 2021.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for Ebola in Morocco, which would preclude culturing a live pathogen.

The Ministry of Health conducts PCR-based diagnostic testing for the Ebola virus. [1] The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country is proficient in diagnostic techniques such as PCR testing in selected laboratories, where tools and resources are in place to support diagnostics that preclude culturing dangerous pathogens. [2] No further evidence is provided through the websites of the Ministry of Health, the National Reference Laboratory, or the Ministry of Agriculture, Fisheries, Rural Development, Water, and Forests. [3, 4, 5]

[1] The Ministry of Health of Morocco. October 2014. "Ebola Virus Disease Surveillance and Preparedness Plan." (Plan de veille et de préparation à la riposte contre la Maladie à Virus Ebola).

[<http://www.sante.gov.ma/Documents/EBOLA/leplan.pdf>]. Accessed 8 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 8 February 2021.

[3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[4] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 8 February 2021.

[5] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 February 2021.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Morocco requires biosecurity training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, there is no systematic national training program for all laboratories and their staff in the country, but there is nonetheless, training on biosecurity carried out at some institutes such as the National Institute of Hygiene (INH) that sets up such training through international projects. [1]

The JEE adds that "a national training program on biosafety and biosecurity should be developed and implemented;" which further suggests the lack of a standard biosecurity training program. [1]

Since 2016, the Committee of Biosecurity and Biosafety, established by the Pasteur Institute of Morocco in December 2015, implements biosecurity training for personnel working with especially dangerous pathogens. The first training program was in February 2016 under the name "Biosafety and Biosecurity at the Pasteur Institute of Morocco: A Shared Responsibility and an Obligation for Everyone." While another train-the-trainer program was implemented solely on biosecurity in 2016 called "Biosecurity Awareness Course." [2] There is no evidence, however, that these pieces of training use a standardized or a specific required approach.

The websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further

evidence; [3, 4, 5] neither does the VERTIC database for Morocco. [6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to biosecurity training in the country. [7]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 8 February 2021.

[2] The Pasteur Institute of Morocco. 2016. "Annual Report." (Rapport annuel). [<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 8 February 2021.

[3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 February 2021.

[5] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 08 February 2021.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 7 February 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that there are 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 in Morocco.

The Ministry of Health's Epidemiological Bulletins do not include information on regulations or licensing conditions. [1] The Ministry of Health, through the Pasteur Institute which has a committee that is responsible for biosafety and biosecurity in Morocco since 2015, published regulations on handling dangerous products; however, the regulations do not touch upon drug testing, background checks, and psychological or mental fitness checks on security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential. [2]

The websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence; [3, 4, 5] neither does the VERTIC database for Morocco. [6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to regulations or licensing conditions regarding personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential. [7]

- [1] Ministry of Health. "Epidemiological Bulletin" (Bulletin Epidemiologique). [http://www.sante.gov.ma/Publications/Pages/Bullten_%C3%89pid%C3%A9miologique.aspx]. Accessed 7 February 2021.
- [2] The Pasteur Institute of Morocco. "Biosafety Committee, Bio-Safety and handling of dangerous products- Internal rules" (Comité de biosécurité, bio-sûreté et manipulation des produits dangereux- Règlement Interne). [<http://www.pasteur.ma/uploads/Reglement-Interne-Comite-Biosecurite.pdf>]. Accessed 7 February 2021.
- [3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 8 February 2021.
- [4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 8 February 2021.
- [5] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.
- [6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 08 February 2021.
- [7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 7 February 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that Morocco has publicly available information on national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B).

Transport of infectious substances in the country follows the regulations of the European agreement on International Carriage of Dangerous Goods by Road (ADR). [1] ADR includes specific rules and instructions on the transport of Categories A and B infectious substances. [2] The Joint External Evaluation (JEE) for Morocco, published in 2016, notes that international transport regulations are followed on the country by personnel who are regularly trained in public laboratories on the transport of infectious substances according to United Nations regulations. [3]

The websites of the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence; [4, 5, 6] neither does the VERTIC database for Morocco. [7] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to regulations on the safe and secure transport of infectious substances (specifically including Categories A and B). [8]

- [1] UNECE. "Country information (Competent Authorities, Notifications)". [https://www.unece.org/trans/danger/publi/adr/country-info_e.html]. Accessed 10 February 2021.
- [2] United Nations. 2016. "The European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)." [http://www.unece.org/fileadmin/DAM/trans/danger/publi/adr/adr2017/ADR2017E_web.pdf]. Accessed 10 February 2021.
- [3] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3->

eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 10 February 2021.

[4] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[5] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[6] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[7] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulations in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential in Morocco.

The websites of the Ministry of Health; the Ministry of Agriculture; the Ministry of National Education, Vocational Training, Higher Education and Scientific Research; or the Ministry of Justice do not include evidence of legislation and/or regulations to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential in Morocco. [1, 2, 3, 4] Neither does the VERTIC database for Morocco. [5]

The Specific Import and Export Restrictions of the Customs Administration and Indirect Taxes, published in 2009, do not include information relevant to regulations to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens. [6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to such regulations in the country. [7]

[1] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[2] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[3]] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[4] Ministry of Justice. [<http://adala.justice.gov.ma/AR/home.aspx>]. Accessed 10 February 2021.

[5] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[6] Customs Administration and Indirect Taxes. "Specific Import and Export Restrictions". [<http://www.douane.gov.ma/dms/loadDocument?documentId=30835&applic>]. Accessed 14 November 2018.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence of national biosafety legislation and/or regulations in Morocco.

According to the Pasteur Institute of Morocco, the biosafety and hazardous materials management committee, established in 2015, to comply with the laws and regulations of biosecurity and hazardous materials management. [1] However, there is no further elaboration on these laws and regulations and they do not seem to be publicly available. The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country does not have a national biosafety law or regulations in place, and further recommends implementing a national legal framework for biosafety and biosecurity. [2]

The Moroccan Biosafety Association website does not include any laws or regulations on biosafety; [3] neither does the VERTIC database for Morocco. [4] The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence on national biosafety regulations. [5, 6, 7, 8] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to biosafety regulations. [9]

[1] The Pasteur Institute of Morocco. "Biological risk management" (Gestion des risques biologiques).

[<http://www.pasteur.ma/management-des-biorisques.php>]. Accessed 10 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[3] The Moroccan Biosafety Association. "Texts of Law" (Textes de loi).

[http://www.mobsa.org/index.php?option=com_content&view=article&id=21&Itemid=31]. Accessed 10 February 2021.

[4] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 10 February 2021.

[6] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[7] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[8] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[9] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of an established agency responsible for the enforcement of biosafety legislation and regulations.

According to the Pasteur Institute of Morocco, the biosafety and hazardous materials management committee, established in 2015, to comply with the laws and regulations of biosecurity and hazardous materials management. [1] However, there is no further elaboration on these laws and regulations and they do not seem to be publicly available.

The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country does not have a national biosafety law or regulations in place, and further recommends implementing a national legal framework for biosafety and biosecurity; hence, there is no mention of an agency responsible for the enforcement of biosafety regulations.[2]

The Moroccan Biosafety Association website does not include any laws or regulations on biosafety; [3] neither does the VERTIC database for Morocco. [4] The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence on national biosafety regulations. [5, 6, 7, 8] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to biosafety regulations. [9]

[1] The Pasteur Institute of Morocco. "Biological risk management" (Gestion des risques biologiques).

[<http://www.pasteur.ma/management-des-biorisques.php>]. Accessed 10 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[3] The Moroccan Biosafety Association. "Texts of Law" (Textes de loi).

[http://www.mobsa.org/index.php?option=com_content&view=article&id=21&Itemid=31]. Accessed 10 February 2021.

[4] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 10 February 2021.

[6] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[7] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[8] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[9] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco requires biosafety training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential.

The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the "training in biosafety and biosecurity is being carried out at some institutes, but no systematic national training programmes are available for all laboratories and their staff". [1]

In 2016, the Committee of Biosecurity and Biosafety, established by the Pasteur Institute of Morocco, began implementing biosecurity and biosafety training for personnel working with especially dangerous pathogens. The first training program entitled "Biosafety and Biosecurity at the Pasteur Institute of Morocco: A Shared Responsibility and an Obligation for Everyone" was carried out in February 2016. [2] Similarly, on 28 September 2017, the Biological Risk Management Committee organized a training workshop in collaboration with the Biosafety Officer of the Pasteur Institute of Morocco and Institut Robert-Koch (RKI) Germany. [3] However, it remains unclear whether these pieces of training are a national requirement or whether they follow a standardized approach.

The VERTIC database for Morocco does not include evidence of required biosafety training. [4] The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide further evidence on required biosafety training for personnel working in facilities housing or working with especially dangerous pathogens with pandemic potential. [5, 6, 7, 8] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to this issue. [9]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[2] The Pasteur Institute of Morocco. 2016. "Annual Report" (Rapport annuel). [<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 10 February 2021.

[3] The Pasteur Institute of Morocco. 28 September 2017. "CWA Training". [<http://www.pasteur.ma/uploads/CWACourse.doc>]. Accessed 10 February 2021.

[4] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 10 February 2021.

[6] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[7] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[8] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[9] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Morocco has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research.

The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide evidence suggesting that Morocco 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. [1, 2, 3, 4] Neither the Joint External Evaluation (JEE) for Morocco, published in 2016, nor the VERTIC database for Morocco does not include evidence of such assessments conducted in the country. [5, 6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to this issue. [7]

[1] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 10 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[4] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[5] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research in Morocco. The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide evidence of legislation and/or regulation requiring oversight of research with especially dangerous pathogens and/or other dual-use research. [1, 2, 3, 4] Neither the Joint External Evaluation (JEE) for Morocco, published in 2016, nor the VERTIC database for Morocco does not include evidence of such legislation or regulation in the country. [5, 6] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to this issue. [7]

[1] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 10 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

[4] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

[5] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[6] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an agency responsible for oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research.

Although the Laboratory of Medical Virology (LVM), which falls under the Pasteur Institute of Morocco, is a national reference laboratory for handling dangerous viruses, dual-use research does not fall under its scope. [1]

The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide evidence of legislation and/or regulation requiring oversight of research with especially dangerous pathogens and/or other dual-use research; hence, there is no mention of an agency to oversee such regulation and/or legislation. [2, 3, 4, 5]

Neither the Joint External Evaluation (JEE) for Morocco, published in 2016 nor the VERTIC database for Morocco does not

include evidence of agency to oversee research with especially dangerous pathogens in the country. [6, 7] Morocco submitted reports to the Confidence Building Measures under the Biological Weapons Convention; only the 2019 report is publicly available and it does not contain information relevant to this issue. [8] Morocco has submitted Confidence Building Measures reports under the Biological Weapons Convention. Only the 2019 report is publicly accessible; it does not contain relevant information. [9]

- [1] Imane Rim El Fala RBOUB. 2011. "The Medical Virology Laboratory of the Pasteur Institute of Morocco: a platform for advanced and high security equipment for diagnosis, research, and Virological analysis." (Le laboratoire de Virologie Médicale de l'Institut Pasteur du Maroc : une plateforme de pointe et un équipement de haute sécurité pour le diagnostic, la recherche et l'analyse virologique). [https://www.gazettelabo.info/archives/M54/page%202.pdf]. Accessed 10 February 2021.
- [2] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 10 February 2021.
- [3] Ministry of Health of Morocco. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 10 February 2021.
- [4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [http://www.agriculture.gov.ma]. Accessed 10 February 2021.
- [5] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [https://www.men.gov.ma/en/Pages/Accueil.aspx]. Accessed 8 February 2021.
- [6] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 10 February 2021.
- [7] VERTIC Database. "Morocco." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/]. Accessed 10 February 2021.
- [8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [https://bwc-ecbm.unog.ch/state/morocco]. Accessed 10 February 2021.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulation requiring the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold. The biosecurity in the country that are publicly available only address waste management and do not include genetically modified organisms or synthetic DNA legislation. [1] The websites of the Pasteur Institute of Morocco, the Ministry of Health, Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, and Ministry of National Education, Vocational Training, Higher Education, and Scientific Research do not provide evidence of legislation and/or regulation requiring screening of synthesized DNA before it is sold. [2, 3, 4, 5] Neither the Joint External Evaluation (JEE) for Morocco, published in 2016, nor the VERTIC database for Morocco does not include evidence of such legislation and/or regulation. [6, 7] Morocco has submitted Confidence Building Measures reports under the Biological Weapons Convention. Only the 2019 report is publicly accessible; it does not contain information relevant to screening of synthesized DNA against lists of known pathogens and toxins before it is sold [8]

- [1] The Moroccan Biosecurity Association. "Texts of law" (Textes de loi). [http://www.mobsa.org/index.php?option=com_content&view=article&id=21&Itemid=31]. Accessed 10 February 2021.
- [2] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 10 February 2021.

- [3] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.
- [4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.
- [5] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.
- [6] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.
- [7] VERTIC Database. "Morocco." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/m/>]. Accessed 10 February 2021.
- [8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Morocco". [<https://bwc-ecbm.unog.ch/state/morocco>]. Accessed 10 February 2021.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 2

2019

World Health Organization

1.6.1b

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

Yes = 1, No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 1

There is publicly available evidence that the national laboratory system has the capacity to conduct diagnostic tests for at least 5 of the 10 WHO-defined core tests although the test names are not explicitly mentioned. The Joint External Evaluation (JEE) for Morocco, published in 2016, states that "the laboratory systems in place can conduct at least 5 of the 10 core tests" defined by the World Health Organization (WHO) including HIV, tuberculosis, influenza, typhoid, and malaria. The JEE adds that the National Influenza Centre at the National Institute of Hygiene (INH) can also test for polio without elaborating on whether this includes the virus culture test. [1] Neither the website of the Ministry of Health nor the Cooperation strategy OMS-Morocco 2017-2021 or the website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests include further evidence on the country's capacity to detect for the WHO-identified core tests. [2, 3, 4]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 10 February 2021.

[3] World Health Organization (WHO). 2016. "Cooperation strategy OMS-Morocco 2017-2021." (Cooperation strategique OMS-Maroc 2017-2021).

[http://apps.who.int/iris/bitstream/handle/10665/254588/CCS_Maroc_2016_fr_19364.pdf?sequence=5]. Accessed 10 February 2021.

[4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 10 February 2021.

2.1.1b

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

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

Current Year Score: 0

There is no evidence of a national plan, strategy, or similar document for conducting testing during a public health emergency, which includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing.

The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the laboratory systems in the country have the capacity to detect for at least 5 of the 10 core tests defined by the World Health Organization (WHO) including HIV, tuberculosis, influenza, typhoid, and malaria. The JEE adds that the National Influenza Centre at the National Institute of Hygiene (INH) can also test for polio without elaborating on whether this includes the virus culture test. [1] There is no mention, however, that a strategy or similar document exists. The JEE scores the section "National Laboratory System" a '4', meaning there is demonstrated capacity, however, it also notes that although testing is available for novel pathogens, "there is a need for better coordination among and between laboratories of the health sector". [1]

Neither the website of the Ministry of Health nor the Cooperation strategy OMS-Morocco 2017-2021 or the website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests include further evidence of a national plan for conducting testing during a public health emergency. [2, 3, 4]

[1] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 21 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 21 February 2021.

[3] World Health Organisation (WHO). 2016. "Cooperation strategy OMS-Morocco 2017-2021." (Cooperation strategique OMS-Maroc 2017-2021).

[http://apps.who.int/iris/bitstream/handle/10665/254588/CCS_Maroc_2016_fr_19364.pdf?sequence=5]. Accessed 21 February 2021.

[4] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 21 February 2021.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of a national laboratory that serves as a reference facility which is accredited in Morocco. The Moroccan National Reference Laboratory (Laboratoire National de Reference) is accredited by the International Organization for Standardization (ISO)15189 on quality and competence. [1, 2]

[1] The National Reference Laboratory (LNR). "Our quality assurance policy" (Notre politique assurance qualite). [<http://www.lnr.ma/politique-assurance-qualite/>]. Accessed 10 February 2021.

[2] International Organization for Standardization. "ISO 15189:2012". [<https://www.iso.org/standard/56115.html>]. Accessed 10 February 2021.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of a national laboratory that serves as a reference facility which is subject to external quality assurance review in Morocco. The Moroccan National Reference Laboratory (Laboratoire National de Reference) is accredited by the International Organization for Standardization (ISO) 15189 on quality and competence; [1, 2] noting that ISO 15189 certification requires external quality assurance reviews. [3]

[1] The National Reference Laboratory (LNR). "Our quality assurance policy" (Notre politique assurance qualite). [<http://www.lnr.ma/politique-assurance-qualite/>]. Accessed 10 February 2021.

[2] International Organization for Standardization. "ISO 15189:2012". [<https://www.iso.org/standard/56115.html>]. Accessed 10 February 2021.

[3] World Health Organization. "Content Sheet 10-1: Overview of External Quality Assessment (EQA)". [http://www.who.int/ihr/training/laboratory_quality/10_b_eqa_contents.pdf]. Accessed 10 February 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of a nationwide specimen transport system in Morocco.

The Joint External Evaluation (JEE) for Morocco, states that a specimen transportation system exists in Morocco with a demonstrated capacity with a score of four out of five for the indicator of specimen referral and transport system. The system transports HIV, TB, and malaria specimens as needed. Such specimens can be transported to referral laboratories in case of emergency. [1]

In 2016, the Ministry of Health in collaboration with the World Health Organization (WHO), published a report about the public health laboratories system in Morocco. The report states that the Global Fund collaborates with an authorized transporter to transport specimens of influenza, HIV, TB, polio, and rotavirus in the country. Although according to the same source, the system works well for emergency cases, it is expensive. Therefore, the report recommends setting up another national and efficient transport system for specimens. [2]

There is no further evidence of a national specimen transport system through the websites of the Ministry of Health; the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests; the Ministry of Equipment, Transport, Logistics, and Water; or The National Reference Laboratory (LNR). [3, 4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[2] Ministry of Health of Morocco. 2016. "Evaluation of the system of public health laboratories in Morocco" (Evaluation du systeme des laboratoires de la sante publique au Maroc). [https://pharmacie.ma/uploads/pdfs/Rapport-Evaluation-LABO-_.pdf]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[5] Ministry of Equipment, Transport, Logistics and Water. [<http://www.equipement.gov.ma/en/Pages/home.aspx>]. Accessed 11 February 2021.

[6] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

[5]

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence of a plan in place in Morocco to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. There is no evidence of such a plan or any mention of authorizing laboratories in the Joint External Evaluation (JEE) report for Morocco, published in 2016. [1] There is no other evidence of authorizing or licensing laboratories to supplement the national public health laboratory system capacity on the websites of the Ministry of Health or the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [2,3] During the World Organization for Animal Health's (OIE) Global Conference on Antimicrobial Resistance held in Morocco on 29-31 October 2018, the National Office of Sanitary Security of Food Products (ONSSA) presented about the evolution of the governance of the veterinary drug in Morocco. There was no mention of rapidly authorizing or licensing laboratories in the presentation or report. [4] There is no other mention of authorizing laboratories on the Pasteur Institute website. [5] No other articles or studies were found that would suggest that Morocco has a system to rapidly authorize or license laboratories.

[1] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 21 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 21 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 21 February 2021.

[4] The Pasteur Institute of Morocco. 2014. "Rabies, a difficult disease to fight in Morocco." (La rage, cette maladie difficile a combattre au Maroc). Pasteur letter 3:1. [http://www.pasteur.ma/uploads/Lettre_pasteur3.pdf]. Accessed 21 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 21 February 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 0

There is no publicly available evidence that Morocco is conducting ongoing event-based surveillance and analysis for infectious disease. According to the Joint External Evaluation (JEE) for Morocco, published in 2016, Morocco has an indicator-based surveillance system which includes event-based surveillance to detect public health threats. The JEE adds that the country has the capacity to implement event-based surveillance systematically, but does not mention that event-based surveillance and analysis is ongoing. [1] No further evidence on ongoing event-based surveillance for infectious diseases is publicly available through the websites of the Ministry of Health, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Pasteur Institute, or the National Reference Laboratory. [2, 3, 4, 5]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 10 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[5] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) within the last two years. There is no evidence of reporting a potential PHEIC through the Ministry of Health website, WHO Disease Outbreak News website for the years 2020, 2019, or 2018. [1, 2 ,3 ,4] According to WHO Disease Outbreak News, the last time the country reported an outbreak was in 2003 for a human influenza epidemic that spread to more countries in the northern hemisphere. [5] There is no evidence that Covid-19 was reported as a PHEIC to the WHO.

[1] Ministry of Health of Morocco. "Epidemiological bulletin" (Bulletin epidemiologique).

[http://www.sante.gov.ma/Publications/Pages/Bullten_%C3%89pid%C3%A9miologique.aspx]. Accessed 11 February 2021.

[2] World Health Organization (WHO). 2020. "Emergencies preparedness, response for 2020".

[<https://www.who.int/csr/don/archive/year/2020/en/>]. Accessed 11 February 2021.

[3] World Health Organization (WHO). 2019. "Emergencies preparedness, response for 2019".

[<https://www.who.int/csr/don/archive/year/2019/en/>]. Accessed 11 February 2021.

[3] World Health Organization (WHO). 2018. "Emergencies preparedness, response for 2018".

[<https://www.who.int/csr/don/archive/year/2018/en/>]. Accessed 11 February 2021.

[4] World Health Organization (WHO). "Emergencies preparedness, response for Morocco".

[<http://www.who.int/csr/don/archive/country/mar/en/>]. Accessed 11 February 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Moroccan government operates an electronic reporting surveillance system at both the national and sub-national levels.

The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country is developing an interoperable, interconnected, electronic real-time reporting system, for public health/veterinary systems. [1] However, to date, there is no evidence that this system is operational. According to the same source, a legal framework is in place for mandatory reporting of nationally notifiable diseases. [1]

The last time the Ministry of Health published a report about the evaluation of core public health functions in Morocco was in January 2016. This report mentioned that one of their challenges is to implement an interoperable, interconnected, electronic real-time reporting system. [2] There is no further evidence of an operational electronic reporting surveillance system at both the national and the sub-national level through the websites of the Ministry of Health; the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests; the Ministry of Equipment, Transport, Logistics and Water; or The National Reference Laboratory (LNR). [3, 4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[2] Ministry of Health. January 2016. "The evaluation of core public health functions in Morocco." (evaluation des fonctions essentielles de sante publique). [<http://www.sante.gov.ma/Documents/2016/02/3%20Rapport%20Evaluation%20FESP.pdf>]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[5] Ministry of Equipment, Transport, Logistics and Water. [<http://www.equipement.gov.ma/en/Pages/home.aspx>]. Accessed 11 February 2021.

[6] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is not a publicly available evidence suggesting that the electronic reporting surveillance system collect ongoing or real-time laboratory data. The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country is developing an interoperable, interconnected, electronic real-time reporting system, for public health/veterinary systems. [1] However, to date, there is no evidence that this system is operational or collects ongoing or real-time laboratory datas. According to the same source, a legal framework is in place for mandatory reporting of nationally notifiable diseases. [1] The last time the Ministry of Health published a report about the evaluation of core public health functions in Morocco was in January 2016.

This report mentioned that one of their challenges is to implement an interoperable, interconnected, electronic real-time reporting system. [2] There is no further evidence of an operational electronic reporting surveillance system at both the national and the sub-national level that collects ongoing or real-time laboratory data through the websites of the Ministry of Health; the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests; the Ministry of Equipment, Transport, Logistics and Water; or The National Reference Laboratory (LNR). [3, 4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 11 February 2021.

[2] Ministry of Health. January 2016. "The evaluation of core public health functions in Morocco." (evaluation des fonctions essentielles de sante publique). [http://www.sante.gov.ma/Documents/2016/02/3%20Rapport%20Evaluation%20FESP.pdf]. Accessed 11 February 2021.

[3] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [http://www.agriculture.gov.ma]. Accessed 11 February 2021.

[5] Ministry of Equipment, Transport, Logistics and Water. [http://www.equipement.gov.ma/en/Pages/home.aspx]. Accessed 11 February 2021.

[6] The National Reference Laboratory (LNR). [http://www.lnr.ma/]. Accessed 11 February 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 0

There is no publicly available evidence suggesting that electronic health records (ERH) are commonly in use in Morocco. There is no information on the use of EHR by health facilities in Morocco through the websites of the Ministry of Health website, the Pasteur Institute, or the National Reference Laboratory. [1, 2, 3] A World Health Organization (WHO) report from 2016 indicates that the country does not have EHRs in place. [4]

[1] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[2] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[3] The National Reference Laboratory (LNR). [http://www.lnr.ma/]. Accessed 11 February 2021.

[4] World Health Organization. "Morocco." 2016. [http://www.who.int/goe/publications/atlas/2015/mar.pdf]. Accessed 11 February 2021.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the national public health system have access to electronic health records of individuals in Morocco. There is no information on the use of electronic health records (EHR) by health facilities in Morocco through the websites of the Ministry of Health website, the Pasteur Institute, or the National Reference Laboratory. [1, 2, 3] A World Health Organization (WHO) report from 2016 indicates that the country does not have EHRs in place. [4]

[1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[2] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[3] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

[4] World Health Organization. "Morocco." 2016. [<http://www.who.int/goe/publications/atlas/2015/mar.pdf>]. Accessed 11 February 2021.

2.4.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that there are data standards to ensure data is comparable (e.g., ISO standards) in Morocco. There is no information neither on the use of electronic health records (HER) by health facilities in Morocco nor data standards the ensure its comparability through the websites of the Ministry of Health website, the Pasteur Institute, or the National Reference Laboratory. [1, 2, 3] A World Health Organization (WHO) report from 2016 indicates that the country does not have EHRs in place. [4]

[1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[2] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[3] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

[4] World Health Organization. "Morocco." 2016. [<http://www.who.int/goe/publications/atlas/2015/mar.pdf>]. Accessed 11 February 2021.

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

2.4.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence of an established mechanisms at the relevant ministries responsible for animal, human, and wildlife surveillance to share data (e.g., through mosquito surveillance, brucellosis surveillance) in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016, states that a dedicated platform for sharing data is being discussed. [1] Since the publication of the JEE report, the Ministry of Health published a report in 2018 entitled the 'National Program against Rabies,' which identifies a committee for sharing surveillance data to fight against rabies (the most common zoonotic disease in Morocco); this committee includes the Ministry of Health, Ministry of Agriculture and Ministry of the Interior. [2] No further evidence is provided through the websites of the Ministry of Health; the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests; the Ministry of Equipment, Transport, Logistics and Water; or The National Reference

Laboratory (LNR). [3, 4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[2] Ministry of Health of Morocco. 2018. "National Program against rabies." (Programme national de lutte contre la rage). [<http://www.sante.gov.ma/Documents/2018/09/Rage%20JMLR%202018.pdf>]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[5] Ministry of Equipment, Transport, Logistics and Water. [<http://www.equipement.gov.ma/en/Pages/home.aspx>]. Accessed 11 February 2021.

[6] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Morocco makes 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).

The Epidemiological Bulletin, on the website of the Ministry of Health, provides de-identified health surveillance data on several infectious diseases including COVID-19 and Influenza. However, data is not updated regularly. [1] The website of the Ministry of Ministry of Agriculture, Fisheries, Rural Development, Water and Forests do not provide evidence of de-identified health surveillance data on infectious diseases publicly available. [2] The annual report of the Pasteur Institute of Morocco does not include de-identified health surveillance data on disease outbreaks, although the reports include the number of cases of some disease outbreaks. [3] The Joint External Evaluation (JEE) for Morocco does not include evidence on this matter; neither does the National Reference Laboratory website. [4, 5]

[1] Ministry of Health. "Epidemiological Bulletin."

[https://www.sante.gov.ma/Publications/Pages/Bullten_Épidémiologique.aspx]. Accessed 11 February 2021.

[2] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. 2016. "Annual report". [<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 11 February 2021.

[4] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[5] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of 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). The website of the Ministry of Health's 'Epidemiological Bulletin' page publishes daily, weekly and monthly updates on COVID-19, broken down by region, age and situation. [1] Also, the Ministry of Health established an online platform specifically to publish COVID-19 surveillance data and relevant updates, campaigns and information. The platform is updated on daily basis. [2]

[1] Ministry of Health. "Epidemiological Bulletin." (Bulletin Épidémiologique).

[https://www.sante.gov.ma/Publications/Pages/Bulletin_Épidémiologique.aspx]. Accessed 11 February 2021.

[2] Ministry of Health. "Moroccan COVID-19 Portal." (Le Portail Officiel du Coronavirus au Maroc).

[<http://www.covidmaroc.ma/Pages/LESINFOAR.aspx>]. Accessed 11 February 2021.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of legislation and/or regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Article 446 of the Penal Code states that physicians, surgeons, health officers and other health officials are subject to fine and/or imprisonment if they reveal health information without legal obligation or authorization to reveal such information; imprisonment could extend between one to six months and the fine is between 200 to 1,000 Moroccan Dirhams. [1] No further evidence is found through the website of the Ministry of Health, the Pasteur Institute of Morocco, or the National Reference Laboratory websites. [2, 3, 4]

[1] Ayoub Naim. 2011. "Medical confidentiality: The Law of the Jungle." (Secret médical: La loi de la jungle). L'Economiste 3553. [<https://www.leconomiste.com/article/884283-secret-medical-la-loi-de-la-jungle>]. Accessed 12 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 12 February 2021.

[2] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 12 February 2021.

[3] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 12 February 2021.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of 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). The Penal Code of Morocco including article 446 of that addresses the confidentiality of identifiable health information for individuals, does not mention protections from cyberattacks. [1] Neither the Ministry of Health nor the Pasteur Institute, or the National Reference Laboratory websites include information on laws and/or regulations on protection from cyber attacks. [2, 3]

[1] Ayoub Naim. 2011. "Medical confidentiality: The Law of the Jungle." (Secret médical: La loi de la jungle). L'Economiste 3553. [<https://www.leconomiste.com/article/884283-secret-medical-la-loi-de-la-jungle>]. Accessed 12 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 12 February 2021.

[2] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 12 February 2021.

[3] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 12 February 2021.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that the Moroccan 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 for one or more diseases.

The World Health Organization's (WHO) report on the evaluation of core public health functions in Morocco does not include evidence on this issue. [1] The Ministry of Health, the Pasteur Institute and the National Reference Laboratory websites do not include evidence of a commitment made by the government to share surveillance data during a public health emergency with other countries in the region. [2, 3, 4]

[1] Ministry of Health and World Health Organization (WHO). 2016. "The evaluation of core public health functions in Morocco." (Evaluation des fonctions essentielles de sante publique).

[<http://www.sante.gov.ma/Documents/2016/02/3%20Rapport%20Evaluation%20FESP.pdf>]. Accessed 12 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 12 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 12 February 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is insufficient evidence that a national system is in place in Morocco to provide support at the sub-national level (e.g. training, metrics standardization and/or financial resources) to conduct contact tracing, but only in response to active public health emergencies (Covid-19).

In response to the COVID-19 pandemic, there is evidence that Morocco received support from the World Bank to enhance its "disease detection capacities by providing technical expertise, laboratory equipment, and systems to ensure prompt case finding and contact tracing". [5] There is also evidence that Morocco "launched an app that helps users detect covid-19 exposure and informs them when they get in contact with a positive case". The app was put in place by the Ministry of Health however, it is a new system that specifically tailors to COVID-19 and no evidence was found that its contact tracing capabilities could be applied to other public health emergencies. [6]

There is no further mention of contact tracing on the websites of the Ministry of Health, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, or the Pasteur Institute. [1,2,3] There is no evidence of such a system in the Joint External Evaluation (JEE) report for Morocco, published in 2016. [4]

[1] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 21 February 2021.

[2] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 21 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 21 February 2021.

[4] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 21 February 2021.

[5] The World Bank. June 2020. "Morocco: Stepping Up to the COVID-19 Pandemic Outbreak". [<https://www.worldbank.org/en/news/feature/2020/06/16/morocco-stepping-up-to-the-covid-19-pandemic-outbreak>]. Accessed 21 February 2021.

[6] The North Africa Post. June 2020. "Morocco starts using coronavirus contact tracing app". [<https://northafricapost.com/41348-morocco-starts-using-coronavirus-contact-tracing-app.html>]. Accessed 21 February 2021.

2.5.1b

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

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

Current Year Score: 0

There is no evidence that Morocco provides wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, particularly economic support (paycheck, job security) and medical attention. There is no mention of wraparound services on the websites of the Ministry of Health, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests or the Pasteur Institute. [1,2,3] There is no evidence of such a system in the Joint External Evaluation (JEE) report for Morocco, published in 2016. [4] No other articles or studies were found that would suggest that Morocco has such a system.

[1] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 21 February 2021.

[2] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 21 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 21 February 2021.

[4] World Health Organisation (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 21 February 2021.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Morocco 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). The website of the Ministry of Health's 'Epidemiological Bulletin' page publishes daily, weekly and monthly updates on COVID-19, broken down by region, age and situation. The bulletins, nonetheless, do not include contact tracing. [1] Also, the Ministry of Health established an online platform specifically to publish, on daily basis, COVID-19 surveillance data and relevant updates, campaigns and information; the platform, however, does not include contact tracing information. [2]

[1] Ministry of Health. "Epidemiological Bulletin." (Bulletin Épidémiologique).

[https://www.sante.gov.ma/Publications/Pages/Bulletin_Épidémiologique.aspx]. Accessed 11 February 2021.

[2] Ministry of Health. "Moroccan COVID-19 Portal." (Le Portail Officiel du Coronavirus au Maroc).

[<http://www.covidmaroc.ma/Pages/LESINFOAR.aspx>]. Accessed 11 February 2021.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no publicly available evidence of a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of an active or future public health emergency.

According to international news agency, Morocco, in response to COVID-19 outbreak, suspended flights in March 2020 in an attempt to contain and prevent the spread of the virus in the country. [1] However, there is no evidence suggesting that this step comes as part of a joint plan or cooperative agreement between the public health system and border control authorities. There no indication of such agreement through the websites of the Ministry of Health, Ministry of Equipment and Transport, Logistics and Water, the Pasteur Institute of Morocco, or the Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [2, 3, 4, 5]

[1] Anadolu Agency. "Morocco Suspends Flights Until Further Notice." [https://www.aa.com.tr/ar/الدول-العربية/كورونا-المغرب-1766956/-إشعار-آخر-يغلق-مجاله-الجوي-حتى-إشعار-آخر-]. Accessed 11 February 2021.

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] Ministry of Equipment, Transport, Logistics and Water. [http://www.equipement.gov.ma/en/Pages/home.aspx]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[5] Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [https://www.diplomatie.ma/en]. Accessed 11 February 2021.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is publicly available evidence of applied epidemiology training programs (such as FETP) available in Morocco; however, there is no evidence of resources provided by the government to send citizens to another country to participate in applied epidemiology training programs. Morocco has been implementing a national FETP since 2010 with the financial support of the United States Centers for Disease Control and Prevention. The country also developed an FETP advanced level training program for advanced epidemiologists. Also, there are regional programmes of field epidemiology in place such as the Mediterranean Programme for Intervention Epidemiology Training "MediPIET" and Eastern Mediterranean Public Health Network (EMPHNET). [1] However, the Joint External Evaluation (JEE) for Morocco, the Ministry of Health website, and the

Pasteur Institute of Morocco do not provide evidence suggesting that there are resources provided by the government to send citizens to another country to participate in applied epidemiology training. [1, 2, 3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 11 February 2021.

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that the field epidemiology training programs, available in Morocco, are explicitly inclusive of animal health professionals or that there is a specific animal health field epidemiology training program offered (such as FETPV). According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country "has implemented a national Field Epidemiology Training Programme (FETP) since 2010 (three cohorts) with the financial support of the United States Centers for Disease Control and Prevention." However, the JEE recommends that "all actors should be included by opening FETP to other subject matter experts such as veterinarians and laboratory technicians;" which implicitly suggests that the current training programs does not include animal health professionals. [1] There is no evidence suggesting that the field epidemiology training programs are inclusive of animal health professionals through the websites of the Ministry of Health, , the Pasteur Institute of Morocco, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [2, 3, 4]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 11 February 2021.

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [http://www.agriculture.gov.ma]. Accessed 11 February 2021.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 1

There is insufficient publicly available evidence that Morocco has an overarching national public health emergency response plan that addresses multiple communicable diseases with epidemic or pandemic potential although there is evidence of disease-specific plans.

The World Health Organization's (WHO) health profile for Morocco, published in 2015, indicates that the Ministry of Health adopted an overarching national management strategy for medical emergencies and health disaster risks that include prevention and mitigation measures. [1] The plan, however, does not seem to be publicly available.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, "a comprehensive national public health emergency response preparedness plan and related SOPs is lacking." However, the country is developing a one-health, multi-hazard, and multisector comprehensive emergency response plan; Morocco already has national legislation and decrees that regulate preparedness and response to public health events. [2] However, the policy documents are not publicly available. Also, the JEE adds that there are effective national response plans that are disease-specific such as Ebola, A(H1N1), Zika, and MERS-CoV. [2] There is no mention, nonetheless, of existing overarching national public health plan for emergency response.

No further evidence of such overarching national response plan is available through the Ministry of Health, The Pasteur Institute, or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [3, 4, 5]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[5] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[5] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [<https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf>]. Accessed 11 February 2021.

3.1.1b

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that an overarching national public health emergency response plan in Morocco had been updated in the past three years.

The World Health Organization's (WHO) health profile for Morocco, published in 2015, indicates that the Ministry of Health adopted an overarching national management strategy for medical emergencies and health disaster risks that include prevention and mitigation measures. [1] The plan, however, is not publicly available and it remains unknown if it was updated in the last three years.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country is developing a one-health, multi-hazard, and multisector comprehensive emergency response plan; Morocco already has national legislation and decrees that regulate preparedness and response to public health events. [2] However, the policy documents are not publicly available. Also, the JEE adds that there are effective national response plans that are disease-specific such as Ebola, A(H1N1), Zika, and MERS-CoV. [2] There is no mention, nonetheless, of an existing overarching national public health plan for emergency response.

No further evidence of such overarching national response plan is available through the Ministry of Health, The Pasteur Institute, or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [3, 4, 5]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[5] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [<https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf>]. Accessed 11 February 2021.

3.1.1c

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that an overarching national public health emergency response plan in Morocco includes considerations for pediatric and/or other vulnerable populations.

The World Health Organization's (WHO) health profile for Morocco, published in 2015, indicates that the Ministry of Health adopted an overarching national management strategy for medical emergencies and health disaster risks that include prevention and mitigation measures. [1] The plan, however, is not publicly available and it remains unknown if the plan includes considerations for pediatric and/or other vulnerable populations.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country is developing a one-health, multi-hazard, and multisector comprehensive emergency response plan; Morocco already has national legislation and decrees that regulate preparedness and response to public health events. [2] However, the policy documents are not publicly available. Also, the JEE adds that there are effective national response plans that are disease-specific such as Ebola, A(H1N1), Zika, and MERS-CoV. [2] There is no mention, nonetheless, of an existing overarching national public health plan for emergency response.

No further evidence of such overarching national response plan is available through the Ministry of Health, The Pasteur Institute, or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [3, 4, 5]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[5] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [<https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf>]. Accessed 11 February 2021.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available of specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016, recommends including the private sector with delegated tasks, clear roles, and functions in emergency and disaster management plan. The report further suggests exploring the possible provision of technical assistance to the private sector based on its needs in the field of public health emergency management. [1] This implicitly suggest the lack of engagement of the private sector in the outbreak emergency preparedness and response in the country. There is no evidence of specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response through the websites of the Ministry of Health, the Pasteur Institute, the National Reference Laboratory, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, or the National Education, Vocational Training, Higher Education and Scientific Research. [2, 3, 4, 5, 6]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 11 February 2021.

[5] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[6] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 8 February 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 1

There is publicly available evidence suggesting that Morocco has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic, only for one disease (Covid-19).

In response to COVID-19, Morocco implemented NPIs to contain and prevent the spread of the virus in the country such as closing borders, mandatory general lockdown, and social distancing; however, there is no evidence suggesting that these preventive measures are part of a policy or national plan, or that the same measures could be replicated in case of other public health emergencies. [1] The Ministry of Health also developed a COVID-19 platform to publish updates about the pandemic situation in the country, however, there is no indication of a plan or policy that outlines the implementation of NPI during COVID or other pandemics. [2]

The World Health Organization's (WHO) health profile for Morocco, published in 2015, indicates that the Ministry of Health adopted an overarching national management strategy for medical emergencies and health disaster risks that include prevention and mitigation measures. [3] The plan, however, is not publicly available and it is unknown if it includes guidelines to implement NPIs. According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country is developing

a one-health, multi-hazard, and multisector comprehensive emergency response plan; Morocco already has national legislation and decrees that regulate preparedness and response to public health events. [4] However, the policy documents are not publicly available and it is unknown if it includes guidelines to implement NPIs.

No further evidence of plan and/or guidelines in place to implement NPIs during an epidemic or pandemic is available through the Ministry of Health, The Pasteur Institute, or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [5, 6, 7]

- [1] Abouzzohour, Y. 2020. "Policy and institutional responses to COVID-19 in the Middle East and North Africa: Morocco." [https://www.brookings.edu/research/policy-and-institutional-responses-to-covid-19-in-the-middle-east-and-north-africa-morocco/]. Accessed 11 February 2021.
- [2] Ministry of Health. "Moroccan COVID-19 Portal." (Le Portail Officiel du Coronavirus au Maroc). [http://www.covidmaroc.ma/Pages/LESINFOAR.aspx]. Accessed 11 February 2021.
- [3] World Health Organization (WHO). 2015. "Health profile of Morocco." [http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.
- [4] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 11 February 2021.
- [5] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.
- [6] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.
- [7] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf]. Accessed 11 February 2021.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?

- Is there evidence that the country has activated their national emergency response plan for an infectious disease outbreak in the past year?
- Is there evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year?

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

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco activated the national emergency response plan for an infectious disease outbreak in the past year. There is publicly available evidence of a completed exercise (either with WHO or separately) in the past year although there is no evidence that this was a national-level biological threat-focused exercise.

The World Health Organization (WHO) Extranet platform, specifically the simulation exercise page for Morocco shows that the country completed an exercise in January 2020. The exercise aimed at "supporting participants to develop systematic, effective and sustainable mechanisms to identify and manage health risks in the context of mass gathering events." [1] No further details are provided on the participants.

The websites of the Ministry of Health, The Pasteur Institute, or the Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates do not provide evidence suggesting that Morocco activated the national emergency response plan for an infectious disease outbreak in the past year. [2, 3, 4]

[1] World Health Organization. "Extranet - Morocco." [https://extranet.who.int/sph/simulation-exercise?region=All&country=285]. Accessed 11 February 2021.

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[4] Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [https://www.diplomatie.ma/en]. Accessed 11 February 2021.

3.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco 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. According to the World Health Organization's after-action review (AAR) page, last time Morocco an AAR was in 2018. [1] No further evidence on this issue is provided through the websites of the Ministry of Health, the Pasteur Institute of Morocco, or the Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [2, 3, 4]

[1] World Health Organization (WHO). "After Action Review." [https://extranet.who.int/sph/after-action-review?region=All&country=285]. Accessed 11 February 2021.

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[4] Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [https://www.diplomatie.ma/en]. Accessed 11 February 2021.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives. The World Health Organization (WHO) Extranet platform, specifically the simulation exercise page for Morocco shows that the country completed a national-level biological

threat-focused exercise in January 2020. [1] However, there is no evidence suggesting that the exercise included the private sector. The websites of the Ministry of Health, The Pasteur Institute or the Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates do not provide evidence suggesting that Morocco completed a national-level biological threat-focused exercise in the past year that included the private sector. [2, 3, 4]

[1] World Health Organization. "Extranet - Morocco." [<https://extranet.who.int/sph/simulation-exercise?region=All&country=285>]. Accessed 11 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [<https://www.diplomatie.ma/en>]. Accessed 11 February 2021

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence of an Emergency Operations Center (EOC) in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016, an EOC is in place and covers public health emergencies in the country. The EOC meets multiple criteria including the "minimum common standards; maintaining trained, functioning, multisectoral rapid response teams, as well as 'real-time' biosurveillance networks; and maintaining information systems and trained EOC staff capable of activating a coordinated emergency response within 120 minutes of the identification of a public health emergency." The JEE, however, does not elaborate neither on the name of the EOC nor on the agency or department that the EOC operates within.

[1] No further evidence of an EOC is available through the Ministry of Health, The Pasteur Institute or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [2, 3, 4]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [<https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf>]. Accessed 11 February 2021.

3.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Emergency Operations Center (EOC) is required to conduct a drill for a public health emergency scenario at least once per year or that the EOC conducts a drill at least once per year. The Joint External Evaluation (JEE) for Morocco, published in June 2016, does not mention that the EOC is required to conduct a drill or conducts a drill at least once a year; however, the report recommends conducting biannual or annual simulation exercises as a priority action. [1] No further evidence of an EOC is available through the Ministry of Health, The Pasteur Institute or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [2, 3, 4] The website of the focal point in Morocco of the Sendai framework, the Ministry Delegate to the Head of Government Responsible for General Affairs and Governance, does not provide evidence of an EOC in Morocco. [5]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] Organisation for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [<https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf>]. Accessed 11 February 2021.

[5] Ministry Delegate to the Head of Government Responsible for General Affairs and Governance. "Governance" (Gouvernance). [<http://www.mag.gov.ma/index.php/fr/fonds-documentaires/category/2-cat-2.html>]. Accessed 23 October 2018.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Emergency Operations Center (EOC) in Morocco 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. According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the EOC can conduct a coordinated emergency response activated within 120 minutes of a public health emergency. [1] However, there is no publicly available information suggesting that the EOC in Morocco 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, neither through the Ministry of Health website, the Pasteur Institute, or the Department of General Affairs and Governance. [2, 3, 4]

[1] World Health Organization (WHO). 2015. "Health profile of Morocco."

[http://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19275.pdf?%20ua=1]. Accessed 11 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[4] Ministry Delegate to the Head of Government Responsible for General Affairs and Governance. "Governance" (Gouvernance). [<http://www.mag.gov.ma/index.php/fr/fonds-documentaires/category/2-cat-2.html>]. Accessed 11 February 2021.

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 insufficient publicly available evidence suggesting that Morocco's public health and national security authorities carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack); or that there are 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).

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country has event-specific protocols for disease outbreaks, events at points of entry, food contamination, chemical and radiation hazards. These protocols require information sharing, joint investigations, joint risk assessments, coordinated control activities, and law enforcement. The country also has "terms of engagement with international entities and mechanisms, such as Interpol, United Nations agencies, and the United Nations Secretary General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons". The JEE, however, does not specifically mention deliberate biological events or exercises. [1]

No further evidence of an EOC is available through the Ministry of Health, the Pasteur Institute, The Ministry of Interior, or the Organisation for Economic Co-operation and Development's (OECD) review of risk management policies. [2, 3, 4, 5]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1]. Accessed 11 February 2021

[2] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 11 February 2021.

[3] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 11 February 2021.

[4] Ministry of Interior of Morocco. [http://www.pncl.gov.ma/fr/Pages/default.aspx]. Accessed 11 February 2021.

[5] Organization for Economic Co-operation and Development (OECD). 2014-2016. "OECD Review on Risk Management Policies in Morocco- Key findings." [https://www.oecd.org/gov/risk/risk-management-policy-morocco-highlights.pdf].

Accessed 11 February 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that the risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) outlines how messages will reach populations and sectors with different communications needs (eg different languages, location within the country, media reach). According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the risk communication strategy of the Ministry of Health is being developed; [1] however, the strategy is not publicly available. Also, the JEE states that there are specific national preparedness and response plans for public health emergencies that take into consideration multiple communication needs to adapt messages to different target groups. This includes using different languages such as French, Arabic, and Amazigh, use of vocabulary and behaviours. [1] However, the plans are not publicly available. No further evidence of the risk communication plan is available through the website of the Ministry of Health, Ministry of Culture and Communication website or the Pasteur Institute of Morocco. [2, 3, 4]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] Ministry of Culture and Communication of Morocco. [<http://www.maroc.ma/>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence Morocco has in place 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. According to the Joint External Evaluation (JEE) for Morocco, published in 2016, there are specific national preparedness and response plans for public health emergencies, such as such as MERS-COV, Ebola, pandemic influenza and Zika, that include descriptions of risk communication plans that are used during public health emergencies. [1] However, these plans are not publicly available. No further evidence of the risk communication plan is available through the website of the Ministry of Health, Ministry of Culture and Communication website or the Pasteur

Institute of Morocco. [2, 3, 4]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021
- [2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.
- [3] Ministry of Culture and Communication of Morocco. [<http://www.maroc.ma/>]. Accessed 11 February 2021.
- [4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that the risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) designates a specific position within the government to serve as the primary spokesperson to the public during a public health emergency.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, the country has a demonstrated capacity in public communication, with "a large press network has been developed, and is regularly activated through media briefings . . . In addition, main spokespersons of the [Ministry of Health] MoH have been trained on how to communicate with the press." However, the JEE does not mention a specific position within the government that serves as the primary spokesperson to the public during a public health emergency. [1] The JEE further states that a communication strategy is being developed. [1] The strategy is not publicly available.

No further evidence is provided on this issue through the website of the Ministry of Health, Ministry of Culture and Communication website or the Pasteur Institute of Morocco. [2, 3, 4]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 11 February 2021
- [2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.
- [3] Ministry of Culture and Communication of Morocco. [<http://www.maroc.ma/>]. Accessed 11 February 2021.
- [4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 2

There is publicly available evidence suggesting that in Morocco, the public health system in the past year has actively shared messages via online media platforms (e.g. social media, website) to inform the public about ongoing public health concerns and/or dispel rumors, misinformation or disinformation. The Ministry of Health is active on Facebook since 2014. The Ministry is also active on both Twitter and Instagram. The Ministry in the past year has been frequently and regularly publishing on its social media accounts updates on the pandemic situation, public health awareness campaigns and events. This, for example, includes updates on emergency contact information, COVID-19 situation, seasonal influenza updates. Also, the Ministry utilized its social media accounts to dispel misinformation; for example, the Ministry published on its Instagram page announcement about a fake Facebook account. [1, 2, 3] The official social media accounts are included on the Ministry of Health's website. [4]

[1] The Ministry of Health Facebook Page. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc).

[<https://www.facebook.com/ministere.sante.ma/>]. Accessed 11 February 2021.

[2] The Ministry of Health Twitter Account. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc).

[https://twitter.com/Ministere_Sante]. Accessed 11 February 2021.

[3] The Ministry of Health Instagram Page. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc).

[<https://www.instagram.com/p/CJqKmgwB1be/>]. Accessed 11 February 2021.

[4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no publicly available evidence suggesting that senior leaders (president or ministers) in Morocco have shared misinformation or disinformation on infectious diseases in the past two years. There is no evidence provided on this matter through national news agencies including Morocco World News, Moroccan News Agency (Agence Marocaine de Presse), or international news agencies such as Euronews, France 24 or Independent. [1, 2, 3, 4, 5]

[1] Morocco World News. [<https://www.moroccoworldnews.com>]. Accessed 11 February 2021.

[2] Moroccan News Agency (Agence Marocaine de Presse). [<https://www.map.ma/en/Home>]. Accessed 11 February 2021.

[3] Euronews. [<https://www.euronews.com/tag/morocco>]. Accessed 11 February 2021.

[4] France24. [<https://www.france24.com/en/tag/morocco/>]. Accessed 11 February 2021.

[5] Independent. [<https://www.independent.co.uk/topic/morocco?CMP=ILC-refresh>]. Accessed 11 February 2021.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 74.38

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: 127.95

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: 13

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: 0

There is evidence that Morocco has issued a restriction, without international/bilateral support, on the export/import of medical goods (e.g. medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak in the past year. The World Trade Organisation's "COVID-19: Measures affecting trade in goods" list confirms that Morocco issued "Temporary export ban on face masks, protective masks, and antiseptic preparations (HS 6307.90.50; 3808.94, 3401.11; 3402.20.00; 3926.90.92; 4818.90; 4823.90; 6307.90.40; 6307.90.90; 9020.00.00), due to the COVID-19 pandemic" effective Effective March 2020. [1] The websites of the Ministry of Health, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Pasteur Institute of Morocco or the Ministry of Interior do not provide additional evidence that Morocco issued a restriction on the export/import of medical goods. [2, 3, 4, 5]

[1] World Trade Organisation. June 4, 2021. "COVID-19: Measures affecting trade in goods".

[https://www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm] Accessed June 24, 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.

[3] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.

[5] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 11 February 2021.

3.7.1b

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

Yes = 0, No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that in the past year, Morocco has issued a restriction, without international/bilateral support, on the export/import of non-medical goods such as food and textile, due to an infectious disease outbreak. The websites of the Ministry of Health, the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Pasteur Institute of Morocco or the Ministry of Interior do not provide evidence that Morocco issued a restriction on the export/import of non-medical goods. [1, 2, 3, 4] The Ministry of Health's social media accounts on Facebook, Instagram and Twitter do not provide evidence on such restrictions issued last year. [5, 6, 7] A review of national and international news agencies including Morocco World News, Moroccan News Agency (Agence Marocaine de Presse), Euronews, France 24 or Independent do not provide evidence suggesting that Morocco issued a restriction on the export/import of non-medical goods during the past year. [8, 9, 10, 11, 12]

- [1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 11 February 2021.
- [2] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 11 February 2021.
- [3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 11 February 2021.
- [4] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 11 February 2021.
- [5] The Ministry of Health Facebook Page. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc). [<https://www.facebook.com/ministere.sante.ma/>]. Accessed 11 February 2021.
- [6] The Ministry of Health Twitter Account. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc). [https://twitter.com/Ministere_Sante]. Accessed 11 February 2021.
- [7] The Ministry of Health Instagram Page. "Ministry of Health." (Ministère de la Santé du Royaume du Maroc). [<https://www.instagram.com/p/CJqKmgwB1be/>]. Accessed 11 February 2021.
- [8] Morocco World News. [<https://www.morocoworldnews.com>]. Accessed 11 February 2021.
- [9] Moroccan News Agency (Agence Marocaine de Presse). [<https://www.map.ma/en/Home>]. Accessed 11 February 2021.
- [10] Euronews. [<https://www.euronews.com/tag/morocco>]. Accessed 11 February 2021.
- [11] France24. [<https://www.france24.com/en/tag/morocco/>]. Accessed 11 February 2021.
- [12] Independent. [<https://www.independent.co.uk/topic/morocco?CMP=ILC-refresh>]. Accessed 11 February 2021.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0, No = 1

Current Year Score: 0

There is publicly available evidence suggesting that in the past year, Morocco implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak.

According to international news agencies, the Moroccan Ministry of Foreign Affairs and International Cooperation suspended flights from and to more than 20 countries to prevent the spread of COVID-19 in March 2020; this includes China and some European, Middle Eastern and Gulf region countries. [1, 2, 3, 4] Also, in late December 2020, Morocco suspended flights with the United Kingdom until further notice, due to the spread of coronavirus mutation. [5]

The websites of the Ministry of Health, the Ministry of Foreign Affairs and International Cooperation, the Pasteur Institute of Morocco or the Ministry of Interior provide evidence that Morocco implemented a ban on travelers arriving from a specific country or countries due to a disease outbreak. [6, 7, 8, 9]

- [1] Sky News Arabia. "Morocco Suspends Flights from and to 25 Countries due to COVID-19." [<https://www.skynewsarabia.com/middle-east/1328194-كورونا-دولة-بسبب-كورونا-والى-25-دولة-يعلق-الرحلات-الجوية-والى-25-دولة-بسبب-كورونا>]. Accessed 18 February 2021.
- [2] Sky News Arabia. "Morocco Temporarily Suspends Flights due to COVID-19." [<https://www.alarabiya.net/aswaq/travel-and-tourism/2020/03/15-بلدان-عربية-7-دولة-منها-7-بلدان-عربية-25-دولة-بسبب-كورونا-والى-25-دولة-يعلق-الرحلات-الجوية-مع-25-دولة-منها-7-بلدان-عربية>]. Accessed 18 February 2021.
- [3] RT Online. "Morocco Suspends Flights from and to 21 Countries due to COVID-19." [[https://arabic.rt.com/middle_east/1093876-كورونا-بفيروس-كورونا-إصابات-فيها-سجلت-فيها-إصابات-بفيروس-كورونا-21-دولة-سجلت-فيها-إصابات-بفيروس-كورونا](https://arabic.rt.com/middle_east/1093876-كورونا-بفيروس-كورونا-إصابات-فيها-سجلت-فيها-إصابات-بفيروس-كورونا-21-دولة-سجلت-فيها-إصابات-بفيروس-كورونا-21-دولة-سجلت-فيها-إصابات-بفيروس-كورونا)]. Accessed 18 February 2021.

- [4] France 24. "Morocco Suspends Sea and Air Travel with France, Spain and Algeria due to COVID-19." [<https://www.france24.com/ar/20200313-كورونا-بسبب-فيروس-كورونا-والى-فرنسا-بسبب-فيروس-كورونا>]. Accessed 18 February 2021.
- [5] Anadolu Agency. "Morocco Suspends Flights to and From the United Kingdom Until Further Notice." [<https://www.aa.com.tr/ar/2083574/إشعار-آخر-بريطانيا-حتى-يعلق-رحلاته-مع-بريطانيا-حتى-إشعار-آخر>]. Accessed 18 February 2021.
- [6] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.
- [7] Ministry of Foreign Affairs, African Cooperation, and Moroccan Expatriates. [<https://www.diplomatie.ma/en>]. Accessed 18 February 2021.
- [8] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.
- [9] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 73.08

2017

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 138.87

2017

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 insufficient publicly available evidence suggesting that Morocco has in place a health workforce strategy (which has been updated in the past five years) to identify fields where there is an insufficient workforce and strategies to address these shortcomings. The Joint External Evaluation (JEE) for Morocco, published in 2016, states that the country developed a public health workforce strategy, which is revised periodically to consolidate a multidisciplinary workforce with the necessary competence to carry out essential public health functions. [1] However, the strategy is not publicly available and it is unknown if it was updated in the past five years. Also, in April 2018, the Ministry of Health presented the National Health Plan 2025 which states that there is a human resources deficit in the healthcare system, and that one way to address this deficit is by developing the governance sector. [2] No further evidence is provided on this issue through the website of the Ministry of Health, or the Pasteur Institute of Morocco. [3, 4]

[1] World Health Organisation (WHO). 20-24 June 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco." [<https://extranet.who.int/sph/sites/default/files/jee/WHO-WHE-CPI-2017.3-eng.pdf>. Accessed 18 February 2021].

[2] Ministry of Culture and Communication of Morocco. 2018. "The National Health Plan 2025." (Le Plan de Sante a l'horizon 2025). [<http://www.maroc.ma/fr/actualites/le-ministre-de-la-sante-presente-lors-du-conseil-de-gouvernement-les-axes-du-projet-du>]. Accessed 18 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 100

2017

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco has the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit and/or patient isolation room/unit located within the country. Neither the Ministry of Health website nor the website of the Hospitals of Marrakech, Casablanca, or Rabat make any

mention of this. [1, 2, 3, 4] The meeting between the Ministry of Health and the World Health Organization on Ebola in 2015, did not touch upon the country's isolation capacity. [5] Although a study published by the National Center for Biotechnology Information refers to media reports indicating that there is an isolation unit in Rabat; [6] the website of the Rabat Hospital does not provide evidence confirming this information, neither does the website of the Ministry of Health. [1, 4]

[1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[2] University Hospital Centre of Marrakech Mohamed VI. [<https://www.chumarrakech.ma/>]. Accessed 18 February 2021.

[3] University Hospital Centre of Casablanca. [<http://www.chuibnrochd.ma/>]. Accessed 18 February 2021.

[4] University Hospital Centre of Rabat. [<http://www.churabat.ma/>]. Accessed 18 February 2021.

[5] World Health Organisation (WHO). 6 April 2015. "Ebola meeting: The speech of the WHO for the Ministry of Health of Morocco". [<http://www.sante.gov.ma/Documents/Discours%20OMS%20.pdf>]. Accessed 18 February 2021.

[6] Fusco, F. M. et al. 2018. "Highly infectious diseases in the Mediterranean Sea area: Inventory of isolation capabilities and recommendations for appropriate isolation". *New Microbes and New Infections* 26: S65-S73. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205579/>]. Accessed 18 February 2021.

4.1.2c

Does the country meet one of the following criteria?

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

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years, or that Morocco developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years.

Neither the Ministry of Health website nor the website of the Hospitals of Marrakech, Casablanca, or Rabat make any mention of this. [1, 2, 3, 4] The meeting between the Ministry of Health and the World Health Organization on Ebola in 2015, did not touch upon the country's isolation capacity. [5] Although a study published by the National Center for Biotechnology Information refers to media reports indicating that there is an isolation unit in Rabat; [6] the website of the Rabat Hospital does not provide evidence confirming this information, neither does the website of the Ministry of Health. [1, 4] The Joint External Evaluation (JEE) of Morocco, was published in 2016, and does not provide information on the country's isolation capacity or plans to expand the capacity in response to an infectious disease outbreak. [5]

[1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 1 May 2021.

[2] University Hospital Centre of Marrakech Mohamed VI. [<https://www.chumarrakech.ma/>]. Accessed 1 May 2021.

[3] University Hospital Centre of Casablanca. [<http://www.chuibnrochd.ma/>]. Accessed 1 May 2021.

[4] University Hospital Centre of Rabat. [<http://www.churabat.ma/>]. Accessed 1 May 2021.

[5] World Health Organisation (WHO). 6 April 2015. "Ebola meeting: The speech of the WHO for the Ministry of Health of Morocco". [<http://www.sante.gov.ma/Documents/Discours%20OMS%20.pdf>]. Accessed 1 May 2021.

[6] Fusco, F. M. et al. 2018. "Highly infectious diseases in the Mediterranean Sea area: Inventory of isolation capabilities and recommendations for appropriate isolation". *New Microbes and New Infections* 26: S65-S73.

[<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205579/>]. Accessed 1 May 2021.

[5] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 1 May 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is insufficient evidence of a national procurement protocol in Morocco that can be utilized by the Ministries of Health and Agriculture can utilize for laboratory supplies (e.g. equipment, reagents and media) and medical supplies (e.g. equipment, PPE) for routine needs. A national procurement portal exists in Morocco although there is insufficient evidence that it includes laboratory and medical supplies that can be utilized by both the Ministry of Health and the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [1] No further evidence is provided on this issue through the website of the Ministry of Health, website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests or the Pasteur Institute of Morocco. [2, 3, 4]

[1] National Procurement Portal of Morocco. "Consultation Announcements" (annonces de consultation).

[<https://www.marchespublics.gov.ma/index.php5?page=entreprise.EntrepriseAdvancedSearch&AllCons&EnCours&domaineActivite=2.21>]. Accessed 18 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 1

There is publicly available evidence suggesting that Morocco has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency, but there is limited evidence about what the stockpile contains.

According to the Pasteur Institute of Morocco's annual report, 2016, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin and immunological drugs. The

Institute further maintains a stockpile of medical countermeasures (especially vaccines) for national use during a public health emergency. [1] The Joint External Evaluation (JEE) for Morocco, published in 2016, mentions that there is a plan for management and distribution of national stockpile for any priority public health emergencies in the country, without further elaboration on the availability of a stockpile of medical supplies for national use during a public health emergency. [2] No further evidence is provided on this issue through the website of the Ministry of Health, website of the Ministry of Interior or the Pasteur Institute of Morocco. [3, 4, 5]

[1] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 18 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.2.2b

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

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

Current Year Score: 0

There is no publicly available evidence that Morocco has a stockpile of of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. According to the Pasteur Institute of Morocco's annual report, 2015, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin and immunological drugs. However, the report does not mention that the institute keeps a stockpile of the laboratory supplies. [1] The Joint External Evaluation (JEE) for Morocco, published in 2016, mentions that there is a plan for management and distribution of national stockpile for any priority public health emergencies in the country, without further elaboration on the availability of a stockpile of laboratory supplies for national use during a public health emergency. [2] No further evidence is provided on this issue through the website of the Ministry of Health, website of the Ministry of Interior or the Pasteur Institute of Morocco. [3, 4, 5]

[1] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 18 February 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

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

According to the Pasteur Institute of Morocco's annual report, 2016, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin and immunological drugs. The Institute further maintains a stockpile of medical countermeasures (especially vaccines) for national use during a public health emergency. The report, however, does not mention that the Institute conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. [1] The The Joint External Evaluation (JEE) for Morocco, published in 2016, mentions that there is a plan for management and distribution of national stockpile for any priority public health emergencies in the country, without further elaboration on the availability of a stockpile of medical supplies for national use during a public health emergency. [2] No further evidence is provided on this issue through the website of the Ministry of Health, website of the Ministry of Interior or the Pasteur Institute of Morocco. [3, 4, 5]

[1] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 1 May 2021.

[2] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco".

[<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 1 May 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 1 May 2021.

[4] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 1 May 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 1 May 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that Morocco has a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE), or to procure medical supplies for national use during a public health emergency.

According to the Pasteur Institute of Morocco's annual report, 2016, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin, and immunological drugs. However, the report does not refer to a plan/agreement to leverage domestic manufacturing capacity or procure medical supplies during a public health emergency. [1]

A national procurement portal exists in Morocco, however, there is no indication of any mechanism to leverage domestic manufacturing capacity or procure medical supplies for national use specifically during a public health emergency. [2]

No further evidence is provided neither on domestic manufacturing capacity nor the procurement of medical supplies during public health emergencies through the website of the Ministry of Health, website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Ministry of Interior, or the Pasteur Institute of Morocco. [3, 4, 5, 6]

[1] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 1 May 2021.

[2] National Procurement Portal of Morocco. "Consultation Announcements" (annonces de consultation).

[<https://www.marchespublics.gov.ma/index.php5?page=entreprise.EntrepriseAdvancedSearch&AllCons&EnCours&domaineActivite=2.21>]. Accessed 1 May 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 1 May 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 1 May 2021.

[5] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 1 May 2021.

[6] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 1 May 2021.

4.2.3b

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 0

There is no publicly available 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; however, there is insufficient publicly available evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency.

According to the Pasteur Institute of Morocco's annual report, 2016, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin, and immunological drugs. However, the report refers neither to laboratory supplies nor to a plan/agreement to leverage domestic manufacturing capacity during a public health emergency. [1]

A national procurement portal exists in Morocco, however, there is no indication of any mechanism to procure laboratory supplies for national use specifically during a public health emergency. [2]

No further evidence is provided neither on domestic manufacturing capacity nor the procurement of laboratory supplies during public health emergencies through the website of the Ministry of Health, website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Ministry of Interior or the Pasteur Institute of Morocco. [3, 4, 5, 6]

[1] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 18 February 2021.

[2] National Procurement Portal of Morocco. "Consultation Announcements" (annonces de consultation).

[<https://www.marchespublics.gov.ma/index.php5?page=entreprise.EntrepriseAdvancedSearch&AllCons&EnCours&domaine>]

Activite=2.21]. Accessed 18 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 18 February 2021.

[5] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a plan, program, or guidelines in Morocco for dispensing medical countermeasures (MCM) for national use during a public health emergency (i.e., antibiotics, vaccines, therapeutics, and diagnostics).

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, one of the country's strengths is its "extensive experience in deploying national medical countermeasures within and across its borders." The JEE, however, does not mention any plans for dispensing medical countermeasures for national use specifically during public health emergencies. [1]

According to the Pasteur Institute of Morocco's annual report, 2016, the institute is entitled to carry out operations of manufacture, importation, and marketing of serums, vaccines, products of biological origin, and immunological drugs. The Institute further maintains a stockpile of medical countermeasures (especially vaccines) for national use during a public health emergency. [2] However, the report does not include information on dispensing medical countermeasures (MCM) for national use during a public health emergency.

The Pharmaceutical Policy published in 2015 by the Ministry of Health, which is the public institution responsible for drug regulation in the country, does not mention plans for dispensing medical countermeasures during a public health emergency. [3]

No further evidence is provided neither on dispensing MCMs during public health emergencies through the website of the Ministry of Health, the website of the Ministry of Agriculture, Fisheries, Rural Development, Water and Forests, the Ministry of Interior, or the Pasteur Institute of Morocco. [4, 5, 6, 7]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] The Pasteur Institute of Morocco. "The Annual Report 2016" (Rapport Annuel 2016).

[<http://www.pasteur.ma/uploads/rappAct2016.pdf>]. Accessed 18 February 2021.

[3] Ministry of Health of Morocco. 2015. "National Pharmaceutical Policy." (Politique Pharmaceutique Nationale).

[<http://www.sante.gov.ma/Documents/2016/02/PPN-Fr-2015.pdf>]. Accessed 18 February 2021.

[4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[5] The Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 18 February 2021.

[6] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

[7] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

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

4.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence of a plan to receive health personnel from other countries to respond to a public health emergency in Morocco.

The Joint External Evaluation (JEE), published in 2016, states that Morocco has a demonstrated and tested capacity for deploying and receiving health personnel during public health emergencies through an established and updated national health personnel plan. Also, the country participates in a regional/international partnership and has formal agreements with the World Health Organization (WHO), the International Committee of the Red Cross, and Spain for sending and receiving health personnel. The JEE, however, does not mention details of the plan or measures to facilitate the arrival and movement of foreign personnel during an emergency such as facilitated visa procedures and travel, or designated agency responsible for coordinating their travel. [1]

There is no further evidence provided on this issue neither through the 2017 International Health Cooperation Report nor the website of the Ministry of Health, the Ministry of Interior, or the Pasteur Institute of Morocco. [2, 3, 4, 5]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] Ministry of Health of Morocco. 2017. "International Health Cooperation." (Cooperation Internationale en Sante). [http://www.sante.gov.ma/Documents/2018/10/Rapport%20de%20Coop%C3%A9ration%202017_VF.pdf]. Accessed 18 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 73.6

2011

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: 236.29

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that the Moroccan 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. Neither the Ministry of Health website nor the website of the Hospitals of Marrakech, Casablanca, or Rabat make any mention of such legislation, a policy, or a public statement. [1, 2, 3, 4] The Evaluation of Core Public Health Functions in Morocco report, published in 2016 by the Ministry of Health does not mention a legislation, a policy or a public statement committing to provide prioritised health care services to healthcare workers who become sick as a result of responding to public health emergencies. [5]

[1] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[2] University Hospital Centre of Marrakech Mohamed VI. [<https://www.chumarrakech.ma/>]. Accessed 18 February 2021.

[3] University Hospital Centre of Casablanca. [<http://www.chuibnrochd.ma/>]. A Accessed 18 February 2021.

[4] University Hospital Centre of Rabat. [<http://www.churabat.ma/>]. Accessed 18 February 2021.

[5] Ministry of Health and WHO. 2016. "Evaluation of core public health functions in Morocco" (evaluation des fonctions essentielles de sante publique). [<http://www.sante.gov.ma/Documents/2016/02/3%20Rapport%20Evaluation%20FESP.pdf>]. Accessed 18 February 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a system in place for public health officials and healthcare workers to communicate during a public health emergency in Morocco.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, a national risk communication strategy is being developed; the draft strategy states that Morocco "plans to establish a multisectoral, multi-level network of risk communicators. The network should allow for real-time exchange of information, advice and opinion between experts and officials" during a public health emergency. [1] The strategy is still in draft and is not publicly available. The JEE adds that there are also formal and informal communication mechanisms between the Ministry of Health and the healthcare workers for communication during public health emergencies. The "exchanges within different levels and departments of the [Ministry of health] MoH are facilitated by an online forum." However, the JEE does not explicitly mention that these communication mechanisms are part of a national system for public health officials and healthcare workers to communicate during a public health emergency. [1] No further evidence is provided through the Ministry of Health website or the Ministry of Culture and Communication website. [2, 3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] Ministry of Culture and Communication of Morocco. [<http://www.maroc.ma/>]. Accessed 18 February 2021.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that system for public health officials and healthcare workers to communicate during an emergency encompasses healthcare workers in both the public and private sector. According to the Joint External Evaluation (JEE) for Morocco, published in 2016, a national risk communication strategy is being developed; the draft strategy states that Morocco "plans to establish a multisectoral, multi-level network of risk communicators. The network should allow for real-time exchange of information, advice and opinion between experts and officials" during a public health emergency. [1] The strategy is still in draft and is not publicly available. The JEE adds that there are also formal and informal communication mechanisms between the Ministry of Health and the healthcare workers for communication during public health emergencies. The "exchanges within different levels and departments of the [Ministry of health] MoH are facilitated by an online forum." However, the JEE does not explicitly mention that these communication mechanisms are part of a national system for public health officials and healthcare workers, in both public and private sectors, to communicate during a public health emergency. [1] No further evidence is provided through the Ministry of Health website or the Ministry of Culture and Communication website. [2, 3]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] Ministry of Culture and Communication of Morocco. [<http://www.maroc.ma/>]. Accessed 18 February 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence suggesting that the national public health system in Morocco monitors for and tracks the number of healthcare associated infections (HCAI) that take place in healthcare facilities.

According to the Joint External Evaluation (JEE) for Morocco, published in 2016, a national plan and a notification tool for health care-associated infections are in place to track the number of HCAI that take place in healthcare facilities, and also to prevent this type of infections. The JEE adds that there are regulations that address HCAI in Morocco. [1] However, the plan

is not publicly available. Neither the Ministry of Health website nor the Pasteur Institute website provide evidence of a plan or regulation around HCAI in the country. [2, 3] Morocco's national AMR action plan states that all hospitals are mandated to establish a Committee to Combat Nosocomial Infections (comité de lutte contre les infections nosocomiales, or CLIN) that periodically reports on HCAI within the hospital; there has not yet been an evaluation of the activities of such committees. [4] There are multiple journal articles on HCAI studies in Moroccan hospitals, confirming that the tracking and monitoring of HCAI exists in Morocco. [5, 6, 7, 8]

- [1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.
- [2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.
- [3] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.
- [4] Ministry of Health of the Kingdom of Morocco. 2019. "National Strategic Plan for the Prevention and Control of Antimicrobial Resistance (Plan stratégique national de prévention et de contrôle de la Résistance aux Antimicrobiens)". [<https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 18 February 2021.
- [5] Madani, Naoufel et al. 2009. "Health-care associated infections rates, length of stay, and bacterial resistance in an intensive care unit of Morocco: findings of the International Nosocomial Infection Control Consortium (INICC)." *International Archives of Medicine* 2[1] : 29. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2765432/>]. Accessed 18 February 2021.
- [6] Razine, Rachid et al. 2012. "Prevalence of hospital-acquired infections in the university medical center of Rabat, Morocco." *International Archives of Medicine* 5[1] : 26. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3515421/>]. Accessed 18 February 2021.
- [7] Maoulainine, F.-M.-R. et al. 2014. "Epidemiology of nosocomial bacterial infection in neonatal intensive care unit in Morocco." (*Épidémiologie de l'infection nosocomiale bactérienne dans un service de réanimation néonatale marocain*). *Archives de Pédiatrie* 21
- [9] : 938-943. [<https://www.sciencedirect.com/science/article/pii/S0929693X14002309?via%3Dihub>]. Accessed 18 February 2021.
- [8] Amine, Rafik et al. 2015. "Nosocomial Infections in a Morocco Burn Unit." *Open Access Library Journal* 2: 1-5. [<https://www.scirp.org/journal/PaperInformation.aspx?PaperID=68274>]. Accessed 18 February 2021.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1, No = 0

Current Year Score: 1

Morocco has a national requirement in place for ethical review (e.g., from an ethics committee or via Institutional Review Board approval) before beginning a clinical trial. The 2012 "Decision of the Minister of Health on Biomedical Research" states that no biomedical research can begin without approval from an ethics committee. [1] Law 28-13 on the Protection of Persons Participating in Biomedical Research of 2015 mandates establishing regional committees for the protection of persons participating in biomedical research (Comités régionaux de protection des personnes participant aux recherches

biomédicales). These committees are tasked with evaluating biomedical research projects, especially in terms of ethics. [2] Neither the Ministry of Health website nor the Pasteur Institute website provide evidence of a national requirement for ethical review before beginning a clinical trial. [3, 4]

[1] Ministry of Health. 2012. "Decision of the Minister of Health on Biomedical Research" (Decision du Ministre de la Santé relative aux recherches biomédicales).

[<http://www.sante.gov.ma/Reglementation/REGLEMENTATIONDESPRATIQUESMEDICALES/D%C3%A9cision%20du%20ministre%20de%20la%20sant%C3%A9%20relative%20aux%20recherches%20biom%C3%A9dicales%20n%C2%B0%2001%20D.R.C%2000%20du%2029-03-2012.pdf>]. Accessed 18 February 2021.

[2] Government of Morocco. Law 28-13 of 17 September 2015. "Law 28-13 on the Protection of Persons Participating in Biomedical Research" (Loi 28-13 relative à la protection des personnes participant aux recherches biomédicales).

[<http://adala.justice.gov.ma/production/html/Fr/190513.htm>]. Accessed 18 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics in Morocco. The websites of the Ministries of Health and National Education, Vocational Training, Higher Education and Scientific Research websites do not provide evidence of such expedited process. [1, 2] Law 28-13 on the Protection of Persons Participating in Biomedical Research of 2015 does not provide evidence on an expedited process for approving clinical trials for unregistered MCMs to treat ongoing epidemics. [3] Professor Farid Hakkou, the founder of the Ethics Committee for the biomedical research of Casablanca, mentioned during his interview with L'Economiste in 2018, that Law 28-13 should be developed with more decrees that consider an expedited process for approving clinical trials for unregistered medical countermeasures; [4] this in suggests the lack of such process in Morocco. The Minister of Health's decision around biomedical research of 2012, published by the Ministry of Health, does not mention an expedited process for approving clinical trials for unregistered MCMs to treat ongoing pandemics. [5]

[1] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[2] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] The Head of the Government of Morocco. 2015. "Law 28-13 on the protection of persons participating in biomedical research." (Loi 28-13 relative à la protection des personnes participant aux recherches biomédicales).

[<http://adala.justice.gov.ma/production/html/Fr/190513.htm>]. Accessed 18 February 2021.

[4] Dref Nadia. 2018. "Biomedical research: A privileged mode of access to therapeutic innovation." (Recherche biomédicale: Un mode privilégié d'accès à l'innovation thérapeutique). L'Economiste 5206.

[<https://www.leconomiste.com/article/1023898-recherche-biomedicale-un-mode-privilegie-d-acces-l-innovation-therapeutique>]. Accessed 18 February 2021.

[5] Ministry of Health. 2012. "Decision of the Minister of Health on Biomedical Research." (Decision du Ministre de la Santé relative aux recherches biomédicales).

[<http://www.sante.gov.ma/Reglementation/REGLEMENTATIONDESPRATIQUESMEDICALES/D%C3%A9cision%20du%20ministre%20de%20la%20sant%C3%A9%20relative%20aux%20recherches%20biom%C3%A9dicales%20n%C2%B0%2001%20D.R.C%2>

000%20du%2029-03-2012.pdf]. Accessed 18 February 2021.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of government agencies responsible for approving new medical countermeasures (MCM) for humans in Morocco. According to the Ministry of Health, there is a committee responsible for approving new MCMs; the committee is composed of the Director of Drug and Pharmacy or his representative, the Director of Epidemiology or his representative, The Director of Population or his representative, the Director of Hospitals and ambulatory care or his representative, and the Director of Regulations and Litigations. [1] No further evidence is provided through the websites of the Ministry of Health, Ministry of Ministry of National Education, Vocational Training, Higher Education and Scientific Research, or the Pasteur Institute of Morocco. [2, 3, 4]

[1] Ministry of Health. 2012. "Decision of the Minister of Health on Biomedical Research." (Decision du Ministre de la Sante relative aux recherches biomédicales).

[<http://www.sante.gov.ma/Reglementation/REGLEMENTATIONDESPRATIQUESMEDICALES/D%C3%A9cision%20du%20ministre%20de%20la%20sant%C3%A9%20relative%20aux%20recherches%20biom%C3%A9dicales%20n%C2%B0%2001%20D.R.C%2000%20du%2029-03-2012.pdf>]. Accessed 18 February 2021.

[2] Ministry of Health of Morocco. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] Ministry of National Education, Vocational Training, Higher Education and Scientific Research.

[<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving medical countermeasures (MCM) for human use during public health emergencies. The Decision of the Minister of Health regarding Biomedical Research, published in 2012, does not mention an expedited process for approving MCMs for human use during public health emergencies. [1] The Ministry of Health's 2016 Evaluation of the Core Public Health Functions report does not contain information relevant to an expedited process for approving medical countermeasures during public health emergencies. [2] The Joint External Evaluation (JEE) for Morocco, published in 2016, states that one of the country's core strengths is the "extensive experience in deploying national medical countermeasures within and across its border;" and that for example, "Morocco sent and received medical countermeasures to support the response to Ebola outbreak." However, the JEE does not mention an expedited process for approving MCMs. [3] No further evidence is provided through the websites of the Ministry of Health, or the Pasteur Institute of Morocco. [4, 5]

- [1] Ministry of Health. 2012. "Decision of the Minister of Health on Biomedical Research." (Decision du Ministre de la Sante relative aux recherches biomédicales).
[<http://www.sante.gov.ma/Reglementation/REGLEMENTATIONDESPRATIQUESMEDICALES/D%C3%A9cision%20du%20ministre%20de%20la%20sant%C3%A9%20relative%20aux%20recherches%20biom%C3%A9dicales%20n%C2%B0%2001%20D.R.C%2000%20du%2029-03-2012.pdf>]. Accessed 18 February 2021.
- [2] Ministry of Health. 2016. "The Evaluation of Core Public Health Functions in Morocco" (Evaluation des fonctions essentielles de sante publique). [<http://www.sante.gov.ma/Documents/2016/02/3%20Rapport%20Evaluation%20FESP.pdf>]. Accessed 18 February 2021.
- [3] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.
- [4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.
- [5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that epidemics and pandemics are integrated into the national risk reduction strategy in Morocco, or that there is a standalone national disaster risk reduction strategy for epidemics and pandemics. According to a presentation by the Government of Morocco during a Workshop on National Platforms at the International Disaster and Risk Conference (IDRC) in Davos, Switzerland, in 2008, Morocco has a national disaster risk reduction coordinating mechanism in Morocco". Pandemics and epidemics, however, are not mentioned in the presentation.

[1] The World Bank's document entitled Building Morocco's Resilience touches upon the risk management strategy of Morocco, however, there is no evidence suggesting that pandemics and epidemics are included national risk management strategy. [2] No further evidence on this issue is provided through the Ministry of Health or the Pasteur Institute of Morocco. [3, 4]

[1] United Nations Office for Disaster Risk Reduction (UNISDR). [<https://www.unisdr.org/partners/countries/mar>]. Accessed 18 February 2021.

[2] World Bank. 2013. "Building Morocco's Resilience".

[https://www.gfdr.org/sites/default/files/publication/Building_Morocco_Resilience.pdf]. Accessed 18 February 2021.

[3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Morocco has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to public health emergencies.

Morocco participates in a regional network for the control of cross-border public health threats called the EpiSouth in the Mediterranean Region and Southeast Europe. This partnership includes 27 countries, specifically 10 EU member states and 17 non-EU member states from southern Europe, the Balkans, North Africa, and the Middle East. [1] However, this partnership is more related to surveillance than emergencies.

Morocco through its Ministry of Health was part of the Cross-border Epidemic Intelligence group between the years 2010 and 2013. This group included many countries including Algeria, Israel, Jordan, Kosovo, Malta, Montenegro, Morocco, Palestine, Romania, Tunisia, and Turkey. The objective of this group is to enhance Mediterranean Early Warning Systems in order to reinforce health security in the area. [2] However, there is no publicly available evidence of the outputs/outcome of this group.

The Report of the 4th Africa Regional Platform on Disaster Risk Reduction, published in 2013 by the United Nations Office for Disaster Risk Reduction (UNISDR), does not mention that Morocco has cross-border agreements, protocols, or MOUs with neighboring countries regarding public health emergencies. [3] No further evidence on this issue is provided through the

websites of the Ministry of Health or the Pasteur Institute of Morocco. [4, 5]

- [1] Biblioteca Istituto Superiore di Sanità - Roma. 2017. Health Security. Vol.15. Roma. Mary Ann Liebert, Inc. [http://www.episouthnetwork.org/sites/default/files/episouth_article_contribution_of_regional_networks.pdf]. Accessed 18 February 2021.
- [2] EpiSouth. "Cross-border Epidemic Intelligence". [<http://www.episouthnetwork.org/content/cross-border-epidemic-intelligence>]. Accessed 18 February 2021.
- [3] United Nations Office for Disaster Risk Reduction (UNISDR). 2013. " Report of the 4th Africa Regional Platform on Disaster Risk Reduction". [https://www.preventionweb.net/files/30143_4thafrrproceedingsreport.pdf]. Accessed 18 February 2021.
- [4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.
- [5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

5.2.1b

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

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

Current Year Score: 0

There is insufficient publicly available evidence that Morocco has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to animal health emergencies.

According to the Food and Agriculture Organization of the United Nations (FAO), Morocco has been very active in sharing expertise and techniques with other countries, especially for locust disease control since 1998. In 2014, the FAO and the Moroccan Government signed an agreement for South-South Cooperation for the years between 2014 and 2020. Within this cooperation, at least one million USD was provided in aid to African countries including Morocco. [1] However, there is evidence suggesting that this cooperation is specifically relevant to animal health emergencies.

The Moroccan National Office of Sanitary Security of Food Products (ONSSA) has multiple projects and cooperation programs conducted with bilateral and multilateral partners such as Germany, France, Belgium, Spain, World Bank, and FAO, regarding several topics including pandemic surveillance and control of animal diseases. The ONSSA website, nonetheless, does not provide further information on programs or projects specifically on animal health emergencies. [2] No further evidence on this issue is provided through the websites of the Ministry of Health or the Pasteur Institute of Morocco. [3, 4]

- [1] Food and Agriculture Organisation for the United Nations. 2018. "Morocco and FAO Partnering for resilience and sustainable agricultural development". [<http://www.fao.org/3/ax500en/AX500EN.pdf>]. Accessed 18 February 2021.
- [2] National Office of Sanitary Security of Food Products (ONSSA). "Cooperation". [<http://www.onssa.gov.ma/fr/cooperation>]. Accessed 18 February 2021.
- [3] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.
- [4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 1

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 publicly available evidence suggesting the Morocco allocated national funds to improve capacity to address epidemic threats within the past three years. According to the national citizens budget for 2021, published on the Ministry of Economy, Finance and Administration Reform, the country is prioritizing the education and health sectors; and allocated funds to respond to COVID-19 pandemic and improve the surveillance system. However, the fund is allocated specifically to COVID-19 rather than the national capacity to address epidemic threats. [1] The national budget plans for the years 2020, 2019 and 2018 do not include funds to improve capacity to address epidemic threats. [2, 3, 4] There is no further evidence of national funds allocated to improve capacity to address epidemic threats through the websites of the Ministry of Health, Ministry of Interior or the Pasteur Institute of Morocco. [5, 6, 7]

[1] Ministry of Economy, Finance and Administration Reform. 2021. National Citizens Budget.

[https://www.finances.gov.ma/Publication/db/2020/Budget%20Citoyen%202021_WEB_AR.pdf]. Accessed 18 February 2021.

[2] Ministry of Economy, Finance and Administration Reform. 2020. National Citizens Budget.

[https://www.finances.gov.ma/Publication/db/2019/BudgetcitoyenARLF%202020.pdf]. Accessed 18 February 2021.

[3] Ministry of Economy, Finance and Administration Reform. 2019. National Citizens Budget.

[<https://www.finances.gov.ma/Publication/db/2018/BC%20VAr%20LF%202019.pdf>]. Accessed 18 February 2021.

[4] Ministry of Economy, Finance and Administration Reform. 2018. National Citizens Budget.

[<https://www.finances.gov.ma/Publication/db/2017/BC%202018-Ar%20version%2008.12.2017.pdf>]. Accessed 18 February 2021.

[5] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[6] Ministry of Interior of Morocco. [<http://www.pncl.gov.ma/fr/Pages/default.aspx>]. Accessed 11 February 2021.

[7] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a special emergency public financing mechanism and funds which the country can access in the face of a public health emergency. According to the Joint External Evaluation (JEE) for Morocco, an

interministerial crisis management committee has been established at the national level, to develop general policies and allocate fund in the case of public health emergencies; the Administrative and Financial Committee accordingly approves the budget to implement the response operations. However, the JEE does not mention that there is in place, a specific fund allocated for public health emergencies. [1] Morocco is not among the list of countries eligible for International Development Association (IDA) funding; [2] and there is no publicly available evidence of an agreement between Morocco and the World Bank Pandemic Financing Facility. [3] No further evidence of a special emergency public financing mechanism and funds which the country can access in the face of a public health emergency through the websites of the Ministry of Health, the Ministry of Economy, Finance and Administration Reform or the Pasteur Institute of Morocco. [4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] World Bank. "Borrowing Countries." [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 18 February 2021.

[3] Pandemic Emergency Financing Facility (PEF). 2017. "Operational Brief for Eligible Countries." [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 18 February 2021.

[4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[5] Ministry of Economy, Finance and Administration Reform. [<https://www.finances.gov.ma/ar/Pages/index.aspx>]. Accessed 18 February 2021.

[6] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

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

5.5.4a

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

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that senior leaders in Morocco, in the past three years, made a public commitment to either support other countries to improve capacity to address epidemic threats by providing financing or support; or to improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity.

Morocco supports Gabon to address epidemic threats, through partnering with the country to launch the Gabon Epidemic Project. Morocco also rejoined the African Union, after over 30 years of absence, and helps to support partner countries regarding health concerns, among other issues. The Ministry of Health of Morocco transfers its expertise on the prevention and control of epidemic diseases to other countries in the region. [1] However, there is no publicly available evidence of any public commitment made by senior leaders in the last three years [on providing financial support for other countries to improve capacity to address epidemic threats.

With regards to domestic capacity, the Ministry of Health of Morocco signed a Memorandum of Understanding with the UAE Department of Health in March 2015, to partner in the fight against the spread of the Ebola virus. Additionally, Morocco

requested the financial support of the Government of Kuwait at the 8th session of the Moroccan-Kuwaiti High Joint Commission held in Rabat in February 2015, for the construction and equipment of hospital centers needed to address illnesses caused by epidemics. [2] However, there is no evidence of any public commitment made by senior leaders in the last three years on improving the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity.

No further evidence on this issue is provided through the websites of the Ministry of Health, the Ministry of Economy, Finance and Administration Reform, or the Pasteur Institute of Morocco. [3, 4, 5] A review of the websites of national and international news agencies including Morocco World News, Moroccan News Agency (Agence Marocaine de Presse), Euronews, France 24, or Independent did not provide further evidence related to this matter. [6, 7, 8, 9, 10]

[1] Ministry of Health of Morocco. 2017. "International Health Cooperation." (Cooperation Internationale en Sante).

[http://www.sante.gov.ma/Documents/2018/10/Rapport%20de%20Coop%C3%A9ration%202017_VF.pdf]. Accessed 18 February 2021.

[2] Ministry of Health of Morocco. 2015. "2014-2015 Biennial Report." (Rapport de la biennie 2014-2015).

[http://www.sante.gov.ma/Documents/2016/10/coop%C3%A9ration%20en%20sant%C3%A9-2014-2015.pdf]. Accessed 18 February 2021.

[3] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 18 February 2021.

[4] Ministry of Economy, Finance and Administration Reform. [https://www.finances.gov.ma/ar/Pages/index.aspx]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 18 February 2021.

[6] Morocco World News. [https://www.moroccoworldnews.com]. Accessed 18 February 2021.

[7] Moroccan News Agency (Agence Marocaine de Presse). [https://www.map.ma/en/Home]. Accessed 18 February 2021.

[8] Euronews. [https://www.euronews.com/tag/morocco]. Accessed 18 February 2021.

[9] France24. [https://www.france24.com/en/tag/morocco/]. Accessed 18 February 2021.

[10] Independent. [https://www.independent.co.uk/topic/morocco?CMP=ILC-refresh]. Accessed 18 February 2021.

5.5.4b

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

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

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

Current Year Score: 1

There is publicly available evidence suggesting that Morocco in the past three years utilized financing or technical support from donors to improve the country's domestic capacity to address epidemic threats; however, there is no evidence that Morocco provided other countries with financing or technical support to improve capacity to address epidemic threats over the past three years.

The Georgetown Infectious Disease Atlas (GIDA) Global Health Security Tracking dashboard shows that Morocco between the years 2016 and 2020 received financial aid, specifically the country received in 2020 around 157.11 million US Dollars, with most of the fund going to improve domestic capacity to address biosafety and biosecurity; in addition to improving real-time surveillance, food safety, workforce development, zoonotic diseases, immunization, and the national laboratory system. [1]

The World Health Organization (WHO)'s Regional Office for the Eastern Mediterranean website mentions that Morocco

receives funds from multiple international donors including the European Union, the World Bank, and the Spanish Agency for International Cooperation and Development. However, the country page does not suggest that Morocco invested international funds to improve domestic capacity to address epidemic threats. [2]

The national citizens budget for 2021, 2020, 2019, and 2018, published on the Ministry of Economy, Finance and Administration Reform, the country do not suggest that Morocco has designated financing to address epidemic threats, neither does it mention that Morocco provides support to other countries to improve their domestic capacity to address epidemic risks. [3, 4, 5, 6] There is no further evidence of international funds allocated to improve capacity to address epidemic threats through the websites of the Ministry of Health, Ministry of Interior or the Pasteur Institute of Morocco. [7, 8, 9]

[1] GHS. "Tracking Dashboard." [https://tracking.ghscosting.org/]. Accessed 18 February 2021.

[2] World Health Organization. "Countries: Morocco." [http://www.emro.who.int/fr/mor/donors/]. Accessed 18 February 2021.

[3] Ministry of Economy, Finance and Administration Reform. 2021. National Citizens Budget. [https://www.finances.gov.ma/Publication/db/2020/Budget%20Citoyen%202021_WEB_AR.pdf]. Accessed 18 February 2021.

[4] Ministry of Economy, Finance and Administration Reform. 2020. National Citizens Budget. [https://www.finances.gov.ma/Publication/db/2019/BudgetcitoyenARLF%202020.pdf]. Accessed 18 February 2021.

[5] Ministry of Economy, Finance and Administration Reform. 2019. National Citizens Budget. [https://www.finances.gov.ma/Publication/db/2018/BC%20VAr%20LF%202019.pdf]. Accessed 18 February 2021.

[6] Ministry of Economy, Finance and Administration Reform. 2018. National Citizens Budget. [https://www.finances.gov.ma/Publication/db/2017/BC%202018-Ar%20version%2008.12.2017.pdf]. Accessed 18 February 2021.

[7] Ministry of Health. [http://www.sante.gov.ma/Pages/Accueil.aspx]. Accessed 18 February 2021.

[8] Ministry of Interior of Morocco. [http://www.pncl.gov.ma/fr/Pages/default.aspx]. Accessed 11 February 2021.

[9] The Pasteur Institute of Morocco. [http://www.pasteur.ma]. Accessed 18 February 2021.

5.5.4c

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

Yes = 1, No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence of a 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 in Morocco. The Joint External Evaluation (JEE) for Morocco, published in 2016 does not provide information on such a plan or policy. [1] The websites of the Ministry of Health; Ministry of Agriculture, Fisheries, Rural Development, Water and Forests; the Ministry of National Education, Vocational Training, Higher Education and Scientific Research; the Pasteur Institute or the National Reference Laboratory do not provide evidence of a plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens along with the associated epidemiological data with international organizations and/or other countries. [2, 3, 4, 5, 6]

[1] World Health Organization (WHO). 2016. "Joint External Evaluation of IHR Core Capacities of the Kingdom of Morocco". [<https://apps.who.int/iris/bitstream/handle/10665/254514/WHO-WHE-CPI-2017.3-eng.pdf;jsessionid=4924912F055CEBE12C98996B98DE1A50?sequence=1>]. Accessed 18 February 2021.

[2] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[3] Ministry of Agriculture, Fisheries, Rural Development, Water and Forests. [<http://www.agriculture.gov.ma>]. Accessed 18 February 2021.

[4] Ministry of National Education, Vocational Training, Higher Education and Scientific Research. [<https://www.men.gov.ma/en/Pages/Accueil.aspx>]. Accessed 18 February 2021.

[5] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

[6] The National Reference Laboratory (LNR). [<http://www.lnr.ma/>]. Accessed 18 February 2021.

5.6.1b

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

Yes = 0, No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that Morocco has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. The country is among the beneficiary countries of the PIP Partnership Contribution; and according to World Health Organization, PIP countries share weekly and monthly influenza updates to keep partners and the public informed of the epidemiological data, developments, and events. [1, 2]

The website of the National Institute of Hygiene in Rabat, which is the national influenza center in Morocco since 2000, the Pasteur Institute website, and the Ministry of Health websites do not provide evidence suggesting that Morocco did not share samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. [3, 4, 5] A review of national and international media outlets did not provide further evidence on this matter.

[1] World Health Organization (WHO). 2018. "Pandemic Influenza Preparedness (PIP) Framework."

[<http://www.emro.who.int/health-topics/pip-framework/index.html>]. Accessed 18 February 2021.

[2] World Health Organization (WHO). "Surveillance, forecasting and response." 2018.

[<http://www.emro.who.int/surveillance-forecasting-response/pandemic-influenza/pip-morocco.html>]. Accessed 18 February 2021.

[3] The National Institute of Hygiene of Morocco. [<http://inh.ma/>]. Accessed 18 February 2021.

[4] The Pasteur Institute of Morocco. [<http://www.pasteur.ma>]. Accessed 18 February 2021.

[4] Ministry of Health. [<http://www.sante.gov.ma/Pages/Accueil.aspx>]. Accessed 18 February 2021.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that Morocco has not shared pandemic pathogen samples during an outbreak in the past two years. The World Health Organization (WHO) country profile does not provide evidence that the country did not share pandemic pathogen samples, including COVID-19 samples, during an outbreak in the past two years.

[1] A review of national and international news agencies did not provide evidence on this matter.

[1] World Health Organisation (WHO). [<http://www.who.int/countries/mar/fr/>]. Accessed 18 February 2021.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 2

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: 40

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: 1

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 3

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 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: 3

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 73.75

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: 0.51

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: 0.2

2013

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 Labour Office's (ILO) report, published in 2018, and based on household data collected in 2010, Morocco's share of employment in the informal sector is 79.9 per cent.

[1] International Labour Office. "Women and Men in The Informal Economy: A Statistical Picture."

[https://ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_626831.pdf]. Accessed 18 February 2021.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 2

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.4

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: 2

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 2

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 62.99

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: 0.18

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: 76.45

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: 644

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 7.3

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 14.7

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 26.1

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: 86.78

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 88.5

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: 187.74

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