Oman

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

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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

Oman's national antimicrobial resistance (AMR) plan includes surveillance, detection, and reporting of priority AMR pathogens. "Oman National Action Plan on AMR," published in 2017, and publicly available in the World Health Organization's (WHO) Library of National Action Plans, states that part of the plan's mission is "to monitor the trend of AMR through a surveillance system" and "to advocate for research on antimicrobial resistance detection." It also states that part of the national antimicrobial resistance surveillance system's activities is to "report data on antimicrobial use and resistance in order to inform decision making at national and international levels." The plan emphasizes priority AMR pathogens based on their high threat to Oman, such as mutant enterobacteriaceae (CRE), salmonella, methicillin-resistant staphylococcus aureus (MRSA) and drug-resistant tuberculosis (TB) [1]. A WHO report entitled "Monitoring Global Progress on Addressing Antimicrobial Resistance," published in July 2018, reveals that Oman has a national AMR plan, but it is not operational and is not currently being implemented. The report does not provide further details. [2] The Ministry of Health's Oman Antimicrobial Resistance Surveillance System (OMASS) first annual report for the year 2017 published in September 2018 states that part of the Antimicrobial Resistance Surveillance Program objectives is "to develop national and local AMR surveillance systems and to harmonize them with the global standards and to detect emerging resistance and its spread." It also states that "the Central Public Health Lab (CPHL) conducted training for all MOH laboratories on antimicrobial sensitivity testing (AST) and reporting using Clinical and Laboratory Standards Institute (CLSI) guidelines." All priority pathogens are covered in the CPHL's monitoring and evaluation procedures [3]. The Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman has drafted a National Action Plan on AMR but is yet to develop an operational plan [4].

[1] World Health Organization (WHO). "Library of National Action Plans, Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 13 August 2020.
[2] World Health Organization (WHO). July 2018. "Monitoring Global Progress on Addressing Antimicrobial Resistance, Analysis Report of the Second Round of Results of AMR Country Self-assessment Survey (July 2018)". [http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1]. Accessed 13 August 2020.
[3] Ministry of Health. September 2018. "Oman Antimicrobial Resistance Surveillance System Annual Report 2017". [https://www.researchgate.net/profile/Amal_Al-Maani/project/Antimicrobial-Resistance/attachment/5be676f9cfe4a76455011145/AS:691300923887619@1541830392981/download/OMASS+Anual+Report+-+2017.pdf?context=ProjectUpdatesLog]. Accessed 13 August 2020.
[4] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-

eng.pdf?sequence=1]. Accessed 13 August 2020.

1.1.1b

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

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

Current Year Score: 1

Oman has a laboratory system that tests for a few priority antimicrobial resistance (AMR) pathogens, but there is no evidence that it tests for all 7+1 priority AMR pathogens. The "Oman National Action Plan on AMR," published in 2017 and publicly available in the World Health Organization's (WHO) Library of National Action Plans, states that the laboratory system in Oman consists of the Central Public Health Laboratories (CPHL). These laboratories have the ability to test for salmonella spp, E. coli, mycobacterium tuberculosis, and S. aureus [1]. The Ministry of Health Oman Antimicrobial Resistance Surveillance System first annual report for the year 2017 states that Oman has a laboratory system with sentinel sites, including Royal Hospital, Khoula Hospital, Al Nahdah Hospital, Sultan Qaboos Hospital, Salalah, Nizwa Hospital, and Rustaq Hospital. The report also states that the laboratory system is capable of testing for E. coli, K. pneumonia, S. aureus, S. pneumoniae, salmonella spp., shigella spp and N. gonorrheae [2]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "the national laboratory system of the health sector in Oman is capable of conducting all core tests of the priority diseases" and "human and veterinary laboratories have the capacity to identify and carry out susceptibility testing for all priority AMR pathogens listed by WHO." However, it does not list those pathogens by name and only mentions a few. The report also states that the laboratory system has six sentinel sites [3]. A WHO report entitled "Monitoring Global Progress on Addressing Antimicrobial Resistance," published in July 2018, does not cover the national laboratory system in Oman [4].

[1] World Health Organization (WHO). "Library of National Action Plans, Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 18 August 2020.
[2] Ministry of Health. September 2018. "Oman Antimicrobial Resistance Surveillance System Annual Report 2017". [https://www.researchgate.net/profile/Amal_Al-Maani/project/Antimicrobial-Resistance/attachment/5be676f9cfe4a76455011145/AS:691300923887619@1541830392981/download/OMASS+Anual+Report+-+2017.pdf?context=ProjectUpdatesLog]. Accessed 18 August 2020.
[3] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 18 August 2020.
[4] World Health Organization (WHO). July 2018. "Monitoring Global Progress on Addressing Antimicrobial Resistance, Analysis Report of the Second Round of Results of AMR Country Self-assessment Survey". [http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1]. Accessed 18 August 2020.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the government in Oman conducts detection and surveillance activities in soil and waterways for antimicrobial resistance (AMR) or AMR organisms. Oman's National Action Plan on AMR, published in 2017,

and publicly available in the World Health Organization's (WHO) Library of National Action Plans, does not include a statement regarding the detection or surveillance activities by the environmental agency. It only mentions that the Ministry of Environment is a member of the National AMR Committee [1]. Moreover, the WHO's report on Monitoring Global Progress on Addressing Antimicrobial Resistance that was published in July 2018 does not cover specific detection and surveillance activities for Oman [2]. The Ministry of Health Oman Antimicrobial Resistance Surveillance System's (OMASS) first annual report for the year 2017 published in September 2018 does not include a statement regarding detection or surveillance activities by the environmental agency [3]. Further, the Joint External Evaluation (JEE) of IHR Core Capacitie of Oman Mission Report, conducted in April 2017, does not explicitly state that the environmental agency conducts detection or surveillance activities in soil and waterways for AMR or AMR organisms. It states that the Ministry of Environment and Climate Affairs (MECA) is responsible for the monitoring of chemical exposures for air, water, and soil and the Ministry of Regional Municipalities and Water Resources is responsible for monitoring of chemical exposures for drinking water. It does not provide any additional details on whether these activities include testing for AMR or AMR organisms [4]. The MECA's 2017 Annual Report only states that it has done some testing for water and soil samples for the purpose of issuing export permits, but does not mention what type of testing and whether it includes antimicrobial residues or AMR organisms [5]. A paper published in the International Academic Forum's Journal of Sustainability Energy and the Environment in April 2017 states that tests were conducted for soil and waterways to detect AMR or AMR organisms but it does not specify who performed the tests [6].

[1] World Health Organization (WHO). "Library of National Action Plans, Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 18 August 2020.
[2] World Health Organization (WHO). "Monitoring Global Progress on Addressing Antimicrobial Resistance, Analysis Report of the Second Round of Results of AMR Country Self-assessment Survey (July 2018)". [http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1]. Accessed 18 August 2020.
[3] Ministry of Health. September 2018. "Oman Antimicrobial Resistance Surveillance System Annual Report 2017". [https://www.researchgate.net/profile/Amal_Al-Maani/project/Antimicrobial-Resistance/attachment/5be676f9cfe4a76455011145/AS:691300923887619@1541830392981/download/OMASS+Anual+Report+-+2017.pdf?context=ProjectUpdatesLog]. Accessed 18 August 2020.
[4] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 18 August 2020.
[5] Ministry of Environment and Climate Affairs (MECA). "Annual Report (2017)". [https://meca.gov.om/ar/files/knowledge-center/reports/statistics/annual%20report%202017.pdf]. Accessed 27 December 2018.
[6] The International Academic Forum (IAFOR). "Microbial and Chemical Pollution of Water-Wells Relative to Sewage Effluents in Oman". Accessed 18 August 2020.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

Oman has in place a regulation and there is evidence of enforcement of the regulation that requires prescriptions for antibiotic use for humans. This regulation is called the Antimicrobials Prescribing Policy and was brought into effect in April 2016. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April

2017, states that "National guidelines on appropriate antimicrobial use are available" and "antimicrobial drugs require a prescription from licensed doctors," but it does not specify what the regulation exactly is or what it includes [1]. Further, the Ministry of Health's "National Antimicrobial Guidelines," published in April 2016, state that the Antimicrobials Prescribing Policy in Oman went into effect on April 2016. It states that antibiotics require a prescription and that physicians must only "prescribe antibiotics when there is evidence of a bacterial infection and there is likely to be a clear clinical benefit" [2]. In 2017, Atheer newspaper published an article announcing that the Ministry of Health penalized a few pharmacies for violations that included the sell of antibiotics without prescriptions [3].

[1] "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 24 April 2021.
[2] Ministry of Health. "National Antimicrobial Guidelines". (9 May 2016). [https://www.moh.gov.om/documents/236878/0/national+antimicrobial+guidelines/c82511c5-63e9-4205-8f49-0f60df4d7aa4] Accessed 24 April 2021.
[3] Atheer Newspaper. 26 April 2017. "Health Violations for Some Pharmacies and the Ministry Penalizes Them". (مُخالفات صحية لعدد من الصيدليات ..والوزارة توقع عليهم العقوبات). [https://www.atheer.om/archives/435190]. Accessed 24 April 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: 2

Oman has a national regulation in place that requires prescriptions for antibiotic use for animals and there is no evidence of gaps in enforcement.

Oman's National Action Plan on antimicrobial resistance (AMR), published in 2017, states that "All antimicrobials used for disease control in animals require obligatory prescriptions by licensed veterinarians" [1].

Further, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "antimicrobial drugs must be prescribed by licensed doctors or veterinarians. National guidelines on appropriate antimicrobial use are available, although adherence is not known." It also mentions that there is a ban on the use of antimicrobials for growth promotion. It does not explicitly mention the name of the regulation [2].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 16 August 2020.
[2] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 16 August 2020.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Oman has a series of documents on zoonotic diseases. They cover avian influenza, brucellosis, CCHF, MERS-CoV, rabies, Rift Valley fever, plague, and the West Nile virus. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, refers to a plan for zoonotic diseases in multiple instances: "A plan to deal with zoonotic diseases is implemented and tested […] Documentation includes emergency plan for zoonotic diseases […] A separate management guideline for poisoning and zoonotic diseases is available." This series of documents cover the priority zoonoses identified, which are avian influenza, brucellosis, CCHF, MERS-CoV, rabies, Rift Valley fever, and West Nile virus [1]. The Ministry of Health 2017 Communicable Diseases Manual lists numerous zoonotic diseases; however, it also includes other diseases that are not zoonotic. These include plague, brucellosis, MERS-CoV, and rabies. [2] The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) evaluation report for Oman is not publicly available [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[2] Ministry of Health. Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587] Accessed 13 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/] [http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 13 August 2020.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

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

Although the Ministry of Health's "Manual on Communicable Diseases" published in 2017, provides the mode of transmission, surveillance, and reporting, and case management for each zoonotic disease, it does not include any type of specific risk/reduction plan [1].

Further, the Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, has no mention of a plan or equivalent strategy document(s) that includes

measures for risk identification and reduction for spillover events of zoonotic diseases from animals to humans [2]. The website of the Ministry of Agriculture and Fisheries provides no information about this either [3].

[1] Ministry of Health. Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 12 September 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 12 September 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 24 August 2020.
[3] Ministry of Agriculture and Fisheries. [https://www.maf.gov.om/]. Accessed 24 August 2020.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 1

Oman has national plans and guidelines that account for the surveillance, reporting, prevention, and control of multiple zoonotic pathogens of public health concern. The diseases covered include plague, avian influenza, brucellosis, CCHF, MERS-CoV, rabies, Rift Valley fever, and West Nile virus. Further, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "Oman has identified the following priority zoonoses for surveillance: avian influenza, brucellosis, CCHF, MERS-CoV, rabies, Rift Valley fever, and West Nile virus. National surveillance plans for these priority diseases are available, but in generic form in several different documents, except for MERS-CoV and avian influenza" [1]. The Ministry of Health's 2017 Communicable Diseases Manual lists many zoonotic diseases, including plague, brucellosis, MERS-CoV, and rabies. For each zoonotic disease, the manual states specific guidelines for the surveillance, reporting, prevention, and control [2]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation report for Oman is not publicly available [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[2] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". (2017).[https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 13 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. [http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 13 August 2020.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Oman has a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries. Although there is no dedicated unit, there is a National Zoonotic Committee, which was established in the 1990s. This committee is dedicated to zoonotic disease and functions across the Ministry of Health, Ministry of Agriculture and Fisheries, Municipalities (Regional Municipalities and Water Resources), Diwan of Royal Court (Wildlife), and Ministry of Environment and Climate Affairs (MECA). However, this committee is not a permanent body and there is no evidence of permanent staff employed in the unit. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report conducted in April 2017, states that "there is a committee called National Zoonotic Committee that was established in the 1990s that functions across "MoH, MoAF, Municipalities (Regional Municipalities and Water Resources), Diwan of Royal Court (Wildlife) and Ministry of Environment and Climate Affairs (MECA)." In addition, it states that "joint investigations have taken place on zoonotic events such as brucellosis, CCHF, and MERS-CoV" and "close collaboration and understanding between animal and human health sectors include: direct communication, coordination and exchange of information and periodic meetings of the multisectoral Zoonotic Committee, in addition to mandatory reporting of zoonotic events" [1]. However, no evidence of this being a permanent body was found. The Ministry of Health's 2017 Communicable Diseases Manual states that the Department of Veterinary Services is responsible for zoonotic disease and functions across municipality, environment departments and the Department of Disease Surveillance and Control [2]. The World Organization for Animal Health (OIE) PVS Evaluation report for Oman is not publicly available [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[2] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". (2017). [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 13 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 13 August 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there is a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. The World Organization for Animal Health (OIE) PVS Evaluation report for Oman is not publicly available [1]. The Ministry of Health's 2017 Communicable Diseases Manual uses multiple channels to report on disease surveillance, but these do not include owners of livestock. Examples include "pharmacies, police, public authorities (water, sanitation, environmental health, consumer protection), other nongovernmental organisations/associations, veterinary services (Ministry of Agriculture and Fisheries), Baladiyah (municipality)" [2]. Further, the Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that part of the recommendations of the mission is to develop self-reporting with clear requirements and responsibilities. However, the report does not provide further details and whether proposed self-reporting mechanism should include owners of livestock [3].

[1] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 18 August 2020.
[2] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587] Accessed 18 August 2020.
[3] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 18 August 2020.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there are laws or guidelines in Oman that safeguard the confidentiality of information generated through surveillance activities for animal owners. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, does not cover confidentiality of information whether for animal or human surveillance [1]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation report for Oman is not publicly available [2]. The Ministry of Health 2017 Communicable Diseases Manual states that there are confidentiality guidelines for human cases like HIV; however, there is no mention of confidentiality in the animal surveillance activities for owners [3]. Further, there is no relevant information on the website of the Ministry of Agriculture [4].

[1] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[2] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 13 August 2020.
[3] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". (2017). [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 13 August 2020.
[4] Ministry of Agriculture. [https://www.maf.gov.om/Livestock]. Accessed 13 Septemeber 2020.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that Oman conducts surveillance of zoonotic disease in wildlife. The Ministry of Health's 2017 Communicable Diseases Manual states that the surveillance of zoonotic disease includes wild animals such as wild rodents, lagomorphs, wild carnivores, wild birds, and wild canines (dogs, foxes, coyotes, wolves, jackals, skunks, raccoons) [1]. Further, the Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that one of the members of the National Zoonotic Committee is the Diwan of Royal Court, which covers wildlife [2]. The World Organization for Animal Health (OIE) Performance of Veterinary

Services (PVS) Evaluation report for Oman is not publicly available [3].

[1] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 13 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 13 August 2020.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 11.32

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 2.51

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a national plan on zoonotic disease or other legislation, regulation, or plan that includes mechanisms for working with the private sector in controlling or responding to zoonoses. There is committee-level co-ordination between the government and the private sector (hospitals and pharmacies), but not a specific agreement for zoonotic disease. Oman's National Action Plan on AMR, published in 2017, states that part of the plan's governance is "the implementation of this strategy as a comprehensive, integrated programme across government and the private sector (hospitals & pharmacies)." This does not explicitly mention zoonotic disease [1]. Furthermore, the Joint External Evaluation (JEE) of the International Health Regualtions (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "a multisectoral National AMR Committee integrating the animal and agricultural sector as well as the private sector has not yet been established." This leads to the conclusion that there is currently no agreement or partnership with the private sector in zoonotic disease [2]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation report for Oman is not publicly available [3]. There is no national laboratory system website or national public health institute in place. Furthermore, there is no relevant information on the Ministry of Agriculture website either [4].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 13 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 13 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 13 August 2020.
[4] Ministry of Agriculture. [https://www.maf.gov.om/]. Accessed 12 September 2020.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a record, updated within the past two years, of an inventory of dangerous pathogens. However, there is evidence of facility-level inventories. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that there is no national inventory of

dangerous pathogens, but individual laboratories conduct their own inventories of pathogens [1]. Oman has submitted Confidence Building Measures (CBMs)reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [2]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, the Research Council, and the Verification Research, Training, and Information Centre (VERTIC) database do not provide additional information on this subject [3,4,5,6,7].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[2] United Nations (UN). "Confidence Building Measure Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman] Accessed 28 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 28 August 2020.
[4] Ministry of Defence. [http://www.mod.gov.om]. Accessed 28 August 2020.
[5] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 28 August 2020.
[6] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 28 August 2020.
[7] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has in place legislation related to biosecurity that addresses 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. A few measures exist at the laboratory level and national biosecurity legislation has been drafted but not finalized. Further, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman received a moderate to low score for biosecurity: "Security measures to prevent unauthorised access to laboratories exist in most laboratories (i.e., guards, door locks, and video surveillance)". However, national biosecurity legislation has not yet been finalized [1]. Oman submitted Confidence Building Measures (CBMs) reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [2]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, The Research Council, and the Verification Research, Training, and Information Centre (VERTIC) database do not provide information that reveals that the country 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 [3,4,6,7].

[1] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[2] United Nations (UN) Biological Weapons Convention. "Confidence Building Measures, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.

[4] Ministry of Defence. [http://www.mod.gov.om]. Accessed 26 August 2020.
[5] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[6] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[7] The Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 15 September 2020.

1.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has in place legislation related to biosecurity and, therefore, there is no evidence of an enforcement agency. A few measures exist at the laboratory level and national biosecurity legislation has been drafted but not finalized. Furthermore, the Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman received a moderate to low score for biosecurity: "Security measures to prevent unauthorised access to laboratories exist in most laboratories (i.e., guards, door locks, and video surveillance)." However, national biosecurity legislation has not yet been finalized [1]. Oman submitted Confidence Building Measures (CBM) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [2]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, and The Research Council, Verification Research, Training, and Information Centre (VERTIC) database do not provide information that shows that the country 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 [3,4,5,6,7].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[2] United Nations (UN) Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 28 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 28 August 2020.
[4] Ministry of Defence. [http://www.mod.gov.om]. Accessed 28 August 2020.
[5] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 28 August 2020.
[6] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 28 August 2020.
[7] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Oman has a national inventory and has taken action to consolidate its individual lab inventories of dangerous pathogens to a minimum number of facilities. Oman's National Action Plan on antimicrobial residues (AMR), published in 2017, does not cover pathogen storage or inventory [1]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that a national inventory of dangerous pathogens has not been created, but individual laboratories do have their own inventories of pathogens [2]. This leads to the assumption that Oman has not taken action to consolidate inventories or limit facilities. Furthermore, Oman submitted Confidence Building Measures (CBM) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, and The Research Council solidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities [4,5,6,7]. There is no national laboratory system website or national public health institute. The Verification Research, Training, and Information Centre (VERTIC) database has no evidence that reveals that the country has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities [8].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[3] United Nations (UN) Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.
[5] Ministry of Defence. [http://www.mod.gov.om]. Accessed 26 August 2020.
[6] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[7] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[8] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has the capacity to conduct polymerase chain reaction (PCR)-based diagnostic testing for anthrax and/or Ebola. Oman's National Action Plan on AMR, published in 2017, states that Oman has the capacity to test for YF virus genomic sequences in blood or organs by PCR, but not for Ebola and/or anthrax [1]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman has the capacity to conduct PCR testing but not for Ebola or anthrax. It can test for influenza virus;, virus culture for poliovirus, serology for HIV, microscopy for mycobacterium tuberculosis, rapid diagnostic testing for plasmodium spp., and bacterial culture for Salmonella enteritidis serotype Typhi [2]. Oman submitted Confidence Building Measures (CBM) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, and The Research Council do not provide information that reveals that Oman has in-country capacity to conduct PCR-based diagnostic

testing for anthrax and/or Ebola, which would preclude culturing a live pathogen [4,5,6,7]. There is no national laboratory system website.

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] World Health OrganiZation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[3] United Nations (UN) Biological Weapons Convention. "Confidence Building Measures, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.
[5] Ministry of Defence. [http://www.mod.gov.om]. Accessed 26 August 2020.
[6] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[7] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman 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. Oman does not currently require biosecurity training. There is a national program for training, but the academic curriculum has not been finalised yet. Oman's National Action Plan on Antimicrobial Residues (AMR), published in 2017, does not cover biosecurity [1]. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that the "national program for training of biosafety, biosecurity and infectious sample transportation is in place, and an academic curriculum for biosafety and biosecurity has been proposed but does not yet exist" [2]. Furthermore, Oman submitted Confidence Building Measures (CBM) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Health, Ministry of Defence, Ministry of Agriculture and Fisheries, and The Research Council's Verification Research, Training, and Information Centre (VERTIC) database do not provide information that reveals that the country requires the type of biosecurity training mentioned above [4,5,6,7,8]. There is no national laboratory system website.

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 28 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[3] United Nations (UN) Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-

ecbm.unog.ch/state/oman]. Accessed 28 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 28 August 2020.
[5] Ministry of Defence. [http://www.mod.gov.om]. Accessed 28 August 2020.
[6] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 28 August 2020.
[7] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 28 August 2020.
[8] Verification Research, Training, and Information Centre (VERTIC) Database [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has regulations or licensing conditions that specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to checks (background, drug testing, etc.). Oman's National Action Plan on antimicrobial residues (AMR), published in 2017, does not include any evidence that Oman requires these type of checks [1]. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "a national framework documents, reports and investigates biosafety accidents at the facility and national levels"; however, it does not include the checks required for anyone handling pathogens [2]. The websites of the Ministry of Health and Ministry of Defence do not contain information about the checks required for personnel handling dangerous pathogens [3,4]. The Ministry of Agriculture and Fisheries electronic services do not list background checks or any other checks as a requirement for any of their licenses [5]. Furthermore, Oman submitted Confidence Building Measures (CBMs) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [6]. The Verification Research, Training, and Information Centre (VERTIC) Database does not list any regulations or licensing conditions that specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to checks (background, drug testing, etc.) [7].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.
[4] Ministry of Defence. [http://www.mod.gov.om/en-US]. Accessed 26 August 2020.
[5] Ministry of Agriculture and Fisheries. "Electronic Services". [http://www.maf.gov.om/Pages/Services.aspx?lang=AR&DId=0&I=0&CId=0&CMSId=87]. Accessed 26 August 2020.
[6] United Nations Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.

[7] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Oman has national regulations on the safe and secure transport of infectious substances (Categories A and B). According to the website of Oman Air SATS Cargo, air shipping companies in Oman follow International Air Transport Association (IATA) regulations for infectious substances (Categories A and B). Oman Air SATS Cargo, the premier cargo operations handler in Muscat International Airport, states on its website that "carriage of dangerous goods by air is subjected to the regulations set by the International Air Transport Association (IATA)" and lists a web link to IATA's dangerous goods regulations, which includes infectious substances (Categories A and B) [1]. Oman submitted Confidence Building Measures (CBM) Reports under the United Nations (UN) Biological Weapons Convention (BWC) in 2019 and 2020, but the reports are not accessible to the public. Although the Ministry of Health published the "Infection Prevention & Control Guidelines for COVID-19" on March 31, 2020, which included the collection and handling of laboratory specimens, it makes no reference to substances in Categories A and B [2]. The Verification Research, Training, and Information Centre (VERTIC) database provides no information on national regulations on the safe and secure transport of infectious substances (Categories A and B) [3].

[1] Oman Air SATS Cargo LLC. "Dangerous Goods". [https://omanairsatscargo.com/information/dangerous-goods/]. Accessed 28 August 2020.
[2] United Nations Biological Weapons Convention. "Confidence Building Measures, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 28 August 2020.
[2] Ministry of Health. 31 March 2020. "Infection Prevention & Control Guidelines for (COVID-19)". [https://www.moh.gov.om/documents/10194/3903020/IPC-COVID-Vers+5-FINAL.pdf/5ee3a377-7d37-cd5d-5879-65b6019445d3]. Accessed 26 August 2020.
[3] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/] Accessed 19 September 2020.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic

potential. The Electronic Services Section on the website of the Ministry of Agriculture and Fisheries does not mention a license for shipping or receiving dangerous pathogens or on the requirements or checks for shippers [1]. The Ministry of Health's Oman National Action Plan on Antimicrobial Residues (AMR) does not cover aspects of dangerous pathogens transport and does not have information related to requirements or checks for shippers [2]. Moreover, the Ministry of Defence website does not include information related to transportation of dangerous pathogens [3]. The website of the Ministry of Commerce and Industry does not provide information that reveals that there is a national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, or pathogens with pandemic potential [4]. In addition, the website of the Research Council does not provide information that reveals that there is a national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential [5]. The Verification Research, Training, and Information Centre (VERTIC) database does not provide information revealing that there is a national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential [6]. Furthermore, Oman submitted Confidence Building Measures (CBMs) Reports under the United Nations (UN) Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [7].

[1] Ministry of Agriculture and Fisheries. "Electronic Services". [http://www.maf.gov.om/Pages/Services.aspx?lang=AR&DId=0&I=0&CId=0&CMSId=87]. Accessed 27 August 2020.
[2] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 27 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om/en-US] Accessed 27 August 2020.
[4] Ministry of Commerce and Industry. [https://moci.gov.om]. Accessed 27 August 2020.
[5] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 27 August 2020.
[6] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.
[7] United Nations (UN). "Confidence Building Measure, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 12 October 2020.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has in place national biosafety legislation and/or regulations. Oman's National Action Plan on antimicrobial residues (AMR), published in 2017, does not cover biosafety [1]. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that national biosafety legislation needs to "develop a national comprehensive biosafety programme for human, animal, and agriculture laboratories" [2]. Oman has submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Agriculture and Fisheries, The Research Council, and the Verification Research, Training, and

Information Centre (VERTIC) database do not provide information that reveals that Oman has in place a national biosafety legislation and/or regulation [4,5,6].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[3] United Nations Biological Weapons Convention. "Confidence Building Measures, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[4] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[5] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[6] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.4.1b

Is there an established agency responsible for the enforcement of biosafety legislation and regulations?
Yes = 1 , No = 0

Current Year Score: 0

As there is no publicly available evidence that Oman has biosafety legislation, there is no established agency in Oman responsible for the enforcement of biosafety legislation and regulations. Oman's National Action Plan on AMR, published in 2017, does not cover biosafety [1]. The Joint External Evaluation (JEE) of International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that national authorities need to "develop a national comprehensive biosafety program for human, animal and agriculture laboratories" [2]. Furthermore, Oman submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Agriculture and Fisheries, The Research Council, and the Verification Research, Training, and Information Centre (VERTIC) database do not provide information that reveals that Oman has in place national biosafety legislation and/or regulation [4,5,6].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.
[3] United Nations Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[4] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[5] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[6] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Oman requires biosafety training, using a standardized, required approach—such as through a common curriculum or a train-the-trainer programme—for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. Oman has limited biosafety training programs, including train-the-trainer workshops. An academic curriculum exists but has not been approved yet. The Joint External Evaluation (JEE) of International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "a national biosafety officer at the Central Public Health Laboratory conducts periodic training for all MoH and non-MoH laboratories". It also states that "a national program for training of biosafety and infectious sample transportation is in place, and an academic curriculum for biosafety and biosecurity has been proposed but does not yet exist. Trained biosafety officers are available in all health care facilities, and several train-the-trainer workshops have been conducted." [1]. Oman's National Action Plan on AMR published in 2017 does not cover biosafety [2]. Furthermore, Oman submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [3]. The websites of the Ministry of Agriculture and Fisheries, The Research Council, and the Verification Research, Training, and Information Centre (VERTIC) Database do not provide information that indicates that Oman 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 [4,5,6].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[2] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 28 August 2020.
[3] United Nations Biological Weapons Convention. "Confidence Building Measures, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 28 August 2020.
[4] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 28 August 2020.
[5] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 28 August 2020.
[6] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has conducted an assessment to determine whether there is ongoing research being conducted on especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research. Oman's National Action Plan on AMR, published in 2017, does not include information about dual-use research [1]. The Ministry of Agriculture and Fisheries website does not include information related to dual-use research [2]. The Ministry of Defence website does not include information related to dual-use research [3]. Oman submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [4]. In addition, the Verification Research, Training, and Information Centre (VERTIC) database also does not include information related to dual-use research [5].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om/en-US] Accessed 26 August 2020.
[4] United Nations Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.
[5] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has national policy requiring oversight of dual-use research. Oman's National Action Plan on Antimicrobial Residues (AMR), published in 2017, does not include information about dual use research [1]. The Ministry of Agriculture and Fisheries website does not include information related to dual-use research [2]. Furthermore, the Ministry of Defence website does not include information related to dual-use research [3]. The Research Council and the Verification Research, Training, and Information Centre (VERTIC) database do not include information related to dual-use research [4,5]. Oman submitted Confidence Building Measures (CBM)Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [6].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om/en-US]. Accessed 26 August 2020.
[4] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[5] Verification Research, Training, and Information Centre (VERTIC) database [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.
[6] United Nations Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has an agency responsible for the oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual-use research. Oman's National Action Plan on AMR, published in 2017, does not include information about dual use research [1]. The websites of the Ministry of Agriculture and Fisheries [2], the Ministry of Defence [3], and the Research Council and the Verification Research, Training, and Information Centre (VERTIC) database do not include information related to dual-use research [4,5]. Oman submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [6].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 26 August 2020.
[2] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 26 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om/en-US]. Accessed 26 August 2020.
[4] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 26 August 2020.
[5] Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 13 September 2020.
[5] United Nations Biological Weapons Convention. "Confidence Building Measures Reports, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 26 August 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a national legislation, regulation, policy, or other guidance that requires the screening of synthesised DNA before it is sold. Oman's National Action Plan on Antimicrobial Residues (AMR), published in 2017, and the Ministry's website do not include information on DNA regulation/policy [1]. The websites of the Ministry of Agriculture and Fisheries, the Ministry of Defence, and the Verification Research, Training, and Information Centre (VERTIC) database do not include information related to DNA regulation [2,3, 4]. Furthermore, Oman submitted Confidence Building Measures (CBM) Reports under the UN Biological Weapons Convention in 2019 and 2020, but the reports are not accessible to the public [5].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348][https://www.moh.gov.om/en/home]. Accessed 21 August 2020.
[2] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 21 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om/en-US] Accessed 21 August 2020.
[4] The Verification Research, Training, and Information Centre (VERTIC) Database. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/o/]. Accessed 19 September 2020.
[5] United Nations. "Confidence Building Measure, Oman". [https://bwc-ecbm.unog.ch/state/oman]. Accessed 12 October 2020.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 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: 2

There is publicly available evidence that the national laboratory system in Oman has the capacity to conduct diagnostic tests for at least 5 of the 10 core tests defined by the World Health Organization (WHO). The Oman national laboratory system has the capacity to conduct all six common tests defined by the WHO. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "the national laboratory system of the health sector is capable of conducting all core tests of the priority diseases: polymerase chain reaction testing for influenza virus, virus culture for poliovirus, serology for HIV, microscopy for Mycobacterium tuberculosis, rapid diagnostic testing for Plasmodium spp. and bacterial culture for Salmonella enteritidis serotype Typhi. In addition, the health sector laboratory system has the capability to carry out all important core tests except for Ebola virus" [1]. The WHO Country Co-operation Strategy for WHO and Oman 2018–22, published in 2017, does not cover laboratory capacity in Oman [2]. The Ministry of Health Oman National Action Plan on AMR does not cover the laboratory capacity of the country in detail and only states the ability to test for tuberculosis and Salmonella [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 14 August 2020.
[2] World Health Organization (WHO). "Country Cooperation Strategy for WHO and Oman 2018-2022". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 14 August 2020.
[3] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 14 August 2020

2.1.1b

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

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

Current Year Score: 0

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

Oman has the MERS-CoV Preparedness & Response Plan, published in July 2013, for conducting testing during a public health emergency; however, this plan was released after the detection of MERS-COV in Oman, so it would not count as a novel pathogen. The MERS-CoV Preparedness & Response Plan states, "this document outlines the framework of how the Ministry of Health, Sultanate of Oman would respond to Novel Coronavirus (MERS-CoV)" [1]. The document also highlights the goals for testing, but it does not include information about scaling capacity. The Ministry of Health and Ministry of Agriculture and Fisheries websites do not provide any additional information in this regard [2,3].

[1] Ministry of Health. 31 jULY 2013. "MERS-CoV Preparedness & Response Plan". [https://www.moh.gov.om/documents/236878/0/MERS+COV+national+preparedness+plan+Oman+2013/e5f90be0-f90d-422b-94c8-0621190a7c34]. Accessed 24 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om]. Accessed on 12 October 2020.
[3] Ministry of Agriculture and Fisheries. [https://www.maf.gov.om/]. Accessed 12 October 2020.

2.1.2 Laboratory quality systems

2.1.2a

Is there a national laboratory that serves as a reference facility which is accredited (e.g., International Organization for Standardization [ISO] 15189:2003, U.S. Clinical Laboratory Improvement Amendments [CLIA])?
Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a national accredited laboratory that serves as a reference facility. The Oman Central Public Health Laboratory is the reference facility, but it does not have accreditation. The only facility that has this accreditation in Oman is the Medical Laboratories Department at the Royal Hospital, which was accredited in September 2016; however, it is not a reference facility. The website of the Ministry of Health states, "the Medical Laboratories Department at the Royal Hospital has been accredited to the ISO 15189 in September 2016" [1]. Furthermore, the World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information about accreditation for laboratories [2]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation report for Oman is not publicly available [3]. In addition, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, does not include information about accreditation for laboratories [4].

[1] Ministry of Health. "RH Awarded ISO 15189 Accreditation". [https://www.moh.gov.om/en/-/-15189-]. Accessed 14 August 2020.
[2] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 14 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/][http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 14 August 2020.
[4] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-

eng.pdf?sequence=1]. Accessed 14 August 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that the national laboratory that serves as a reference facility is subject to external quality assurance review in Oman. Indeed, all national health laboratories and private laboratories in Oman are subject to external quality assurance schemes, including the reference facility—the Central Public Health Laboratory (CPHL). Oman's National Action Plan on anitmicrobial residues (AMR), published in 2017, recommends that all national health laboratories are involved in external quality assurance programs [1]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "the National Laboratory Medicine Committee ensures that all laboratories have internal and external quality assurance schemes (EQAS). The CPHL provides these and also monitors quality performance. All national health laboratories and private laboratories are enrolled in EQAS" [2].

[1] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 14 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 14 August 2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

Oman has a well-established nationwide specimen transport system and clear guidelines for collection, handling. and transportation. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman's national laboratory system scored 5/5 for specimen referral and transport system (5 = Sustainable capacity). It also states that "there is a system to transport specimens to (central) national laboratories from all primary and intermediate level laboratories within the country. Laboratory guidelines for specimen collection, handling and transportation exist. Specimen transport is funded from the government budget" [1]. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information related to the specimen transport system in Oman [2]. Furthermore, the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation Report for Oman is not publicly available [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 14 August 2020.

[2] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 14 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/][http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 14 August 2020.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has a plan in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, includes nothing on this [1]. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information regarding the existence of a plan [2]. Furthermore, the emergency and disaster measures section under the government's e-gate website, called Omanuna, does not include any information about authorizing or licensing laboratories [3]. The websites of the Ministry of Health and the Ministry of Agriculture says nothing about this either [4,5].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [https://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 15 August 2020.
[2] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 15 August 2020.
[3] The Government's E-gate "Omanuna", Emergency and Disaster Measures. [https://www.oman.om/wps/portal/index/cr/lawsafetysecurity/emergencydisasterprocedures/!ut/p/a1/hc_LDoIwEAXQr2HLDEXxsasSRVQqPqEbg6ZWEqAGUPx80bgxvmZ3J-cmM8AhAJ5Fl1hGZayyKLlnbm2Zb1iGw3DMvJWB1MGlz3oDMpyQGoQ1wC9D8V9_ITLYAP_JHHwCE4eIrDOa9um8icQlXs9veQRXb2C8nFIk5nrgdiaWaduNJ_hxqAtcJmr3eDqk2c5sS-C5OIhc5Po5r9fHsjwVXQ01rKpKl0rJROh7lWr4qXJURQnBq4RTGlxH8SzdtAt6AxgSJMQ!/dl5/d5/L0lKQSEvUUt3SS80RUkhL2Fy/]. Accessed 15 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 15 August 2020.
[5] Ministry of Agriculture. [https://www.maf.gov.om/Livestock]. Accessed 13 September 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 1

Oman conducts ongoing event-based surveillance and analysis for infectious diseases, but there is no evidence that the data is analyzed on a daily basis. The Joint External Evaluation (JEE) of International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "indicator- and event-based surveillance exists in the Sultanate at all levels. The indicator-based system was formally launched in 1991 with the establishment of the communicable disease program." [1]. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information about ongoing event-based surveillance and analysis for infectious diseases [2]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation Report for Oman is not publicly available [3]. Furthermore, the websites of the Ministry of Health or the Ministry of Agriculture and Fisheries does not provide information that indicates that data is analyzed on a daily basis [4,5]. No relevant national emergency planning documents were found.

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 15 August 2020.
[2] World Health Organisation (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 14 August 2020.
[3] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 14 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om/]. Accessed 14 August 2020.
[5] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 14 August 2020.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 1

There is public evidence that Oman has reported a potential public health emergency of international concern to the World Health Organization (WHO) within the past two years. The WHO's website states that on March 2019 Oman reported several cases of the Middle East respiratory syndrome coronavirus (MERS-CoV) [1].

[1] World Health Organization (WHO). "Disease Outbreak News". [https://www.who.int/csr/don/04-march-2019-mers-oman/en/]. Accessed 15 August 2020.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Oman has an electronic reporting surveillance system in place. On 3 May 2017, Oman launched its e-electronic reporting surveillance system, called Tarassud [1]. Tarassud functions in the following manner: Users complete a computerized medical record linked to notifications, and then this data is transferred to a central server (a web-based system); this allows the data to be accessed using a username and password by other stakeholders and is assigned to administration-level controls [1]. After the COVID-19 pandemic, Oman has upgraded Tarassud. On June 17, 2020, the World Health Organization (WHO) announced that "Oman has launched a new surveillance system called Tarassud Plus to help contain the disease in the country." [2] The system is functional at both national and local levels. A WHO newsletter, explaining how the system works on the ground, says, "once patients are diagnosed, a medical tracking bracelet connected to the application ensures that they stay at home for the duration of their quarantine or isolation" [2]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "Oman has in place an interoperable, interconnected, electronic reporting system for public health and the e-notification system is linked to medical records" [3].

[1] Ministry of Health. "Public Health Bulletin Volume 1, Issue 2, Apr-Jun 2017". [https://www.moh.gov.om/documents/236878/0/Public+Health+Bulletin+%232/0b20635e-e197-4897-ac00-24644ce6b3e7]. Accessed 15 August 2020.
[2] World Health Organization. "Oman launches technological surveillance system to track COVID-19" (17 June 2020). [https://www.who.int/news-room/feature-stories/detail/oman-launches-technological-surveillance-system-to-track-covid-19]. Accessed 15 August 2020.
[3] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 17 September 2020.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Oman has an electronic reporting surveillance system that collects ongoing or real-time laboratory data. Oman has an electronic reporting surveillance system in place. On May 3, 2017, Oman launched its e-electronic reporting surveillance system, called Tarassud [1]. Tarassud functions in the following manner: Users complete a computerized medical record linked to notifications, and then this data is transferred to a central server (a web-based system); this allows the data to be accessed using a username and password by other stakeholders and is assigned to administration-level controls [1]. Tarassud provides real-time data collection. Explaining Tarassud, the Ministry of Health stated, "the regional Focal Points would access the password protected website and verify/update/complete data entry online. It is envisaged that up-to-date data on communicable disease would be available to all concerned in real time" [1]. After the COVID-19 pandemic, Oman has upgraded Tarassud. On 17 June, 2020, the World Health Organization (WHO) announced that "Oman has launched a new surveillance system called Tarassud Plus to help contain the disease in the country" [2]. However, the article does not include any information about real-time laboratory data collection. Furthermore, the WHO Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information about real-time laboratory data collection [3]. The World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation Report for Oman is not publicly available [4]. Oman's National Action Plan on Antimicrobial Residues (AMR), published in 2017, does not include information about real-time laboratory data collection [5]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that

"Intersectoral real-time communication and sharing of data between human and animal health sectors are limited. The veterinary surveillance system is less developed and not yet able to share data in real time" [6].

[1] Ministry of Health. "Public Health Bulletin Volume 1, Issue 2, Apr-Jun 2017". [https://www.moh.gov.om/documents/236878/0/Public+Health+Bulletin+%232/0b20635e-e197-4897-ac00-24644ce6b3e7]. Accessed 18 September 2020.
[2] World Health Organization. 17 jUNE 2020. "Oman Launches Technological Surveillance System to Track COVID-19". [https://www.who.int/news-room/feature-stories/detail/oman-launches-technological-surveillance-system-to-track-covid-19] accessed 16 August 2020.
[3] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 16 August 2020.
[4] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/][http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 16 August 2020.
[5] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 16 August 2020.
[6] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 16 August 2020.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 2

There is publicly available evidence that electronic health records (EHRs) are commonly in use in Oman. Indeed, Oman has implemented the Al-Shifa Healthcare Information System across 200 healthcare facilities; the system includes electronic patient records [1]. Furthermore, the Ministry of Health's 2016 annual report states that there are 255 health centres managed by the Ministry (49 hospitals and 206 primary healthcare clinics) [2]. This indicates that EHRs have been implemented across approximately 78% of health care facilities.

[1] Ministry of Health. "Al-Shifa System". [http://www.oman.om/wps/wcm/connect/2a19ffae-ade0-428b-9f7c-b30bdd874882/Al%2BShifa_MoH.pdf?MOD=AJPERES]. Accessed 16 August 2020.
[2] Ministry of Health. "Annual Report". [https://www.moh.gov.om/documents]. Accessed 16 August 2020.

2.4.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The national public health system has full access to the electronic health records (EHRs) of individuals. Oman has implemented the Al Shifa Healthcare Information System (HIS) across 200 healthcare facilities, which includes electronic patient records through the Ministry of Health. The Ministry of Health states that "a fully integrated and easily accessible EMR that provides 360-degree view of the patient history and clinical information needed for a point-of-care is the most crucial component (of the Al-Shifa Healthcare Information System). The system captures all aspects of patient information that have clinical significance, right from a patient referral/walk-in to the healthcare facility to the discharge from the facility after the requisite care is delivered to the patient through a set of inpatient and outpatient services." Furthermore, "data elements are captured immediately at each point of care and are shared with other users facilitating instantaneous access to the patient's medical history avoiding legibility and communication problems" [1].

[1] Ministry of Health. "Al-Shifa System". [http://www.oman.om/wps/wcm/connect/2a19ffae-ade0-428b-9f7c-b30bdd874882/Al%2BShifa_MoH.pdf?MOD=AJPERES]. Accessed 16 August 2020.

2.4.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there are data standards to ensure that health data stored in the electronic health records (EHRs) is comparable. The Ministry of Health Al-Shifa System Guidelines document does not provide information that reveals that there are data standards in the electronic records to ensure that data is comparable [1]. No website is available for a national public health institute or the national laboratory. Moreover, the website of the Ministry of Health does not provide any relevant information in this regard [2].

[1] Ministry of Health. "Al-Shifa System Guidelines". [http://www.oman.om/wps/wcm/connect/2a19ffae-ade0-428b-9f7c-b30bdd874882/Al%2BShifa_MoH.pdf?MOD=AJPERES]. Accessed 16 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 13 September 2020.

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

2.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has established mechanisms to share wildlife surveillance data. None of the following sources offer information about such mechanisms: the World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, Oman's National Action Plan on Antimicrobial Residues (AMR), the Joint External Evaluation (JEE) of International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, the Ministry of Agriculture and Fisheries, and the Ministry of Environment and Climate Affairs [1,2,3,4,5]. Furthermore, the World Organization for Animal Health (OIE) Performance of Veterinary Services (PVS) Evaluation Report for Oman is not publicly

available [6].

[1] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 16 August 2020.
[2] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 16 August 2020.
[3] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 16 August 2020.
[4] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 16 August 2020.
[5] Ministry of Environment and Climate Affairs. [https://meca.gov.om/en/]. Accessed 16 August 2020.
[6] World Organisation for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 16 August 2020.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman regularly makes de-identified health surveillance data on disease outbreaks publicly available via reports (or other format) on government websites.

The Ministry of Health's 2017 Communicable Diseases Manual is publicly available and includes aggregate data on disease outbreaks for multiple diseases, but there is no publicly available evidence that it has been updated ever since [1]. The current de-identified health surveillance data that the Ministry of Health publishes on a regular basis are only for the COVID-19 outbreak of 2020 and not for all disease outbreaks [2].

Furthermore, the World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information about de-identified health surveillance data [2]. The World Organization for Animal Health (OIE) PVS Evaluation Report for Oman is not publicly available [3]. The Joint External Evaluation (JEE) of the International Health Regulations (IHR) Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, does not include information about de-identified health surveillance data on disease outbreaks.

[1] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". (2017). [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 27 December 2018.
[2] Ministry of Health. "MOH Statement No. (165)" (15 August 2020). [https://www.moh.gov.om/en/-/-165-] accessed 16 August 2020.
[3] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 28 December 2018.

[4] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 27 December 2018.
[5] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 December 2018.

2.4.3b

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

Current Year Score: 1

There is evidence that Oman makes de-identified COVID-19 surveillance data available via daily statements on the website of the Ministry of Health. These statements share aggregate records on the number of COVID-19 cases. As of August 16, 2020, the Ministry of Health has made 165 statements since February 24, 2020, which implies that they are almost daily public statements [1,2]. As per Oman Info newspaper, the Tarassud application provides de-identified data on contact tracing efforts for COVID-19, but it does not provide any relevant information [3].

[1] Ministry of Health. "MOH Statement No. (165)" (15 August 2020). [https://www.moh.gov.om/en/-/-165-]. Accessed 24 April 2021.
[2] Ministry of Health. 24 February 2020. "MOH Registers First Two Novel Coronavirus (COVID-2019) in Oman". [https://www.moh.gov.om/en/-/--1226]. Accessed 24 April 2021.
[3] Oman Info. Tarassed Application Makes Available the Number of Cases per Goveronate (تطبيق "ترصد "يتيح معرفة عدد الإصابات في كل ولاية). [https://www.omaninfo.om/topics/58/show/334361]. Accessed 24 April 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: 0

There is no publicly available evidence that there are laws or guidelines in Oman that safeguard the confidentiality of information generated through health surveillance activities. The Ministry of Health's 2017 Communicable Diseases Manual states that there are confidentiality guidelines for individuals seeking treatment for HIV. However, there is no mention of confidentiality of identifiable health information for individuals during surveillance activities [1]. The Ministry of Health Al-Shifa Medical Information System Guidelines state that there are guidelines that safeguard the confidentiality of identifiable health information for individuals, but it does not state that it includes surveillance activities [2]. No templates/online forms for medical practitioners/lab technicians for health surveillance were found. The websites of several Omani law firms were searched, but no relevant guidelines on de-identifying personal information for health surveillance were found.

[1] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 16 August 2020.

[2] Ministry of Health. "Shifa Medical Information Management System Guidelines". [https://www.moh.gov.om/documents/16629/35142/%D8%A7%D9%84%D8%B4%D9%81%D8%A7%D8%A1/2f6fb83e-d969-46a4-b058-96886d5c2b73]. Accessed 16 August 2020.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that laws or guidelines in Oman safeguard the confidentiality of information generated through health surveillance activities, including protection from cyber attacks. The Ministry of Health's 2017 Communicable Diseases Manual states that there are confidentiality guidelines for individuals who seek treatment for HIV. However, there is no mention of confidentiality of identifiable health information for individuals during surveillance activities, including protection from cyber attacks [1]. The Ministry of Health Shifa Medical Information System Guidelines state that there are guidelines that safeguard the confidentiality of identifiable health information for individuals. The document states that this includes information security [2]. No relevant cybersecurity policy documents were found that cover health surveillance activities. Furthermore, there is no national laboratory system website or national public health institute.

[1] Ministry of Health Directorate General for Disease Surveillance and Control. "Communicable Diseases Manual Third Edition". [https://www.moh.gov.om/documents/236878/0/communicable+diseases+Manual/a0577e5e-cc5a-4cb6-a460-832e37b6b587]. Accessed 16 August 2020.
[2] Ministry of Health. "Shifa Medical Information System Guidelines". [https://www.moh.gov.om/documents/16629/35142/%D8%A7%D9%84%D8%B4%D9%81%D8%A7%D8%A1/2f6fb83e-d969-46a4-b058-96886d5c2b73]. Accessed on 16 August 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 0

There is insufficient evidence that Oman has committed to cooperation with other Gulf Cooperation Council (GCC) countries in information-sharing during public emergencies.

As per the press release Health Ministry, on March 14, 2020, the GCC Health Ministers "reviewed the COVID-19 current situation in each country in the Gulf [...], the coordination process between the countries, as well as identifying a contact person to transfer the information" [1]. Although the exact information that is being shared is not publicly shared, there is evidence that regular cooperation among the countries, including Oman, is being maintained. As per the Bawabaa newspaper, GCC health undersecretaries held their tenth meeeting on August 13, 2020 to discuss the COVID-19 pandemic [2]. Furthermore, on March 14, 2020, Bawabaa newspaper states that there was a joint decision made by all Ministers of

Health in GCC countries to establish a situation room to share information and coordinate responses [3].

[1] Ministry of Health. 14 March 2020. "Through Video Conference, GCC Health Minister Meets". [https://www.moh.gov.om/ar/-/--1259]. Accessed 25 April 2021.
[2] Bawabaa Newspaper. "The 10th Meeting of GCC Health Undersecrateries to Discuss Recents Updates in Regards to COVID-19" (13 August 2020). [https://bawabaa.org/news/473018]. Accessed 25 April 2021.
[3] Bawabaa Newspaper. 14 March 2020. "Joint Decision by Ministers of Health in GCC Countries to respond to the Coronavirus". قرار مشترك لوزراء الصحة بدول مجلس التعاون الخليجي لمواجهة كورونا). [https://bawabaa.org/news/167091]. Accessed 25 April 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has a national system in place to provide support at the sub-national level to conduct contact tracing in the event of an active or future public health emergency.

While there is evidence of ongoing contact tracing efforts via the Tarassud Application, there is no detail on if training or other support is being provided to public health officials across the country [1]. The website of the Health Ministry provides no further information on this [2]. There is no national laboratory system website or a national public health institute in place.

[1] Oman Info. Tarassud Application Makes Available the Number of Cases per Goveronate (تطبيق "ترصد "يتيح معرفة عدد الإصابات في كل ولاية;). [https://www.omaninfo.om/topics/58/show/334361]. Accessed 28 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 17 September 2020.

2.5.1b

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

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

Current Year Score: 0

There is no publicly available evidence that the country 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.

The International Monetary Fund (IMF) Policy Response to COVID-19 Tracker for Oman states that "the government approved measures aiming to maintain the employment of Omani nationals and support private sector firms, including by encouraging them to take advance paid annual leave and negotiate salary cuts. For Omani employees whose salaries are lowered, their bank loans will be rescheduled without interest or additional fees for three months, fuel subsidies provided, and electricity and water bills postponed until the end of June 2020, but there is nothing about wraparound services [1]. The website of the Ministry of Health provides no information in this regard [2].

[1] International Monetary Fund Policy Response to COVID-19 Tracker. [https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19]. Accessed 26 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Oman makes de-identified data on contact tracing efforts for COVID-19 available via daily reports (or other format) on government websites. The COVID-19 reports that are made public include de-identified health surveillance data on infectious diseases, not on contract tracing [1]. Oman Info newspaper states that the Tarassud Application allows users to see cases per state and governorate, but it does not indicate that it makes de-identified data on contact tracing efforts for COVID-19 available [2]. The website of the Ministry of Health provides no further information on this [3]. No national laboratory system website or national public health institute are in place.

[1] Ministry of Health (MoH). MoH Statements. [https://www.moh.gov.om/en/-59]. Accessed 24 April 2021.
[2] Oman Info. Tarassud Application makes available the number of cases per goveronate (تطبيق "ترصد "يتيح معرفة عدد الإصابات في كل ولاية). [https://www.omaninfo.com/topics/58/show/334361]. Accessed 24 April 2021.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 24 April 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 that Oman has a joint plan between the public health system and border control authorities during public health emergencies to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of an active or future public health emergency.

The website of the Ministry of Health makes available a few standard operating procedures (SOPs) for points of entry

surveillance and response for people infected with COVID-19 [1]. However, these SOPs are specific to COVID-19 and are not applicable for public health emergencies in general. Furthermore, while they have details on how to handle suspected or confirmed cases at points of entry, there is no detail on how the relevant agencies work together to identify or trace contacts.

The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "The Medical Response and Public Health Sector is guided by a National Strategic Framework identifying the roles and responsibilities of sectors; this plan allows for cross-collaboration, information exchange, and resource allocation among the public health and security sectors in Oman." It also adds that "public health and security authorities (e.g., law enforcement, border control, customs) are linked during a suspect or confirmed biological event" [2]. Nonetheless, it does not explicitly specify the identification of suspected and potential cases in international travelers and trace and quarantine their contacts in the event of a public health emergency. The websites of the Ministry of Health and the Directorate General of Customs do not provide any relevant information [3,4].

[1] Ministry of Health. "Points of Entry". [https://www.moh.gov.om/en/-57]. Accessed 13 October 2020.
[2] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 17 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/]. Accessed 16 September 2020.
[4] The Directorate General of Customs. [https://www.customs.gov.om/dgcportal/web/dgc/home]. Accessed 16 September 2020.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?
- Applied epidemiology training program (such as FETP) is available in country
- Resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP)
Needs to meet at least one of the criteria to be scored a 1 on this measure. , Yes for both = 1 , Yes for one = 1 , No for both = 0

Current Year Score: 1

There is no evidence that the country has applied an epidemiology training program (such as a field epidemiology training program—FETP). However, the country has sent citizens to another country to participate in applied epidemiology training programs. The Joint External Evaluation (JEE) mission report of the Sultanate of Oman that was completed in April 2017 states that Oman does not have an FETP or applied epidemiology training program, but it states that "the country has sent a small number of individuals to participate in FETP through [Gulf Co-operation Council] agreements" [1]. The Eastern Mediterranean Public Health Network (EMPHNET) website states that Oman is not in the list of countries in the region that have an FETP [2]. The Task Force for Global Health (TEPHINET) website states that Oman is not a member and does not provide applied epidemiology training programs [3]. The website of the Ministry of Health does not provide information regarding the availability of applied epidemiology training programs in Oman or whether resources are provided by the

government to send citizens abroad to participate in such programs [4].

[1] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 17 August 2020.
[2] The Eastern Mediterranean Public Health Network (EMPHNET). "Country Programmes". [http://emphnet.net/?page_id=491]. Accessed 17 August 2020.
[3] The Task Force for Global Health (TEPHINET). "Training Programmes" [https://www.tephinet.org/training-programs]. Accessed 17 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om]. Accessed 17 August 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the country has field epidemiology training programs explicitly inclusive of animal health professionals or a specific animal health field epidemiology training program (like an FETPV). The Joint External Evaluation (JEE) mission report of the Sultanate of Oman, completed in April 2017, does not provide information that shows that Oman has field epidemiology training programs (FETPs) explicitly inclusive of animal health professionals or a specific animal health FETP (such as FETPV) [1]. The Eastern Mediterranean Public Health Network (EMPHNET) website states that Oman is not in the list of countries in the region that have FETP or FETPV programs [2]. The Task Force for Global Health (TEPHINET) website states that Oman is not a member and does not provide applied epidemiology training programs [3]. The Ministry of Health website does not provide information that shows that Oman has an FETP that is explicitly inclusive of animal health professionals or a specific animal health training programs [4].

[1] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 17 August 2020.
[2] The Eastern Mediterranean Public Health Network (EMPHNET). "Country Programs". [http://emphnet.net/?page_id=491]. Accessed 17 August 2020.
[3] Task Force for Global Health (TEPHINET). "Training Programs". [https://www.tephinet.org/training-programs]. Accessed 17 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om]. Accessed 17 August 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

Oman has an overarching national public health emergency response plan in place that addresses planning for multiple communicable diseases with epidemic or pandemic potential. In April 2015, the Directorate General for Disease Surveillance and Control, Ministry of Health, published its "Guide to Public Health Preparedness & Response in Humanitarian Crisis," which outlines the actions and stakeholders in public health emergency preparedness and response. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, states that that part of the strategy is "assisting in strengthening the country's institutional capacity for emergency preparedness, surveillance, and effective response to disease outbreaks." These emergencies include multiple communicable diseases with pandemic potential [2]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2011, mentions the "National Strategic Framework for the Management of Emergencies that is implemented and tested, which allows MoH and relevant health departments to effectively plan, prepare for, and respond to emergencies, which include multiple communicable diseases with pandemic potential. The draft of the National Public Health Emergency Preparedness and Response Plan with a multihazard approach is available (to be adopted and implemented)" [3]. The World Organization for Animal Health (OIE) PVS Evaluation Report for Oman is not publicly available [4].

[1] Ministry of Health. "Guide to Public Health Preparedness & Response in Humanitarian Crisis." April 2015. [https://www.moh.gov.om/documents/236878/0/Guide+to+Public+Health+Preparedness+%26+Response+in+Humanitarian+Crisis]. Accessed 28 August 2020.
[2] World Health Organisation (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 28 August 2020.
[3] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[4] World Organisation for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/][http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 28 August

2020.

3.1.1b

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has updated its emergency preparedness plan in the last three years. The "Guide to Public Health Preparedness & Response in Humanitarian Crisis," published in April 2015, has not been updated since [1]. The World Health Organization's (WHO) Country Co-operation strategy for WHO and Oman 2018–2022 published in 2017 does not include information related to Oman's emergency preparedness plan update [2]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, outlines a "National Strategic Framework for the Management of Emergencies that is implemented," but does not mention when the plan was last updated [3]. The World Organization for Animal Health (OIE) PVS Evaluation report for Oman is not publicly available [4].

[1] Ministry of Health. "Guide to Public Health Preparedness & Response in Humanitarian Crisis." (April 2015). [https://www.moh.gov.om/documents/236878/0/Guide+to+Public+Health+Preparedness+%26+Response+in+Humanitarian+Crisis]. Accessed 12 September 2020.
[2] World Health Organisation (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 21 August 2020.
[3] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 21 August 2020.
[4] World Organisation for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 21 August 2020.

3.1.1c

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

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

Current Year Score: 0

There is no publicly available evidence that Oman's emergency preparedness plan includes considerations for pediatric and other vulnerable populations. Oman's Guide to Public Health Preparedness and Response in Humanitarian Crisis, published in April 2015, provides only a few references to pediatric populations, but not for other vulnerable groups. There are no specifics provided about how to address their special needs [1]. For example, in medical screening for new arrivals to Oman, public risk communication, and vaccination efforts, the Guide requires the identification of vulnerable individuals who may need special attention, such as children, pregnant women, and the elderly, but it says nothing about how to handle after identification. The World Health Organization (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information related to emergency plan considerations for pediatric and other vulnerable populations [1]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2011, states that "National Strategic Framework for the Management of Emergencies that is implemented and tested, but does not mention considerations for pediatric and other vulnerable populations [3]. The World Organization for Animal Health (OIE) PVS Evaluation Report for Oman is not publicly available [4].

[1] Ministry of Health. "Guide to Public Health Preparedness & Response in hunmanitarian crisis." (April 2015). [https://www.moh.gov.om/documents/236878/0/Guide+to+Public+Health+Preparedness+%26+Response+in+Humanitarian+Crisis/50f8bbd5-d676-4ce0-b344-020fc659530d] accessed 28 August 2020.
[2] World Health Organisation (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 28 August 2020.
[2] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 28 August 2020.
[3] World Organisation for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 21 August 2020.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has a specific mechanism for engaging with the private sector to assist with outbreak emergency preparedness and response. In their COVID-19 Preparedness and Response Plan entitled "Sultanate of Oman Preparedness and Response to the COVID-19 Pandemic" the private sector is mentioned as part of the national surveillance system but it is not evident what kind of role they play [1]. Oman has a committee to manage emergencies that is led by the Ministry of Health (MoH) and consists of multiple stakeholders. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states "in 1988, a National Emergency Committee was established to oversee emergency preparedness and response activities. The MoH, represented by the sector for Medicinal Response and Public Health, acts as sector lead for health within the Committee" [2]. Furthermore, the website of the Ministry of Defence does not provide information that shows that Oman has a specific mechanism for engaging with the private sector to assist with outbreak emergency preparedness activities [3].

[1] World Health Organization (WHO). "Sultanate of Oman Preparedness and Response to Covid19 Pandemic". [https://apps.who.int/gb/COVID-19/pdf_files/11_06/Oman.pdf] accessed 20 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-

eng.pdf?sequence=1]. Accessed on 20 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om]. Accessed on 20 August 2020.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 1

Oman has a plan in place to implement non-pharmaceutical interventions (NPIs) during a pandemic/epidemic, but guidelines exist only for one disease.

Oman has a MERS-CoV Preparedness and Response Plan, published in July 2013, with certain criteria for NPIs and this counts as a disease-specific plan [1]. When describing NPIs, the MERS-CoV Preparedness & Response Plan does not indicate that the plan can be used for other diseases as well. The Ministry of Health website does not provide any relevant information [2]. Moreover, there is no online presence for an emergency management agency.

[1] Ministry of Health. MERS-CoV Preparedness & Response Plan: 2013. (31 July 2013). [https://www.moh.gov.om/documents/236878/0/MERS+COV+national+preparedness+plan+Oman+2013/e5f90be0-f90d-422b-94c8-0621190a7c34] accessed 29 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 15 September 2020.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has activated a national emergency response plan for an infectious disease outbreak in the past year.

Although the Directorate General for Disease Surveillance & Control, Ministry of Health, published in April 2015, has a "Guide to Public Health Preparedness & Response in Humanitarian Crisis," there is no publicly available evidence that this guide has been activated since the COVID-19 outbreak [1]. The Ministry of Health published an article on March 2, 2020 entitled, "MoH Emphasizes Preparedness Plans," but the article makes no explicit mention of the activation of a national emergency

response [2].

Furthermore, there is no evidence that Oman has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year [3]. There is no information regarding any national-level biological threat-focused exercise on the website of the Ministry of Health [1]. Moreover, no emergency management agency has an online presence.

[1] Ministry of Health. [https://www.moh.gov.om/en/home] Accessed 20 September 2020.
[2] Ministry of Health. 2 March 2020. "MoH Emphasizes Preparedness Plans". [https://www.moh.gov.om/en/-/-2019-ncov-] Accessed 20 September 2020.
[3] World Health Organization (WHO). WHO Extranet—Simulation Exercise. [https://extranet.who.int/sph/simulation-exercise#parallax-process]. Accessed 29 August 2020.

3.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence that the country has undergone an exercise to assess gaps and developed action plans accordingly in the past year. The World Health Organization's (WHO) After Action Review and the Simulation Exercise website does not provide information that Oman has undergone any exercise in the past year to identify a list of gaps and best practices through either an after-action review (post-emergency response) or a biological threat-focused IHR exercise [1,2]. Furthermore, the website of the Ministry of Health does not provide any additional information [3]. In addition, the WHO Oman country profile page does not provide information that indicates that the country has, in the past year, undergone an exercise to identify a list of gaps and best practices through an after-action review (post-emergency) [4]. There is no online presence for an emergency management agency.

[1] World Health Organization (WHO). "After Action Review". [https://extranet.who.int/sph/after-action-review]. Accessed on 29 August 2020.
[2] World Health Organization (WHO). "Simulation Exercise". [https://extranet.who.int/sph/simulation-exercise].Accessed on 29 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om]. Accessed on 29 August 2020.
[4] World Health Organization (WHO). "Oman Country Profile". [https://www.who.int/countries/omn/en/]. Accessed 29 August 2020.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives. Moroever, there is no information regarding any national-level biological threat-focused exercise on the website of the Ministry of Health [1]. The World Health Organization's (WHO) After Action Review and the Simulation Exercise website does not provide information that Oman has undergone any exercise in the past year to identify a list of gaps and best practices through either an after-action review (post-emergency response) or a biological threat-focused IHR exercise [2, 3]. The website of the Ministry of Agriculture and Fisheries and press announcements do not provide any additional information [4]. Further, the WHO Oman country profile page does not provide information that indicates that the country has, in the past year, undergone an exercise to identify a list of gaps and best practices through an after-action review (post-emergency response) [5].

[1] Ministry of Health. [https://www.moh.gov.om]. Accessed on 29 August 2020.
[2] World Health Organization (WHO). WHO Extranet—Simulation Exercise. [https://extranet.who.int/sph/simulation-exercise#parallax-process]. Accessed 19 September 2020.
[3] World Health Organization (WHO). "After Action Review". [https://extranet.who.int/sph/after-action-review]. Accessed on 29 August 2020.
[4] Ministry of Agriculture and Fisheries. [https://www.maf.gov.om/]. Accessed 29 August 2020.
[5] World Health Organization (WHO). "Oman Country Profile". [https://www.who.int/countries/omn/en/]. Accessed 29 August 2020.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Oman has a well-established Emergency Operations Centre that operates at both national and subnational levels. The World Health Organization (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, states that "a recently established emergency operations centre provides a mechanism for dissemination of national policy and the development of plans for public health emergency preparedness and response at all levels (hospital, wilayat, regional, and national)" [1]. Furthermore, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "Oman has a well-developed emergency response operation structure and facility at national and subnational levels apt for proper activation, co-ordination, and continuity of operations in case of an emergency" [2]. The Sendai framework states that Oman has not begun reporting emergencies [3]. Oman's National Action Plan on Antimicrobial Residues (AMR), published in 2017, does not include information related to the Emergency Operations Centre in Oman.

[1] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 22 August 2020.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 22 August 2020.
[3] United Nations Office for Disaster Risk Reduction. "Sendai Framework for Disaster Risk".

[https://sendaimonitor.unisdr.org/]. Accessed 22 August 2020.
[4] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 22 August 2020.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that shows that the Emergency Operations Centre (EOC) conducts/ is required to conduct a drill at least once per year.

The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information related to Emergency Operations Centre drills [1]. The Sendai Framework states that Oman has not begun reporting emrgencies [2]. Further, Oman's National Action Plan on antimicrobial residues (AMR), published in 2017, does not include information related to Emergency Operations Centre drills [3].

The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that part of the recommendation is to "conduct regular simulation exercises/drills to ensure compliance with emergency procedures, as well as co-ordination with other relevant stakeholders," which suggests that no drills are being currently conducted [4]. The website of the Ministry of Health does not include any information related to EOC drills [5].

[1] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 23 August 2020.
[2] United Nations Office for Disaster Risk Reduction. "Sendai Framework for Disaster Risk". [https://sendaimonitor.unisdr.org/]. Accessed 23 August 2020.
[3] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 23 August 2020.
[4] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 23 August 2020.
[5] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 23 August 2020.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that indicates 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 a public health emergency/scenario. The Sendai framework states that Oman has not begun reporting emergencies yet [1]. Further, the website of the Ministry of Health does not include any evidence of such exercise within the last year [2]. There is no online presence of an emergency management agency.

[1] United Nations Office for Disaster Risk Reduction. "Sendai Framework for Disaster Risk". [https://sendaimonitor.unisdr.org/]. Accessed 23 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 23 August 2020.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?
- Is there public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
- Are there publicly available standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is no evidence that Oman's public health and national security authorities have conducted an exercise to respond to a potential deliberate biological event, nor is there evidence that there are available standard operating procedures, guidelines, MOUs or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack). Further, there is no evidence of publicly available guidelines or agreements between health and security authorities. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not include information related to biological event exercise or agreements between health and security authorities [1]. The Oman National Action Plan on Antimicrobial Residues (AMR), published in 2017, does not include information related to biological event exercises or agreements between health and security authorities. [2] The Joint External Evaluation (JEE) Mission Report, conducted in April 2017, states that part of the recommendations is to implement" an all-of-government approach to selected emergencies, which currently includes natural hazards, chemical, biological, and radionuclear (CBRN) threats, and manmade incidents." This suggests that Oman has not carried out an exercise to respond to biological threats [3].

[1] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 23 August 2020.
[2] Ministry of Health. "Oman National Action Plan on AMR (2017)". [http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=239348]. Accessed 23 August 2020.
[3] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-

eng.pdf?sequence=1]. Accessed 23 August 2020.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that the strategy (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. The Health Education and Awareness programs in Oman develop messages for different audiences in multiple languages using all media. Further, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that Oman scored 5/5 for public communication and states that "the Health Education and Awareness programs develop messages and materials for communication with a wide general public and different target audiences. This relies on the continuous engagement of the public and different media to reach large numbers of persons and communities and to achieve comprehensive geographical coverage, in relevant languages." The context in which communication is mentioned in the report includes public emergencies [1].

[1] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 23 August 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Oman has a national public health emergency response plan that includes risk communication. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that risk communication is a part of the health emergency operation framework, with dedicated staff and financial resources to execute it when necessary. The report states that the [Ministry of Health] understands the importance of the risk communication strategy for adequate response and preparedness. The health education and awareness program is well organized and has mechanisms to put in place effective risk communication responses when necessary. Moreover, there is dedicated staff and financial resources for this program. Risk communication is a part of the health emergency operation framework [1]. On March 20, 2019, the Ministry of Health and World Health Organization (WHO) organized a workshop on risk communication [2]. The press release stated that "organizing this training workshop came to raise the efficiency of national risk communication and the ability to involve the community members, and focusing on the potential public health

risks that may pose a threat at the national and regional levels" [2].

[1] World Health Organisation (WHO). (2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 23 Augsut 2020.
[2] Ministry of Health. 20 March 2019. "MOH & WHO Organize Workshop on Risk Communication". [https://www.moh.gov.om/en/-/--1001]. Accessed on 23 August 2020.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Oman has designated a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission, conducted in April 2017, states that "Oman has shown a proactive approach and very good capacity in risk communication. The designated area in MoH is Health Education in coordination with Public Relations and Communication." It also adds that "there is an assigned budget line for communications personnel, materials and activities for emergencies, as well as an allocated annual budget for Health Education and Awareness programs." [1]. However, it does not specify if there is a designated position within the government to serve as the primary spokesperson to the public during a public health emergency. The Ministry of Health website provides no information in this regard [2].

[1] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 23 Augsut 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 19 September 2020.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 2

There is publicly available evidence that the public health system has actively shared messages via online media platforms (e.g., social media, websites) to inform the public about ongoing public health concerns and/or dispel rumors, misinformation, or disinformation. These messages include statistics (number of people infected), public health awareness, and public calls—for example, calling for blood donations. Even prior to the COVID-19 pandemic, the ministry periodically shared educational health messages and messages that combat rumors, misinformation, or disinformation [1]. On August 4,

2019, the Facebook page of the Ministry of Health posted a clarification regarding 3,100 deaths, allegedly the number of childern who died after they were born in Oman. The ministry deemed this figure to be misinformation. The ministry clarified that this figure is the total number of all deaths and not those of childern alone [2]. Moreover, during the COVID-19 pandemic, the ministry has been sharing daily messages regarding the health crisis [3].

[1] Ministry of Health Facebook Page. [https://www.facebook.com/OmanHealth/?ref=page_internal]. Accessed 20 September 2020.
[2] Ministry of Health Facebook Page. 4 August 2019. [https://www.facebook.com/OmanHealth/posts/2102857296687800]. Accessed 14 October 2020.
[3] Ministry of Health Facebook Page. 20 September 2020. [https://www.facebook.com/OmanHealth/posts/2415185938788266]. Accessed 20 September 2020.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no evidence that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases in the past two years. No evidence was found via leading local media outlets, Oman Daily, Oman Info, and Atheer newspapers [1, 2, 3]. Moreover, no information was found on BBC or Alarabiya [4,5].

[1] Oman Daily newspaper. [https://www.omandaily.om/]. Accessed 29 August 2020.
[2] Oman Info Newspaper. [https://omaninfo.om/oman.moi]. Accessed 29 August 2020.
[3] Atheer Newspaper. [https://www.atheer.om/]. Accessed 29 August 2020.
[4] BBC. [https://www.bbc.com/]. 17 September 2020.
[5] Alarabiya. [https://english.alarabiya.net/]. Accessed 17 September 2020.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 92.41

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: 138.23

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: 6.19

2018-2019

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: 6.0

2018-2019

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 Oman has issued a restriction on the export/import of medical goods (e.g., medicines, oxygen, medical supplies, perosnal protective equipment (PPE)) due to an infectious disease outbreak without international/bilateral support. As per the International Trade Center, Oman has banned exports of masks and hand sanitizers [1]. The World Trade Organization also states that there is a "temporary export ban on face masks due to the COVID-19 pandemic" [2]. However, there is no publicly available evidence that these bans were instituted with international/bilateral support. Furthermore, the websites of the Ministry of Health, Ministry of Agriculture and Fisheries, Ministry of Foreign Affairs, and Bawabaa newspaper

do not provide any additional information in this regard [3,4,5,6].

[1] International Trade Center. "COVID-19 Temporary Trade Measures". [https://www.macmap.org/covid19]. Accessed 29 August 2020.
[2] World Trade Organization. "COVID-19 and Trade-Oman". [https://www.wto.org/english/tratop_e/covid19_e/covid_details_by_country_e.htm?country=OMN]. Accessed 29 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om]. Accessed on 12 October 2020.
[4] Ministry of Agriculture and Fisheries. [https://www.maf.gov.om/] Accessed 12 October 2020.
[5] The Ministry of Foreign Affairs. [https://www.mofa.gov.om/]. Accessed 12 October 2020.
[6] Bawabaa News. [https://bawabaa.org/]. Accessed 12 October 2020.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 0

There is publicly available evidence that Oman has issued a restriction on the export/import of non-medical goods (e.g. medicines, oxygen, medical supplies, personal protective equipment (PPE)) due to an infectious disease outbreak without international/bilateral support. According to the International Trade Center, Oman "stopped the exports of onions, garlic, flour, and wheat. This measure has been implemented in response to the Covid-19 emergency" [1]. However, there is no publicly available evidence that this ban was instituted with international/bilateral support. The websites of the Ministry of Health, Ministry of Agriculture and Fisheries, the Ministry of Foreign Affairs, and Bawabaa newspaper do not provide any additional information in this regard [2,3,4,5].

[1] International Trade Center. "COVID-19 Temporary Trade Measures". [https://www.macmap.org/covid19]. Accessed 29 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om]. Accessed on 12 October 2020.
[3] Ministry of Agriculture and Fisheries. [https://www.maf.gov.om/] Accessed 12 October 2020.
[4] The Ministry of Foreign Affairs. [https://www.mofa.gov.om/]. Accessed 12 October 2020.
[5] Bawabaa News. [https://bawabaa.org/]. Accessed 12 October 2020.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0 , No = 1

Current Year Score: 0

There is publicly available evidence that, in the past year, Oman has implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. According to Al Arabiya newspaper, Oman has imposed a "travel ban on all visitors from countries where the coronavirus has spread" [1].

The announcement of the travel ban was made on the Twitter account of the Ministry of Foreign Affairs [2].

[1] Al Arabiya newspaper. 2 March 2020. "Oman Bans Entry of Travelers from Coronavirus-affected Countries". [https://english.alarabiya.net/en/News/gulf/2020/03/02/Oman-bans-entry-of-travelers-from-coronavirus-affected-countries]. Accessed 29 August 2020.
[2] Ministry of Foreign Affairs Twitter Account. 2 March 2020. [https://twitter.com/MofaOman/status/1234543168491806724]. Accessed 29 August 2020.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 200.31

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 419.65

2018

WHO; national sources

4.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of a health workforce strategy in place (which has been updated in the last five years) to identify fields in which there is an insufficient workforce and strategies to address these shortcomings. According to the website of the Ministry of Health (MoH), the Ministry of Health Vision 2050 published in May 2014 is the most recent strategy available [1]. The annual health report of the MoH for 2018 has a chapter on human resources development that presents the number of enrolled and graduated students per medical specialty in Oman and abroad [2]. The websites of the Ministry of Labor and the Ministry of Higher Education have no evidence of such a strategy.

[1] Ministry of Health. May 2014. "Health Vision 2050". [https://www.moh.gov.om/documents/16506/119833/Health+Vision+2050/7b6f40f3-8f93-4397-9fde-34e04026b829]. Accessed 20 August 2020.
[2] Ministry of Health Annual Health Report 2018. "Chapter Five: Human Resources Development" [https://www.moh.gov.om/documents/274609/3563447]. Accessed 12 September 2020.
[3] Ministry of Labor. [https://www.manpower.gov.om/]. Accessed 12 September 2020.
[4] Ministry of Higher Education. [https://www.mohe.gov.om/Search.aspx]. Accessed 12 September 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 147

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: 1

There is publicly available evidence that Oman 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. According to Wasil newspaper, in March 2020, Oman opened an isolation suite with "advanced ventilation systems" [1]. The construction for this isolation suite, which is located inside the Sour Hospital, began in September 2018 [2]. Furthermore, the Ministry of Health's Health Vision 2050, published in May 2014, states that "all hospitals should have isolation rooms and special rooms to accommodate at least 10% of the beds" [3]. However, there is no publicly available technical description about these isolation suites. In addition, there is no information about isolation suites on the website of the Ministry of Health [4].

[1] Wisal Newspaper. 9 March 2020. "The Completion of the Isolation Suite in the Sour Hospital". (اكتمال بناء جناح للعزل الصحي في مستشفى صور). [https://www.wisal.fm/cms/2020/03/41201]. Accessed 24 April 2021.
[2] Atheer Newspaper. 27 September 2018. "Laying the Foundation Stone for the Isolation Suite of Sour Hospital and an

Official Explaining its Cost and Specifications". (وضع حجر الأساس لجناح العزل بمستشفى صور ومسؤول يوضح تكلفته ومواصفاته).
[https://www.atheer.om/archives/480544]. Accessed 24 April 2021.
[3] Ministry of Health. May 2014. "Health Vision 2050".
[https://www.moh.gov.om/documents/16506/119833/Health+Vision+2050/7b6f40f3-8f93-4397-9fde-34e04026b829].
Accessed 24 April 2021.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 24 April 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: 1

There is publicly available evidence that Oman has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the last two years.

In 2020, Oman opened two new facilities with isolation rooms to face increasing demand caused by COVID 19. The website of the Ministry of Health states that "the isolation ward (at Sur Hospital), which is built in an area of 838 m2 at a cost of RO 761,000, consists of 12 air-conditioned individual rooms with toilets, equipped with audio-visual systems to facilitate the communication with the patients." It also mentions the openinig of an isolation center at Sohar, stating, "the isolation center, which is runs by the DGHS- North Al-Batinah, consists of several isolation rooms, outpatients, a laboratory, pharmacy, treatment rooms and other medical facilities and a meeting room" [1,2].

[1] Ministry of Health [https://www.moh.gov.om/en/-/--1476]. Accessed on May 23, 2021.
[2] Ministry of Health [https://www.moh.gov.om/en/-/--35]. Accessed on May 23, 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: 2

There is publicly available evidence that Oman has a national procurement protocol in place that can be utilized by the Ministry of Health (MoH) and Ministry of Agriculture for the acquisition of laboratory needs (such as equipment, reagents, and media) and medical supplies in general for routine needs.

Further, Oman has a manual called Managing Medical Supplies, published by the MoH in 2011, that outlines and covers procedures for the procurement of both laboratory items and medical supplies [1]. The Ministry of Health and all public sector entities must follow a centralized government tender program called Esnad, which is managed by the Tender Board of the Sultanate of Oman, to purchase all types of equipment [2].

The World Health Organization (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, does not cover the procurement system for the health or agriculture ministries [3]. The World Organization for Animal Health (OIE) PVS Evaluation report for Oman is not publicly available [4]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, does not cover the government procurement system of the Ministry of Health and Agriculture [5].

[1] Ministry of Health (MoH). "Managing Medical Supplies" [https://www.moh.gov.om/documents/71477/121151/Managing+Supplies/281f72a1-6496-416b-8e80-d4dfcdea94c8]. Accessed 26 August 2020.
[2] Ministry of Health. "E-tendering". [https://www.moh.gov.om/en/tendering]. [https://etendering.tenderboard.gov.om/product/publicDash]. Accessed 26 August 2020.
[3] World Health Organisation (WHO). "Country Cooperation Strategy for WHO and Oman 2018". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 26 August 2020.
[4] World Organization for Animal Health (OIE). "OIE PVS Evaluation Reports". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/][http://www.oie.int/solidarity/pvs-evaluations/status-of-missions/]. Accessed 26 August 2020.
[5] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 26 August 2020.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 2

There is publicly available evidence that the country has a stockpile of medical supplies (e.g., MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency.

In an article published on March 31, 2020 on its website, the Ministry of Health (MOH) states that the Directorate General of Medical Supplies "affirmed that the Ministry is maintaining a good stock of life-saving medications, medical equipment, and the required lab screening tests to cover the needs of the MOH health institutions. Among the items are those essential for the therapeutic and preventive protocols issued by the Ministry of Health and the World Health Organization, which include antibiotics and anti-virals, as well as personal protective items such as masks and hand sanitizers, etc" [1].

Furthermore, the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, published in April 2017, states that "strategic stocks and stockpiles for medicine, food and non-food items exist and are being managed by a number of governmental and non-governmental authorities." The JEE adds that "National resources have been mapped

for IHR-relevant hazards and priority risks, and a plan to manage, distribute, and regularly review national stockpiles is in place." However, the JEE also states that "the MoH maintains medical stockpiles, but there are some deficiencies in maintaining antidotes and medical equipment, mainly due to supplier challenges" and adds as part of the recommendations that "resource mapping and stockpiling of essential medicines/antidotes and supplies should be established" [2].

[1] Ministry of Health. 31 March 2020. "Directorate General of Medical Supplies Measures amid COVID-19 Pandemic". [https://www.moh.gov.om/en/-/-1-5]. Accessed 26 August 2020.
[2] World Health Organisation (WHO). (2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.59-eng.pdf]. Accessed 26 August 2020.

4.2.2b

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

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

Current Year Score: 0

There is no publicly available evidence that Oman has a stockpile of laboratory supplies (e.g., reagents, media) for national use during a public health emergency. Although a Ministry of Health press release, published on March 31, 2020, states that "the Directorate General of Medical Supplies affirmed that the Ministry is maintaining a good stock of life-saving medications, medical equipment, and the required lab screening tests to cover the needs of the MOH health institutions. Among the items are those essential for the therapeutic and preventive protocols issued by the Ministry of Health and the World Health Organization, which include antibiotics and anti-virals, as well as personal protective items such as masks and hand sanitizers, etc.," there is no clear evidence that labratory supplies like reagents and media are among these items [1]. The Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report, published in April 2017, states that "strategic stocks and stockpiles for medicine, food and non-food items exist and are being managed by a number of governmental and non-governmental authorities." However, there is no clear evidence of an exisiting stockpile of laboratory supplies [2].

[1] Ministry of Health (MoH). 31 March 2020. "Directorate General of Medical Supplies Measures Amid COVID-19 Pandemic ". [https://www.moh.gov.om/en/-/-1-5]. Accessed 26 August 2020.
[2] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.59-eng.pdf]. Accessed 26 August 2020.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

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

The Ministry of Health website mentioned in 2020 that "The Director General of Medical Supplies (DGMS) Pharmacist. Nussaiba Habib emphasized the Ministry's continuing work to follow up on providing and reinforcing available stock to

ensure that all the requirements of combating the epidemic are met continuously in sufficient quantities, including medicines, medical supplies, and medical textiles for medical staff." Moreover, it states, "the administration, directors, and heads at the DGMS are following up supplies around the clock from their homes after official hours by activating the technical link to the automated inventory management system in the Directorate to achieve the continuity of follow-up procedures in providing the additional quantities required to combat the pandemic as well as finding alternative urgent sources of supply that meet the specifications of good manufacturing" [1].

The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, published in April 2017, states that "strategic stocks and stockpiles for medicine, food and non-food items exist and are being managed by a number of governmental and non-governmental authorities." The JEE adds, "national resources have been mapped for IHR-relevant hazards and priority risks, and a plan to manage, distribute, and regularly review national stockpiles is in place." However, the JEE also states that "the MoH maintains medical stockpiles, but there are some deficiencies in maintaining antidotes and medical equipment, mainly due to supplier challenges," and adds as part of the recommendations that "resource mapping and stockpiling of essential medicines/antidotes and supplies should be established" [2]. The JEE does not provide any evidence on the frequency by which the country conducts a regular review of national stockpiles.

[1] Ministry of Health [https://www.moh.gov.om/en/-/-1-5]. Accessed on 23 May, 2021.
[2] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.59-eng.pdf]. Accessed 26 August 2020.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

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

Current Year Score: 0

There is neither publicly available evidence of a plan/agreement to leverage domestic manufacturing capacity to produce nor to procure medical supplies (e.g., MCMs, medicines, vaccines, equipment, persoanl protective equipment (PPE)) for national use during a public health emergency.

According to a news article by Radio Merge FM, Oman's Ministry of Commerce and Industry (MoCI) is building five new facilities for manufacturing of medical products. The article states that the "the MoCI continues supporting medical industries to meet the unprecedented demand for protective supplies and other medical items, with an emphasis on items of personal protection against COVID-19 like face-masks, gloves, and sanitizers, among other medical products." Moreover, the article also states that the "Director General of the Directorate General of Pharmaceutical Affairs and Drug Control said that the Ministry seeks to raise the production of medical drugs to 20 percent by 2025 to help keep pace with the rising demand for such industries, and augment rates of self-sufficiency." [1]. However, it is not evident if these facilities are being built as part of a plan/mechanism to leverage domestic manufacturing capacity to produce medical supplies for national use during future public health emergencies or this is only for the COVID-19 pandemic.

The Joint External Evaluation (JEE) of IHR Core Capacities of the Sultanate of Oman Mission Report, published in April 2017, states that an"agreement exists for countermeasure procurement within the limit of GCC countries," and that "the country has demonstrated the ability to produce some medications and medical supplies," but that "there is a need to develop SOPs that outline clearly the procurement of MCMs" [2]. According to an article published by Supply Chain, on June 3, 2020, the "Gulf Joint Procurement program helps to standardise medicine supply in the GCC," but it does not mention emergency situations [3]. Further, the websites of the Ministry of Health, Defence and Interior provide no further relevant information [4,5,6]. There is no online presence for an emergency management agency in the Sultanate of Oman.

[1] Radio Merge FM.. 31 May 2020. "MoCI: Oman to Build 5 New Facilities for Manufacturing of Medical Products" [http://radiomerge.fm/merge/news/moci-oman-to-build-5-new-facilities-for-manufacturing-of-medical-products]. Accessed 28 August 2020.
[2] World Health Organization (WHO). 2-7 April 2017. "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.59-eng.pdf]. Accessed 26 August 2020.
[3] Supply Chain. 3 June 2020. "Gulf Joint Procurement Programme Helps to Standardise Medicine Supply in the GCC". [https://www.supplychaindigital.com/company/gulf-joint-procurement-programme-helps-standardise-medicine-supply-gcc].
[4] Ministry of Health. [https://www.moh.gov]. Accessed on 14 October 2020.
[5] Ministry of Defense. [https://www.mod.gov.om/en-US]. Accessed 14 October 2020.
[6] Ministry of Interior. [https://www.moi.gov.om/ar-om]. Accessed 14 October 2020.

4.2.3b

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

Current Year Score: 0

There is no publicly available evidence that Oman has plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency nor evidence of a plan/mechanism to procure laboratory supplies (e.g., reagents, media) for national use during a public health emergency. Although the Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report (April 2–7, 2017) indicate that Oman has some ability to produce antibiotics and other laboratory supplies nationally, it is not evident what those supplies are [1]. The Ministry of Health (MoH), the Directorate General of Pharmaceutical affairs and Drug Control page within the (MoH) website, Ministry of Defence, and Ministry of Interior do not provide any information about plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g., reagents, media) for national use during a public health emergency nor a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g., reagents, media) for national use during a public health emergency [2,3,4,5].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report" (2-7 April 2017) [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.59-eng.pdf]. Accessed 26 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 26 August 2020.
[3] Directorate General of Pharmaceutical affairs and Drug Control [https://www.moh.gov.om/en/web/dgpadc/introduction]. Accessed 19 September 2020.

[4] Ministry of Defence. [http://www.mod.gov.om/EN-US]. Accessed 19 September 2020.
[5] Ministry of Interior. [https://www.moi.gov.om/ar-om]. Accessed 19 September 2020.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Oman has a plan, program, or guidelines in place for dispensing medical countermeasures for national use during a public health emergency (i.e. antibiotics, vaccines, therapeutics, and diagnostics). However, Oman has demonstrated its ability in the past to dispense medical countermeasures during Hajj, a malaria outbreak in Yemen, and the 2014 Ebola epidemic in West Africa. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "Oman also has experience in deploying medical countermeasures during Hajj time, and has sent medical countermeasures for malaria to Yemen during the 2014–2015 West Africa Ebola epidemic," but there is no mention of a plan [1]. The Ministry of Defence and Ministry of Health websites do not provide information about dispensing plans and medical countermeasures for national use during a public health emergency [2, 3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 23 August 2020.
[2] Ministry of Defense. [http://www.mod.gov.om]. Accessed 23 August 2020.
[3] Ministry of Health. [https://www.moh.gov.om/]. Accessed 23 August 2020.

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

4.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is a plan to receive personnel during a public health emergency, but it is not available to the public. This plan has been tested in the past, when Oman received consultants from the World Health Organization (WHO) in March 2013 to assess a measles outbreak close to the border with Yemen. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that "decisions are taken by the Royal Office based on advice given by the [Ministry of Health]. The team was informed that necessary procedures exist but are not in the public domain. Oman has never activated the system for receiving international assistance, but has received consultants from the WHO Regional Office for the Eastern Mediterranean to assess the situation of measles outbreaks close to the Yemeni border in the past" [1,2]. The Ministry of Defence website does not provide information about a plan to receive health personnel from other

countries to respond to a public health emergency [3].

[1] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 27 August 2020.
[2] World Health Organization (WHO). "Review of Measles Elimination Status, 6 March 2013". [http://www.emro.who.int/omn/oman-news/elimination-of-measles-2-6-march-2013.html]. Accessed on 27 August 2020.
[3] Ministry of Defence. [http://www.mod.gov.om]. Accessed 27 August 2020.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 3

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.1

2014

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

4.4.1c

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

Input number

Current Year Score: 106.47

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the government has issued a legislation, policy, or a public statement committing to provide prioritized healthcare services to healthcare workers who become sick as a result of responding to a public health emergency. The Ministry of Health website does not provide information on this, and nor does the Ministry of Defense [1,2].

[1] Ministry of Health. [https://www.moh.gov.om]. Accessed 27 August 2020.
[2] Ministry of Defense. [http://www.mod.gov.om]. Accessed 27 August 2020.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there is a system in place for public health officials and healthcare workers to communicate during a public health emergency. There is no evidence via the websites of the Ministry of Health and Defense [1,2]. Further, no relevant national planning or emergency planning documents were found.

[1] Ministry of Health. [https://www.moh.gov.om]. Accessed 25 August 2020.
[2] Ministry of Defense. [http://www.mod.gov.om]. Accessed 25 August 2020.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there is a system in place for public health officials and healthcare workers to communicate during a public health emergency, or that it encompasses healthcare workers in both the public and private sector There is no evidence via the websites of the Ministry of Health and Defence. [1,2] No relevant national planning or emergency planning documents were found.

[1] Ministry of Health. [https://www.moh.gov.om]. Accessed 25 August 2020.
[2] Ministry of Defense. [http://www.mod.gov.om]. Accessed 25 August 2020.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the national public health system monitors for or tracks the number of healthcar-associated infections (HCAIs) that take place in healthcare facilities. HCAIs are monitored and tracked as part of the surveillance program and the Gulf Co-operation Council (GCC) HCAI Surveillance Plan. The Ministry of Health Oman Antimicrobial Resistance Surveillance System's first annual report, for the year 2017 (published in September 2018, latest verion available publicly), states that "by the end of 2017, several international and national reports addressed the risk of Candida auris as an emerging pathogen causing healthcare associated infection. The program included C. auris in surveillance system and a national guideline for reporting and diagnosis was shared with all healthcare facilities (Section 9 Emerging AMR Pathogens). The result of this surveillance will come as part of a 2018 report to reflect national burden of this emerging pathogen over a one year" [1]. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conducted in April 2017, states that a "systemic HCAI surveillance at the national level has not yet been established" [2]. The World Health Organization (WHO) "Monitoring Global Progress on Addressing Antimicrobial Resistance," published in July 2018, does not cover HCAIs in Oman [3]. The Ministry of Health websites provides no relevant information [4].

[1] Ministry of Health. "Oman Antimicrobial Resistance Surveillance System Annual Report 2017 (September 2018)". [https://www.researchgate.net/profile/Amal_Al-Maani/project/Antimicrobial-Resistance/attachment/download/OMASS+Anual+Report+-+2017.pdf?context=ProjectUpdatesLog]. Accessed 6 May 2021.
[2] World Health Organization (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 6 May 2021.
[3] World Health Organisation (WHO). "Monitoring Global Progress on Addressing Antimicrobial Resistance, Analysis Report

of the Second Round of Results of AMR Country Self-assessment Survey (July 2018)".
[http://apps.who.int/iris/bitstream/handle/10665/273128/9789241514422-eng.pdf?ua=1]. Accessed 6 May 2021.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 6 May 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

There is publicly available evidence that there is a national requirement for ethical review (e.g., from an ethics committee or via approval of the Institutional Review Board) before beginning a clinical trial. According to the Ministry of Health guidelines, the "Guidelines for Responsible Conduct of Clinical Studies and Trials," published in August 2010, there is a national requirement for ethical review before conducting a clinical trial, "The Central Research and Ethical Review & Approve Committee (RERAC) is the ultimate authority for authorising research conducted at the various health facilities including hospitals throughout the country." According to the report, the ethical committee is responsible for approving all types of clinical trials [1].

[1] Ministry of Health, Centre of Studies & Research Directorate General of Planning & Studies "Guidelines for Responsible Conduct of Clinical Studies and Trials" (August 2010) [https://mohcsr.gov.om/wp-content/uploads/2016/01/Guide_ClinicalStudiesTrials_Aug16.pdf]. Accessed 25 August 2020.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that there is an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. The Ministry of Health Guidelines for Responsible Conduct of Clinical Studies and Trials report, published in August 2010, does not provide any information about an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics [1]. The Ministry of Health and The Research Council websites do not provide any relevant information [2,3].

[1] Ministry of Health Centre of Studies & Research. "Guidelines for Responsible Conduct of Clinical Studies and Trials".
[https://mohcsr.gov.om/wp-content/uploads/2016/01/Guide_ClinicalStudiesTrials_Aug16.pdf]. Accessed 27 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home] Accessed 20 September 2020.
[3] The Research Council. [https://www.trc.gov.om/trcweb/home]. Accessed 20 September 2020.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that there is a government agency responsible for approving new medical countermeasures for humans. According to the Ministry of Health website, the responsible agency for approving new medical countermeasures for humans is the Directorate General of Pharmaceutical affairs and Drug Control. This is a governmental agency operating under the umbrella of the Ministry of Health, and the Director General. "The Directorate General of Pharmaceutical Affairs and Drug Control is the regulatory body which is responsible for the assurance of effective, safe and good quality drugs in Oman whether manufactured locally in Oman or exported from outside the sultanate, and that will be achieved by implementing the pharmacy practice law issued against the Royal Decree No 41/ 91 and its amendments" [1].

[1] Ministry of Health. "Directorate General of Pharmaceutical affairs and Drug Control". [https://www.moh.gov.om/en/web/dgpadc]. Accessed 27 August 2020.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there is an expedited process for approving medical countermeasures for human use during public health emergencies. The Ministry of Health General Directorate of Pharmacy and Drug Control does not provide information that shows that there is such an expedited process [1].

[1] Ministry of Health. "General Directorate of Pharmacy and Drug Control". [https://www.moh.gov.om/ar/web/dgpadc]. Accessed 27 August 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that pandemics are integrated into the national risk reduction strategy. According to Omanuna, the official eGovernment services portal in Oman, the National Committee for Civil Defense is the entity that developed the country's disaster risk response plan, the response plan makes a clear reference to the pandemics, but no reference to any reduction strategy [1]. Furthermore, the Ministry of Health provides no relevant information. There is no online presence for an emergency management agency.

[1] Omanuna. "Emergency and Disaster Procedures". [http://www.oman.om/wps/portal/index/cr/lawsafetysecurity/emergencydisasterprocedures]. Accessed 25 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 20 September 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 0

There is insufficient publicly available evidence that Oman has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regard to public health emergencies.

According to the Gulf Co-operation Council (GCC) website, Oman has public health cross-border agreements with the GCC countries. The Human and Environment Agreements page, Article 11, mentions explicitly public health emergecies, but does not refer to a committment to cooperation at times of emergency [1]. As per the Bawabaa newspaper, GCC health undersecretaries held their tenth meeeting on August 13, 2020 to discuss the COVID-19 pandemic [2]. Although there is no explicit reference to this particular article to any agreement, these cooperation efforts appear to be under the framework that the agreement has established. The Joint External Evaluation (JEE) of IHR Core Capacities of The Sultanate of Oman Mission Report, conduct in April 2017 states that "the Sultanate is part of international agreements on public health protection and cross-border collaboration with the rest of the GCC." However, the report does not state whether these agreements cover public health emergencies [3]. The Ministry of Health provides no relevant information in this regard [4].

[1] GCC Council. "Human and Environment Agreements". [http://www.gcc-sg.org/ar-sa/CooperationAndAchievements/Achievements/CooperationinthefieldofHumanandEnvironmentAffairs/Pages/CooperationintheFiledofHealth.aspx]. Accessed 24 April 2021.
[2] Bawabaa Newspaper. "The 10th meeting of GCC Health Undersecrateries to discuss recents updates in regards to COVID-19". (13 August 2020). (الاجتماع الـ 10 لوكلاء وزارات الصحة بدول مجلس التعاون لمناقشة مستجدات فيروس كورونا).
[https://bawabaa.org/news/473018] Accessed 24 April 2021.
[3] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 24 April 2021.
[4] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 24 April 2021.

5.2.1b

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

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

Current Year Score: 0

There is no evidence that Oman has cross-border agreements, protocols, or memorandums of understanding (MOUs) with neighboring countries, or as part of a regional group, with regard to animal health emergencies. According to the Gulf Co-operation Council (GCC) website, Oman has public health cross-border agreements with the GCC countries. However, the website does not state that these agreements include animal health emergencies [1]. The Joint External Evaluation (JEE) of

IHR Core Capacities of The Sultanate of Oman Mission Report, conduct in April 2017, states that "the Sultanate is part of international agreements on public health protection and cross-border collaboration with the rest of the GCC." However, the report does not state whether these agreements cover animal health emergencies [2]. Al Bayan, an Emirati newspaper, published an article in November 2018 that mentioned that there are many agreements between Oman and the UAE with regard to healthcare, but it does not state that these agreements include public health emergencies [3]. Furthermore, Oman's country profiles on the World Organization for Animal Health (OIE) and UN Food and Agriculture Organization (FAO) websites do not provide information that indicates that the country has cross-border agreements, protocols, or MOUs with neighbouring countries, or as part of a regional group, with regard to animal health emergencies [4,5].

[1] GCC Council. "Human and Environment Agreements". [http://www.gcc-sg.org/ar-sa/CooperationAndAchievements/Achievements/CooperationinthefieldofHumanandEnvironmentAffairs/Pages/CooperationintheFiledofHealth.aspx]. Accessed 25 August 2020.
[2] World Health Organisation (WHO). "Joint External Evaluation of IHR Core Capacities of The Sultanate of Oman Mission Report (2-7 April 2017)". [http://apps.who.int/iris/bitstream/handle/10665/259454/WHO-WHE-CPI-REP-2017.59-eng.pdf?sequence=1]. Accessed 25 August 2020.
[3] Al Bayan. "Oman-UAE relationships". [https://www.albayan.ae/across-the-uae/news-and-reports/2018-11-17-1.3411622]. Accessed 25 August 2020.
[4] United Nations Food and Agriculture Organisation (FAO). "Oman country profile". [http://www.fao.org/countryprofiles/index/en/?iso3=OMN]. Accessed 25 August 2020.
[5] World Organisation for Animal Health (OIE). "Oman country profile". [http://www.oie.int/en/animal-welfare/improved-animal-welfare-programme/oman/]. Accessed 25 August 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1 , No = 0

Current Year Score: 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: 1

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 no publicly available evidence that the country has allocated national funds to improve capacity to address epidemic threats within the past three years. Even though Oman Health Vision 2050 published by the Ministry of Health in 2014 outlines measures to enhance the country's health sector and its response to emergencies, there is no public evidence that it is being implemented on the ground. In addition, the Vision provides no explicit reference to allocation of national funds to improve capacity to address epidemic threats [1]. Further, the Atheer Newspaper published the 2020 budget in detail, but there is no reference to any funding allocated to improve capacity to address epidemic threats [2]. The websites of the Ministry of Health and Ministry of Agriculture and Fisheries provide no relevant information in this regard [3,4].

[1] Ministry of Health. "Health Vision 2050". [https://www.moh.gov.om/documents/16506/119833/Health+Vision+2050/7b6f40f3-8f93-4397-9fde-34e04026b829]. Accessed 24 April 2021.
[2] Atheer Newspaper. "Ministry of Finance publishes the detailed budget for 2020. (1 January 2020). (المالية تصدر بيانًا تفصيليًا عن موازنة 2020) [https://www.atheer.om/archives/514263]. Accessed 24 April 2021.
[3] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 18 September 2020.
[4] Ministry of Agriculture and Fishery. [https://www.maf.gov.om/]. Accessed 24 April 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 that there is a publicly identified special emergency public financing mechanism and funds that Oman 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 pathways identified through a public health or state of emergency act). The website of the International Development Association (IDA) states that Oman is not among the countries that are eligible for funding [1]. The Pandemic Emergency Financing Facility operational brief that was published in November 2017 states the conditions for receiving emergency funding; Oman is not eligible to receive emergency funding as per the conditions [2]. The United Nations (UN) Central Emergency Response Fund 10-Year Report published in 2016 states that Oman has donated to the fund, but it does not list Oman as one of the countries that are eligible for emergency funding [3]. The website of the Ministry of Health does not provide information that shows that there is a publicly identified special emergency public financing mechanism and funds that Oman can access in the face of a public health emergency [4].

[1] International Development Association (IDA). "Borrowing Countries". [http://ida.worldbank.org/about/borrowing-countries]. Accessed 25 August 2020.
[2] Pandemic Emergency Financing Facility (PEF). November 2017. "Operational Brief for Eligible Countries". [http://pubdocs.worldbank.org/en/574211510673362977/PEF-Operational-Brief-Nov-2017.pdf]. Accessed 25 August 2020.
[3] United Nations Central Emergency Response Fund. "10 Years Report". [https://reliefweb.int/sites/reliefweb.int/files/resources/CERF10layout_AR_20160518.compressed.pdf]. Accessed 25 August 2020.
[4] Ministry of Health. [https://www.moh.gov.om]. Accessed 25 August 2020.

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

5.5.4a

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

Current Year Score: 0

There is no publicly available evidence that senior leaders (the president or ministers) have made a public commitment to support other countries to improve capacity to address epidemic threats by providing financing or support in the past three years or to improve its own domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity in the past three years. Further, Oman has made commitments to enhance its domestic capacity and has made multiple commitments to support other countries to improve capacity to address epidemic threats, such as a commitment of more than US$7m to the World Health Organization (WHO) and the United Nations (UN), and a commitment to donate US$3m to support childhood immunization. According to Global Health Security Funding Tracking Dashboard, Oman committed US$7.7m between 2014 and 2018 and disbursed US$7.2m to the UN, the WHO, and other organizations [1]. An article published by Gavi, the Vaccine Alliance, in May 2015, states that Oman has committed $US3m to Gavi to support childhood immunization [2]. However, there is no publicly available evidence that these funding commitments were made by senior leaders. The health system financing section of the Ministry of Health's Health Vision 2050 states multiple funding commitments to enhance domestic capacity. However, there is no indication that these commitments were made by senior leaders [3]. The website of the Ministry of Foreign Affairs provides no information that indicates that senior leaders have made a public commitment to support other countries to improve capacity to address epidemic threats by providing financing or support in the past three years or to improve its own domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity in the past three years [4].

[1] Georgetown Global Health Security Funding. "Tracking Dashboard". [https://tracking.ghscosting.org/]. Accessed 25 August 2020.
[2] Gavi, the Vaccine Alliance. "Oman Commits US$3 Million to Support Childhood Immunisation". [https://www.gavi.org/library/news/statements/2015/oman-commits-usd-3-million-to-support-childhood-immunisation/]. Accessed 25 August 2020.
[3] Ministry of Health. "Health Vision 2050". (May 2014) [https://www.moh.gov.om/documents/16506/119833/Health+Vision+2050/7b6f40f3-8f93-4397-9fde-34e04026b829]. Accessed 25 August 2020.
[4] Ministry of Foreign Affairs. [https://www.mofa.gov.om/]. Accessed 25 August 2020.

5.5.4b

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

Current Year Score: 1

There is some evidence that Oman has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats in the last three years; however, there is no evidence that it has provided other countries with financing or technical support to improve capacity to address epidemic threats.

According to the Georgetown Global Health Security Tracking, the total funds received by Oman from 2014 to 2020 is 6.01m USD. Top funding categories included workforce development, national legislation and policy, and reporting with only minor amounts geared toward real-time surveillance, immunization, and antimicrobial resistance [1].

There is no evidence available on the websites of the Ministry of Health or Ministry of Foreign Affairs regarding whether Oman has provided other countries with financing or technical support to improve capacity to address epidemic threats [2]. The World Health Organization's (WHO) Country Co-operation Strategy for WHO and Oman 2018–2022, published in 2017, and the WHO country page for Oman do not include any relevant information in this regard [3,4].

[1] Georgetown Global Health Security Funding. "Tracking Dashboard". [https://tracking.ghscosting.org/details/174/recipient]. Accessed 4 May 2021.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 4 May 2021.
[2] Ministry of Foreign Affairs. [https://www.mofa.gov.om/?lang=en] Accessed 4 May 2021.
[3] World Health Organization (WHO). "Country Co-operation Strategy for WHO and Oman 2018-22". [http://apps.who.int/iris/bitstream/handle/10665/259861/WHO-EM-PME-007-E-eng.pdf?sequence=3]. Accessed 4 May 2021.
[4] World Health Organization. "Oman Country Page". [https://www.who.int/countries/omn/en/]. Accessed 4 May 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 that Oman has a plan or policy to share genetic data, epidemiological data, clinical specimens, and/or isolated specimens (biological materials) with international organizations and/or other countries that goes beyond influenza. The Ministry of Agriculture and Fisheries and the Ministry of Health websites do not include information related to sharing genetic data, epidemiological data, or clinical specimens [1,2]. The World Health Organization's (WHO) Oman country profile website provides no information demonstrating that Oman has a plan or policy to share genetic data, epidemiological data, clinical specimens, and/or isolated specimens (biological materials) with international organizations and/or other countries that goes beyond influenza [3]. The websites of three newspapers—BBC, Oman Daily, Alroya and Alwatan—do not provide information that demonstrates that Oman has a plan or policy to share genetic data, epidemiological data, clinical specimens, and/or isolated specimens (biological materials) with international organizations and/or other countries that goes beyond influenza [4,5,6,7].

[1] Ministry of Agriculture and Fisheries. [http://www.maf.gov.om/]. Accessed 24 August 2020.
[2] Ministry of Health. [https://www.moh.gov.om/en/home]. Accessed 13 September 2020.
[3] World Health Organization (WHO). "Oman Country Profile". [https://www.who.int/countries/omn/en/]. Accessed 24 August 2020.
[4] BBC. [http://bbc.com]. Accessed 24 August 2020.
[5] Oman Daily. [http://www.omandaily.om/]. Accessed 24 August 2020.
[6] Alroya. [https://alroya.om/]. Accessed 24 August 2020.
[7] Alwatan. [http://alwatan.com/] Accessed 24 August 2020.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence that the country has not shared samples in accordance with the PIP framework in the past two years. The World Health Organization's (WHO) Pandemic Influenza Preparedness Framework Annual Report for 2016 states that Oman is a priority country and does not state that Oman has not shared samples in accordance with the PIP framework in the past two years [1]. No more recent editions of this report are available online. Further, the WHO's Oman country profile page does not provide information that shows that Oman has not shared samples in accordance with the PIP framework in the past two years [2]. The websites of three newspapers—Oman Daily, Alroya and Alwatan, and the BBC—do not provide information that indicates that Oman has not shared samples in accordance with the PIP framework in the last two years [3, 4, 5, 6].

[1] World Health Organization (WHO). "Pandemic Influenza Preparedness Framework Annual Report (2016)". [http://apps.who.int/iris/bitstream/handle/10665/258844/WHO-WHE-IHM-PIP-2017.01-eng.pdf?sequence=1]. Accessed 28 August 2020.
[2] World Health Organization (WHO). "Oman Country Profile". [https://www.who.int/countries/omn/en/]. Accessed 28 August 2020.
[3] BBC. [http://bbc.com]. 28 August 2020.
[4] Oman Daily. [http://www.omandaily.om/]. Accessed 28 August 2020.
[5] Alroya. [https://alroya.om/]. Accessed 28 August 2020.

[6] Alwatan. [http://alwatan.com/] Accessed 28 August 2020.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence that the country has not shared pandemic pathogen samples during an outbreak in the past two years. The World Health Organization's (WHO) Oman country profile page does not provide information that shows that Oman has not shared pandemic pathogen samples during an outbreak in the past two years [1]. Further, tThe websites of three newspapers—Oman Daily, Alroya and Alwatan, and the BBC—do not provide information that indicates that Oman has not shared pandemic pathogen samples during an outbreak in the past two years [2,3,4,5].

[1] World Health Organization (WHO). "Oman Country Profile". [https://www.who.int/countries/omn/en/]. Accessed 28 Augsut 2020.
[2] BBC. [http://bbc.com]. Accessed 28 Augsut 2020.
[3] Oman Daily. [http://www.omandaily.om/]. Accessed 28 August 2020.
[4] Alroya. [https://alroya.om/]. Accessed 28 Augsut 2020.
[5] Alwatan. [http://alwatan.com/] Accessed 28 August 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 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: 0

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 54

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 0

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: 4

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 96.1

2017

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: 0.7

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: 0.03

2008-2018

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

Greater than 50% = 2, Between 25-50% = 1, Less than 25% = 0

Current Year Score: 0

There is no publicly available evidence that provides an exact or approximate share of employment in the informal sector in Oman.

Oman's country profile on Employment and Decent Work conducted in 2018 by the International Labor Organization (ILO) states that "there is no available statistics in English on the informal employment in Oman" [1]. The World Bank's World Development Indicator database does not have data on Oman's share of employment in the informal sector [2]. In an article published by Aljazeera newspaper in 2001 on Oman, it was mentioned that there are no public and accredited statistics regarding informal employment in the country yet [3]. Further, the National Center for Statisitc and Information does not have data on Oman's share of employment in the informal sector [4].

[1] International Labor Organization (ILO). "Employment and Decent Work". [https://www.unescwa.org/sites/www.unescwa.org/files/page_attachments/l1800208.pdf] accessed 3 May 2021.
[2] World Bank. "World Development Indicators". [https://databank.worldbank.org/source/world-development-indicators]. Accessed 3 May 2021.
[3] Aljazeera News. "Oman: Tighten Restrictions for Illegal Workers" (16 April 2001) (سلطنة عمان :تشديد القيود على العمالة غير الشرعية). [https://www.aljazeera.net/ebusiness/2001/4/16]. Accessed 3 May 2021.
[4] The National Center for Statisics and Information. [https://www.ncsi.gov.om/Pages/AllIndicators.aspx]. Accessed 3 May 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: 0.31

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: 4

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: 85.44

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: -0.0

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: 3

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: 77.63

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: 683.6

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 2.45

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 9.6

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 27

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: 91.94

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 99

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: 1516.1

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