Australia

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

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

Australia has a national AMR plan, which covers surveillance, detection and reporting of priority AMR pathogens. The Australian government published "Australia's National Antimicrobial Resistance Strategy - 2020 and Beyond" on 13 March 2020 [1]. The plan includes Australia's 20 year vision for AMR. [1] The Australian government released an associated AMR Strategy Implementation Plan in November 2016, which outlines focus areas for activity and specific actions being taken at all government and non-governmental levels [2]. All seven objectives of the Antimicrobial Resistance Strategy 2015-2019, and the associated actions outlined in the Implementation Plan comprehensively address surveillance, detection and reporting of priority AMR pathogens. [1, 2] Australia's Joint External Evaluation (JEE) report, published in 2018, provides a broad outline of the country's AMR indicators, though it was published before the latest AMR Resistsance strategy was released. [3]

[1] Australian Government. 13 March 2020. "Australia's National Antimicrobial Resistance Strategy - 2020 and Beyond". [https://www.amr.gov.au/resources/australias-national-antimicrobial-resistance-strategy-2020-and-beyond]. Accessed 11 November 2020.
[2] Government of Australia. November 2016. "Implementation Plan: Australia's first national antimicrobial resistance strategy 2015-19". [https://www.amr.gov.au/resources/national-amr-implementation-plan]. Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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: 2

Australia's laboratory system has the capacity to test for all 7+1 priority AMR pathogens. The Australian Commission on Safety and Quality in Healthcare's "AURA 2017: Second Australian report on antimicrobial use and resistance in human health", published in 2017, states that Australia's laboratory system (via the Antimicrobial Use and Resistance in Australia [AURA] Surveillance System) has the capacity to test for Antimicrobial susceptibility testing for E. coli, K. pneumonia, S. aureus, S. pneumoniae, Salmonella spp., Shigella spp, N. gonorrheae and Mycobacterium tuberculosis, among others [1]. The data for AURA is collected from a number of sources, including "the National Passive AMR Surveillance System, which collects data from public hospitals and health services across Queensland, New South Wales, the Australian Capital Territory, Victoria,

Tasmania, Western Australia and South Australia, as well as one private hospital in Queensland and some private hospitals in South Australia, the Sullivan Nicolaides Pathology information system, which collects data from its own laboratories in Queensland and northern New South Wales; these laboratories service private hospitals, community-based services and aged care homes, the Australian Group on Antimicrobial Resistance (AGAR), which collects data on minimum inhibitory concentrations (MICs) of antimicrobials from laboratories across Australia for selected organism groups, as well as some demographic and outcome data, and undertakes additional characterisation of strains, the National Neisseria Network (NNN), which collects data and undertakes confirmatory susceptibility testing for all N. gonorrhoeae and N. meningitidis cases across Australia, and the National Notifiable Diseases Surveillance System (NNDSS), which collects susceptibility testing data for all confirmed M. tuberculosis cases across Australia" [1]. The report outlines that "three susceptibility testing systems are currently used in laboratories in Australia: Clinical and Laboratory Standards Institute, European Committee on Antimicrobial Susceptibility Testing, and Calibrated Dichotomous Sensitivity (developed in Australia)." [1]. The report mentions only one sentinel surveillance system, for N. gonorrheae [1]. The Joint External Evaluation report (JEE) for Australia, published in 2018, confirms the effectiveness of the AURA system. [2] The JEE assigns Australia a score of 4 for the category "antimicrobial resistance detection", indicating that "designated laboratories have conducted detection and reporting of all priority AMR pathogens for at least one year". [3]

[1] Australian Commission on Safety and Quality in Healthcare. 2017. "AURA 2017: Second Australian report on antimicrobial use and resistance in human health". [https://www.safetyandquality.gov.au/wp-content/uploads/2018/01/AURA-2017-Second-Australian-report-on-Antimicrobial-Use-and-Resistance-in-human-health.pdf.] Accessed 11 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[3] World Health Organization (WHO). 2005. "Joint External Evaluation Tool". [https://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf?sequence=1&isAllowed=y]. Accessed 11 November 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: 1

There is publicly available evidence that Australia conducts detection or surveillance activities for antimicrobial residues or AMR organisms in the wider environment (soil, waterways etc). The Australian Criminal Intelligence Commission includes antimicrobial agents in its licit and illicit drug detection program in wastewater. The National Wastewater Drug Monitoring Program (the Program) commenced in August 2016 and provides coordinated national research and intelligence on illicit drugs and licit drugs that can be abused, with a specific focus on methylamphetamine and other high-risk substances. As part of this, AMR detection also takes place. [1]

[1] Australian Criminal Intelligence Commission. "National Wastewater Drug Monitoring Program reports". [https://www.acic.gov.au/publications/national-wastewater-drug-monitoring-program-reports] Accessed September 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

There is national legislation in place in Australia requiring prescriptions for antibiotic use for humans, and there is no evidence of gaps in implementation. The Joint External Evaluation (JEE) for Australia, published in 2018 states that prescriptions are required for "dispensing most antimicrobial medicines for human use" [1]. The Australian government regulates the prescription of antibiotics through the Department of Health's Therapeutic Goods Administration, which obtains its legislative purchase from the Therapeutic Goods Act of 1989 and the Therapeutic Goods Regulations of 1990, as amended in 1990, 2002, and 2018; and by the Medicines, Poisons, and Therapeutic Goods Act of 2008. [2] There is no evidence in media reports or academic studies of gaps in implementation; further, the JEE describes antimicrobial use as generally being low in Australia, and notes that "public and private human hospitals in all jurisdictions generally have strong AMS [antimicrobial stewardship] programmes including education and outreach for staff and patients". [1]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Australian Government Department of Health. 2018. [https://www.tga.gov.au/legislation-legislative-instruments]. Accessed 11 November 2020.
[3] Australian Government. 2008. "Medicines, Poisons, and Therapeuric Goods Act of 2008". [https://www.legislation.act.gov.au/View/a/2008-26/current/PDF/2008-26.PDF]. Accessed 11 November 2020.

1.1.2b

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

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

Current Year Score: 2

There is national legislation in place in Australia requiring prescriptions for antibiotic use for animals, and there is no evidence of gaps in implementation. The Joint External Evaluation (JEE) for Australia, published in 2018 states that prescriptions are required for "purchasing most antimicrobial medicines for animals" [1]. The Australian Pesticides and Veterinary Medicines Authority regulates veterinary medicines. [1,2] The legislative basis for regulations requiring prescriptions for animals is the Medicines, Poisons, and Therapeutic Goods Act of 2008. [3] There is no evidence in media reports or academic studies of gaps in implementation; further, the JEE describes antimicrobial use as generally being low in Australia, and notes that "the animal health sector has broadly accepted an AMS [antimicrobial stewardship] frame, and development of a formal national system is ongoing. [1]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Australian Pesticides and Veterinary Medicines Authorty. [https://apvma.gov.au/]. Accessed 11 November 2020.
[3] Australian Government. 2008. "Medicines, Poisons, and Therapeuric Goods Act of 2008". [https://www.legislation.act.gov.au/View/a/2008-26/current/PDF/2008-26.PDF]. Accessed 11 November 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

Australia has national guidelines for a number of zoonotic disease. The Department of Health developed the Series of National Guidelines (SoNGs) in consultation with the Communicable Diseases Network Australia and addresses 25 diseases, including Avian Influenza, Ebola virus, MERS-CoV, rabies and Australian bat lyssavirus, and zika. [3, 4, 5, 6, 7, 8] Further, the Department of Health (DoH) and the Department of Agriculture (DAWR) have a Memorandum of Understanding (MoU), signed in October 2017, to work in partnership to detect and respond to zoonotic disease outbreaks [1]. According to the Joint External Evaluation for Australia, published in 2018, "this partnership has included several joint assessments of animal disease risks to human health, and includes agreeing upon standard operating procedures (SOPs) and response guidelines to minimise the risks of, and to manage, zoonotic events" [2]. The MoU states that "the parties have agreed to work together to provide a high level of collaboration... (and) will work closely together to facilitate the successful delivery of the Activity under this MoU", for example through national support for the animal and human health aspects of emerging and zoonotic disease management and involvement [1].

[1] Department of Health. September 2016. "Series of National Guidelines (SoNGs)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cdnasongs.htm]. Accessed 11 November 2020.
[2] Department of Health. September 2016. "Avian Influenza in Humans." [http://www.health.gov.au/internet/main/publishing.nsf/Content/C40727613D966AD6CA257BF0001ED770/$File/Avian-influenza-song.pdf]. Accessed 11 November 2020.
[3] Department of Health. March 2015. "Infection prevention and control principles and recommendations for Ebola Virus Disease." [http://www.health.gov.au/internet/main/publishing.nsf/Content/D9CE7F7977BFB6A8CA257D8D00834F53/$File/ebola-infections-prevention-final-Mar2015.pdf]. Accessed 11 November 2020.
[4] Department of Health. September 2015. "Middle East Respiratory Syndrome Coronavirus CDNA National Guidelines for Public Health Units." [http://www.health.gov.au/internet/main/publishing.nsf/Content/DA7D2B43102293AECA257DC70081C245/$File/MERS-CoV-SoNG-sep2015.pdf]. Accessed 11 November 2020.
[5] Department of Health. March 2013. "Rabies Virus and other Lyssavirus (Including Australian Bat Lyssavirus) Exposures and Infections". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ED62D139B56F7B80CA257BF0001B7422/$File/ABLV-Rabies-SoNG.pdf]. Accessed 11 November 2020.
[6] Department of Health. June 2016. "Zika virus infection." [http://www.health.gov.au/internet/main/publishing.nsf/Content/3686776111FDF479CA258033001CE06F/$File/Zika-virus=SoNG.pdf]. Accessed 11 November 2020.
[7] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[8] Department of Agriculture. 19 October 2017. "Head Memorandum of Understanding for the collaborative working relationship between Department of Agriculture and Water Resources and Department of Health".

[http://www.agriculture.gov.au/biosecurity/partnerships/mou/mou.] Accessed 11 November 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 insufficient evidence that Australia has plans or equivalent strategy documents which include measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. There are several plans on wildlife and animal surveillance related to zoonotic diseases that describe how Australia addresses such risks, but there is no plan, guidance, or law mandating the risk assessments themselves. The Australian Government Department of Health developed the Series of National Guidelines (SoNGs) in consultation with the Communicable Diseases Network Australia and addresses 25 diseases, including Avian Influenza, Ebola virus, MERS-CoV, rabies and Australian bat lyssavirus, and zika. [1, 2, 3, 4, 5, 6] In addition to surveillance objectives and comprehensive step-by-step control strategiesm the SoNGs documents include measures for risk identification and reduction for spillover events, but do not include plans that focus on such risk, or which mandate risk assessements. As an example, the guidelines for Rabies and Australian Bat Lyssavirus describe at-risk populations; for example, individuals such as veterinarians and wildlife officers, whose occupation brings them in close contact with bats. It then describes risk reduction strategies such as targeted prohylactic rabies vaccination. It also identifies reference laboratories and post-exposure courses of action. However, this information is provided as a guideline for individuals and healthcare providers, and is not an overall risk reduction strategy for the viruses it addresses. [5] Australia's Joint External Evaluation (JEE), published in 2018, states that "Risk assessments relating to national biosecurity and some animal disease risks to human health are jointly conducted by the [Department of Health, Department of Agriculture and Water Resources], and other Australian government agencies". However, the JEE does not mention the existence of mandated risk assessment for zoonotic disease spillover. [7] Further, despite Australia's evidently robust planning for zoonotic disease spillover prevention, again, none of the above examples include mandated risk assessments or mitigation. There is no other relevant information shared by the Department of Health or the Department of Agriculture and Water Resources. [8,9]

[1] Department of Health. September 2016. "Series of National Guidelines (SoNGs)".
[http://www.health.gov.au/internet/main/publishing.nsf/Content/cdnasongs.htm]. Accessed 11 November 2020.
[2] Department of Health. September 2016. "Avian Influenza in Humans."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/C40727613D966AD6CA257BF0001ED770/$File/Avian-influenza-song.pdf]. Accessed 11 November 2020.
[3] Department of Health. March 2015. "Infection prevention and control principles and recommendations for Ebola Virus Disease."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/D9CE7F7977BFB6A8CA257D8D00834F53/$File/ebola-infections-prevention-final-Mar2015.pdf]. Accessed 11 November 2020.
[4] Department of Health. September 2015. "Middle East Respiratory Syndrome Coronavirus CDNA National Guidelines for Public Health Units."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/DA7D2B43102293AECA257DC70081C245/$File/MERS-CoV-SoNG-sep2015.pdf]. Accessed 11 November 2020.
[5] Department of Health. March 2013. "Rabies Virus and other Lyssavirus (Including Australian Bat Lyssavirus) Exposures and Infections".
[http://www.health.gov.au/internet/main/publishing.nsf/Content/ED62D139B56F7B80CA257BF0001B7422/$File/ABLV-Rabies-SoNG.pdf]. Accessed 11 November 2020.

[6] Department of Health. June 2016. "Zika virus infection."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/3686776111FDF479CA258033001CE06F/$File/Zika-virus=SoNG.pdf]. Accessed 11 November 2020.
[7] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia".
[https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[8] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.
[9] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 11 November 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

Australia has national guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern. The Australian Government Department of Health developed the Series of National Guidelines (SoNGs) in consultation with the Communicable Diseases Network Australia and addresses 25 diseases, including Avian Influenza, Ebola virus, MERS-CoV, rabies and Australian bat lyssavirus, and zika [1, 2, 3, 4, 5, 6]. The SoNGs outline surveillance objectives and comprehensive step-by-step control strategies. For example, the SoNG for zika, includes guidelines for "monitoring the epidemiology of Zika" and includes a public health unit check list to ensure health professions follow the control strategy [6]. The Joint External Evaluation report for Australia, published in 2018, reports that the "SoNGs provide nationally consistent advice and guidance to public health units when they respond to a notifiable disease event" [7]. The OIE PVS outlines that Animal Health Australia (AHA) manages the development and review of the Australian Veterinary Emergency Plan (AUSVETPLAN). AUSVETPLAN contains the nationally-agreed approach for the response to emergency animal disease incidents in Australia. The plan is captured in a series of manuals including a number of zoonotic diseases of threat to public health, including Avian influenza, rabies, Australian bat lyssavirus, and anthrax [8, 9]. The plans include specific instruction on the monitoring of epidemiology and control of the disease [9].

[1] Department of Health. September 2016. "Series of National Guidelines (SoNGs)".
[http://www.health.gov.au/internet/main/publishing.nsf/Content/cdnasongs.htm]. Accessed 11 November 2020.
[2] Department of Health. September 2016. "Avian Influenza in Humans."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/C40727613D966AD6CA257BF0001ED770/$File/Avian-influenza-song.pdf]. Accessed 11 November 2020.
[3] Department of Health. March 2015. "Infection prevention and control principles and recommendations for Ebola Virus Disease."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/D9CE7F7977BFB6A8CA257D8D00834F53/$File/ebola-infections-prevention-final-Mar2015.pdf]. Accessed 11 November 2020.
[4] Department of Health. September 2015. "Middle East Respiratory Syndrome Coronavirus CDNA National Guidelines for Public Health Units."
[http://www.health.gov.au/internet/main/publishing.nsf/Content/DA7D2B43102293AECA257DC70081C245/$File/MERS-CoV-SoNG-sep2015.pdf]. Accessed 11 November 2020.
[5] Department of Health. March 2013. "Rabies Virus and other Lyssavirus (Including Australian Bat Lyssavirus) Exposures and Infections".
[http://www.health.gov.au/internet/main/publishing.nsf/Content/ED62D139B56F7B80CA257BF0001B7422/$File/ABLV-Rabies-SoNG.pdf]. Accessed 11 November 2020.

[6] Department of Health. June 2016. "Zika virus infection." [http://www.health.gov.au/internet/main/publishing.nsf/Content/3686776111FDF479CA258033001CE06F/$File/Zika-virus=SoNG.pdf]. Accessed 11 November 2020.
[7] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[8] World Organisation For Animal Health. November 2015. "OIE PVS Evaluation Report Australia". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 11 November 2020.
[9] Animal Health Australia. "AUSVETPLAN Manuals and Documents". [https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/]. Accessed 11 November 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 Australia has a unit dedicated to zoonotic disease that functions across ministries. Although the Australian government maintains inter-ministerial coordinating bodies for both human and animal diseases (the Australian Health Protection Principal Committee (AHPPC) and the Consultative Committee on Emergency Animal Disease (CCEAD), respectively), there is no such unit focused exclusively on zoonotic diseases, and according to the Joint External Evaluation (JEE) for Australia, published in 2018, the Department of Health and the Department of Agriculture "do not have an integrated system to regularly review and formalise a joint list of priority zoonotic diseases" [1]. According to the Emergency Response Plan for Communicable Disease Incidents of National Significance prepared by the AHPPC in September 2016, "for an animal health event with real or potential human health consequences, it would be expected that the Department of Health and Department of Agriculture and Water Resources collaborate throughout the response, potentially as co-lead agencies." [2] However, there are zoonotic disease-specific initiatives at the state level, such as the Zoonoses Working Group of the South Australian government [1]. There is no evidence of such a unit on the public websites of the Department of Health, the Department of Agriculture and Water Resources, nor Animal Health Australia; nor does Australia's OIE PVS Evaluation Report mention such a unit [3, 4, 5, 6]. Finally, the Australian Government's Health Security Initiative for the Indo-Pacific region, launched by the Minister for Foreign Affairs on 8 October 2017, "contributes to the avoidance and containment of infectious disease threats with the potential to cause social and economic harms on a national, regional or global scale." The initiative focuses on both human and animal health systems and draws expertise from "relevant Australian government agencies." However, the webpages of the initiative do not provide specific evidence of cross-departmental functioning. [7] Australia's National Action Plan for Health Secuurity 2019-2023 (NAPHS), published in response to the recommendations of the JEE, lists one planned action as "establish a dedicated multisectoral national zoonosis committee or ensure reciprocal animal and human sector representation on their respective national zoonoti disease-related committees". The NAPHS describes this action as "underway". [8]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Department of Health: Australian Health Protection Principal Committee. September 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance." [https://www.health.gov.au/internet/main/publishing.nsf/Content/7A38C92C483C8B77CA25805E001A402D/$File/CDPLAN.pdf]. Accessed 11 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.

[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 11 November 2020.
[5] Animal Health Australia. [https://www.animalhealthaustralia.com.au/]. Accessed 11 November 2020.
[6] World Organisation For Animal Health. November 2015. "OIE PVS Evaluation Report Australia". [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 11 November 2020.
[7] Indo-Pacific Centre for Health Security. [https://indopacifichealthsecurity.dfat.gov.au/]. Accessed 11 November 2020.
[8] Australian Government. December 2018. "National Action Plan for Health Secuurity 2019-2023". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/054D7F36DA7F8F72CA2581A8001278EB/$File/Aust-Nat-Action-Plan-Health-Security-2019-2023.pdf]. Accessed 11 November 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 1

Australia has a national mechanism for owners of livestock to conduct and report on disease surveillance. Animal Health Australia, a not-for-profit public company established in partnership between the government and major national livestock industry organisations, manages the national emergency animal disease hotline and the development and review of the Australian Veterinary Emergency Plan (AUSVETPLAN). [1, 2] According to Animal Health Australia, livestock owners are legally required to notify the government through the Emergency Animal Disease Watch Hotline, their private veterinarian, or the nearest animal health adviser or government veterinarian officer. Failure to report may result in a fine or prosecution [3, 4]. This authority is drawn from the Department of Agriculture and Water Resources and the Intergovernmental Agreement on Biosecurity (January 2012), an agreement between the Commonwealth, state and territory governments (with the exception of Tasmania). [2] The Communicable Diseases Network of Australia, which is housed in the Department of Health, establishes the list of notifiable diseases on a national level which must be provided to the National Notifiable Diseases Surveillance System. [5]

[1] Animal Health Australia. [https://www.animalhealthaustralia.com.au/]. Accessed 13 November 2020.
[2] Animal Health Australia. "AUSVETPLAN Manuals and Documents". [https://www.animalhealthaustralia.com.au/our-publications/ausvetplan-manuals-and-documents/]. Accessed 11 November 2020.
[3] Government of South Australia Primary Industries and Regions SA. February 2018. "Reporting Animal Disease." [http://www.pir.sa.gov.au/biosecurity/animal_health/reporting_animal_disease]. Accessed 11 November 2020.
[4] Animal Health Australia. "Emergency Animal Disease". [https://www.animalhealthaustralia.com.au/what-we-do/emergency-animal-disease/]. Accessed 11 November 2020.
[5] Australian Government Department of Health. June 2018. "Australian national notifiable diseases and case definitions." [http://www.health.gov.au/casedefinitions]. Accessed 11 November 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: 1

There are laws and guidelines that safeguard the confidentiality of information generated through surveillance activities for animals (for owners) in Australia. Animal Health Australia, a government-operated not-for-profit company charged with nationwide animal disease monitoring and reporting, which hosts the Emergency Hotline, maintains compliance with the Australian Privacy Principles which are set out in the Privacy Act 1998. [1, 2, 3, 4, 5] The Australian Privacy Policies include: APP 1 - Open and transparent management of personal information; APP 2 - Anonymity and pseudonymity; APP 3 - Collection of solicited personal information; APP 4 - Dealing with unsolicited personal information; APP 5 - Notification of the collection of personal information; APP 6 - Use or disclosure of personal information; APP 7 - Direct marketing; APP 8 - Cross-border disclosure of personal information/ APP 9 - Adoption, use or disclosure of government related identifiers; APP 10 - Quality of personal information; APP 11 - Security of personal information; APP 12 - Access to personal information; APP 13 - Correction of personal information [1, 2]. APP 2 gives "individuals the option of not identifying themselves, or of using a pseudonym. Limited exceptions apply". [5]

[1] Office of the Australian Information Commissioner. "Australian Privacy Principles". [https://www.oaic.gov.au/privacy-law/privacy-act/australian-privacy-principles]. Accessed 11 November 2020.
[2] Federal Register of Legislation. July 2018. "Privacy Act 1988". [https://www.legislation.gov.au/Details/C2018C00292]. Accessed 11 November 2020.
[3] Australian Government. December 2000. "Privacy Amendment (Private Sector) Act 2000". [https://www.legislation.gov.au/Details/C2004A00748]. Accessed 11 November 2020.
[4] Animal Health Australia. "Privacy Statement". [https://www.animalhealthaustralia.com.au/privacy-statement/]. Accessed 11 November 2020.
[5] Office of the Australian Information Commissioner. "APP quick reference tool". [https://www.oaic.gov.au/agencies-and-organisations/guides/app-quick-reference-tool#app-6-use-or-disclosure-of-personal-information]. Accessed 11 November 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

Australia conducts surveillance of zoonotic disease in wildlife. According to Australia's Joint External Evaluation (JEE), published in 2018, "established systems are in place in all states and territories for the ongoing surveillance of all high priority zoonotic diseases in both humans and animals, including wildlife, livestock and domestic animals"; and "Australia's capacity for the early detection of significant disease incidents in livestock and wildlife (including potentially emerging diseases) is augmented by the funding of private veterinarians to conduct full investigations under the National Significant Disease Investigation Program" [1]. Wildlife Health Australia (WHA) conducts surveillance of zoonotic disease in wildlife on behalf of the Department of Agriculture and Water (DAWR). According to the WHA website, WHA's "core funding is provided through a cost-shared model with funding from the Australian Government Department of Agriculture and Water Resources (DAWR) and all Australian state and territory governments" [3]. It maintains a national electronic database, the Wildlife Health Information System (eWHIS), as well as several surveillance programmes in coordination with sentinel clinics, universities, and others [2]. Examples of zoonotic diseases recently tested for and diagnosed in wildlife include rotavirus, tularaemia, Hendra virus, Zika virus, and others. [4] Its members form a network of government and private stakeholders. Ongoing studies include the Avian Influenza Wild Bird Surveillance programme and Bat Health Focus Group. [5, 6]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.

[2] Wildlife Health Australia. "eWHIS - Wildlife Health Information System". [https://www.wildlifehealthaustralia.com.au/ProgramsProjects/eWHIS-WildlifeHealthInformationSystem.aspx]. Accessed 11 November 2020.
[3] Wildlife Health Australia. "About WHA". [https://www.wildlifehealthaustralia.com.au/AboutUs.aspx]. Accessed 11 November 2020.
[4] Wildlife Health Australia. "Ongoing Incidents". [https://wildlifehealthaustralia.com.au/DiseaseIncidents/OngoingIncidents.aspx]. Accessed 11 November 2020.
[5] Wildlife Health Australia. "Wild Bird Surveillance". [https://www.wildlifehealthaustralia.com.au/ProgramsProjects/WildBirdSurveillance.aspx]. Accessed 11 November 2020.
[6] Wildlife Health Australia. "Bat Health Focus Group". [https://wildlifehealthaustralia.com.au/ProgramsProjects/BatHealthFocusGroup.aspx]. Accessed 11 November 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: 54.82

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 9.71

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 1

Animal Health Australia, a not-for-profit public company established in partnership between the government and major national livestock industry organisations, includes mechanisms for working with the private sector in controlling or responding to zoonoses. According to Australia's Joint External Evaluation, published in 2018, "Australia's capacity for the early detection of significant disease incidents in livestock and wildlife (including potentially emerging diseases) is augmented by the funding of private veterinarians to conduct full investigations under the National Significant Disease Investigation Program" [1]. According to Animal Health Australia, "the National Significant Disease Investigation (NSDI) Program was initiated in June 2009 to facilitate investigation of significant disease events by non-government veterinary practitioners. From July 2016, the scope of NSDI Program activities was expanded to include training of private veterinary practitioners in disease investigation, to increase the level of knowledge, skill and confidence to investigate and report on disease events" [2]. These private veterinary practitioners provide "expertise for evaluating, clinically investigating and reporting outbreaks of significant disease in animals" [2]. These diseases include those mentioned on the notifiable disease list which include a number of zoonotic diseases such as anthrax, Australian bat lyssavirus and salmonella [3].

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Animal Health Australia. Updated May 2018. "National Significant Disease Investigation (NSDI) Program". [https://animalhealthaustralia.com.au/what-we-do/disease-surveillance/national-significant-disease-investigation-program/]. Accessed 11 November 2020.
[3] Australian Government. November 2015. "National List of Notifiable Diseases of Terrestrial Animals". [http://www.agriculture.gov.au/pests-diseases-weeds/animal/notifiable#national-list-of-notifiable-diseases-of-terrestrial-animals-at-november-2015]. Accessed 11 November 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: 1

Australia has a record of the facilities in which especially dangerous pathogens are stored. The National Health Security Act 2007 requires the Department of Health (DoH) to keep an updated register of all entities approved to handle potentially harmful biological agents, as well as all facilities thereby operated [1,2]. The statute requires entities who wish to handle such agents to register with DoH within two business days of commencing handling. According to the Registered Facility Reporting

Requirements as of January 2014, "the information contained in the National Register holds a national security classification and only personnel with the appropriate level of clearance have access to the information to ensure the information is protected" [3]. Furthermore, "the Data Collection System (DCS) is a web-based system that allows entities and facilities to submit information about their SSBA handlings. Once the entity and facility is registered with Health, the Responsible Officer will be provided with a facility user name and password to access the DCS" [3]. This means that the record stays updated on a regular basis. The law also requires DoH to maintain a list of such agents, denominated Security Sensitive Biological Agents (SSBA), and implements the SSBA Regulatory Scheme [1]. According to Australia's 2019 Confidence Building Measure Returns (CBN), the SSBA Regulatory Scheme "has a comprehensive inspection scheme for facilities handling SSBAs. Registered facilities that handle Tier 1 SSBAs are inspected every 18 months. Registered facilities that handle Tier 2 SSBAs are inspected every two years" [4].

[1] Department of Health. January 2014. "SSBA Guideline 1 - Entities and Facilities - January 2014". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines-1]. Accessed 16 November 2020.
[2] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 16 November 2020.
[3] Department of Health. January 2014. "SSBA Guideline 2 - Registered Facility Reporting Requirements - January 2014". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines-2]. Accessed 16 November 2020.
[4] United Nations Office at Geneva (UNOG). 2020. Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/state/australia]. Accessed 16 November 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: 1

Australia has in place legislation and regulations related to biosecurity which address requirements including physical containment, operation practices, failure reporting systems and cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed. As outlined by the Department of Health (DoH) and Australia's 2019 Confidence Building Measure Return, submitted to the United Nations Office at Geneva (UNOG), The National Health Security Act 2007 requires the DoH to maintain a list of potentially harmful biological agents, denominated as Security Sensitive Biological Agents (SSBA), and implements the SSBA Regulatory Scheme, which regulates facilities and facility reporting requirements, handling of SSBAs and SSBA-affected tissue, SSBA release or theft reporting guidelines, SSBA transport, and monitoring inspections, inter alia. [1, 2, 3] Facilities storing SSBA substances must be able to meet and comply with the specific facility requirements of the SSBA Standards including having firstly, "a clearly defined secure perimeter that allows control of access to the secure area," secondly, "lockable doors when a facility is unattended" and thirdly, "windows that are non-opening and sealed at all times". [4] The list of SSBAs includes such as anthrax, Ebola virus, SARS coronavirus and Variola virus (Smallpox) among others. [5] In addition, the Biosecurity Act 2015, which is enforced jointly by the DoH and the Department of Agriculture and Water Resources (DAWR), regulates biological import permits and "requires that imported high-risk biological material be held in a facility that is approved by the DAWR under an approved arrangement." [6,7]

[1] Department of Health. August 2014. "SSBA Guidelines". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines.htm.] Accessed 16 November 2020.
[2] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 16 November 2020.

[3] United Nations Office at Geneva (UNOG).Confidence Building Measures. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm-2019australia]. Accessed 16 November 2020.
[4] Department of Health. Updated January 2014. "SSBA Guideline 1 - Entities and Facilities - January 2014". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines-1]. Accessed 16 November 2020.
[5] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list]. Accessed 16 November 2020.
[6] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[7] Government of Australia. 2015. "Biosecurity Act". [https://www.legislation.gov.au/Series/C2015A00061]. Accessed 16 November 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: 1

There are established agencies responsible for the enforcement of biosecurity legislation and regulations. According to Australia's 2019 Confidence Building Measure Return, submitted to the United Nations Office at Geneva (UNOG), the Department of Agriculture and Water Resources (DAWR) and the Department of Health (DoH) maintain responsibility for the enforcement of biosecurity legislation and regulations under the Biosecurity Act 2015 and the National Health Security Act 2007. [1, 2, 3] The Biosecurity Act, which is administered by both agencies, establishes regulated goods, quarantine standards, and monitoring zones. [1] The DoH enforces the National Health Security Act, and its restrictions and guidelines regarding handling and transport of Security Sensitive Biological Agents (SSBAs) such as anthrax, Ebola virus, SARS coronavirus and Variola virus (Smallpox) among others, through a system of reporting and registration requirements and facility inspections, spot checks, audits, and investigations. [4, 5]

[1] Department of Agriculture and Water Resources. "Legislation". [http://www.agriculture.gov.au/biosecurity/legislation]. Accessed 17 November 2020.
[2] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 17 November 2020.
[3] United Nations Office at Geneva (UNOG).Confidence Building Measures. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm-2019australia]. Accessed 16 November 2020.
[4] Department of Health. March 2017. "SSBA Guideline 10 SSBA Regulatory Scheme Monitoring Inspections - January 2017". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines-10]. Accessed 17 November 2020.
[5] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list].Accessed 17 November 2020.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that the Australian government has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. No evidence was found from a review of the Department of Health (DoH) website; the National Health Security Act 2007; the Department of Agriculture and Water Resources website; the National Counter-Terrorism Plan; Australia's Joint External Evaluation (JEE), published in 2018; or Australia's Confidence Building Measure Return (2017, 2018, 2019, 2020). [1, 2, 3, 4, 5, 6] However, the National Health Security Act 2007 does require the DoH to keep an updated register of all entities approved to handle potentially harmful biological agents. [2] The VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database does not list any relevant legislation. [7]

[1] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[2] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 16 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[5] National Counter-Terrorism Plan. [https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Pages/default.aspx]. Accessed 16 November 2020.
[6] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/state/australia]. Accessed 16 November 2020.
[7] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "A". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/a/]. Accessed 3 December 2020.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for Anthrax and Ebola in Australia. According to the Department of Health, the Public Health Laboratory Network has developed a standard case definition for the diagnosis of diseases which are notifiable in Australia, including anthrax, which specifically outlines that the "culture must be confirmed by an appropriate Reference laboratory using PCR and phage lysis tests". [1] The Victorian Infectious Diseases Reference Laboratory also has the capacity to conduct "Real-time TaqMan PCR" testing for Ebola. [2] Australia's Joint External Evaluation (JEE) report, published in 2018, does not discuss PCR or Ebola testing capacities, except to note that PCR testing is in use in the country. [3]

[1] Department of Health. February 2018. "Anthrax Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-anthrax.htm]. Accessed 16 November 2020.
[2] The Victorian Infectious Diseases Reference Laboratory. "Ebola virus PCR". [https://www.vidrl.org.au/?s=ebola&post_type=vidrl_handbook_test]. Accessed 16 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia has standardized training on biosecurity for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. According to Australia's Joint External Evaluation (JEE) report, published in 2018 "for laboratories operating under the SSBA, GMO and 'approved arrangements' regulatory schemes, facilities are responsible for implementing training and ensuring that specified competency levels are achieved and maintained" but "there is no nationally consistent training regime for biosafety or biosecurity" [1]. There is no evidence of such training on the Department of Health website, the Department of Defence, the Department of Agriculture and Water Resources, the Australian Research Council websites nor Australia's Confidence Building Measure Return (2017, 2018, 2019, 2020) [2, 3, 4, 5, 6]. The website of Animal Health Australia describes the existence of an inter-jurisdictional program called Biosecurity Emergency Response Training Australia (BERTA), which "is an initiative to allow a national and consistent approach to all areas of biosecurity emergency response training". However, it includes no mention of facilities housing dangerous pathogens. [7] The VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database does not list any relevant legislation. [8]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[3] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 16 November 2020.
[5] Australian Research Council. [https://www.arc.gov.au/]. Accessed 11 November 2020.
[6] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/state/australia]. Accessed 16 November 2020.
[7] Animal Health Australia. "Biosecurity Emergency Response Training Australia". [https://www.animalhealthaustralia.com.au/berta/]. Accessed 16 November 2020.
[8] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "A". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/a/]. Accessed 3 December 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: 1

Regulations in Australia specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to background checks. According to the Department of Health (DoH), Australian regulation under the Security Sensitive Biological Agents (SSBA) Regulatory Scheme requires SSBA handling facilities to perform identity and background checks on any person seeking authorisation to handle SSBAs, access the facility where SSBAs are handled or access sensitive information related to SSBAs, per the SSBA Standards [1]. The checks must be repeated every 2 years and according to Australia's 2019 Confidence Building Measure Return, the "background checks, known as National Health Security Checks, consist of a national criminal history check against a list of disqualifying offences and a security assessment" [1, 2]. The SSBA Standards do not require drug tests or psychological or mental fitness checks in order to authorise access to or handling of SSBAs. There was no evidence of drug testing or psychological or mental fitness checks in the SSBA standards, Department of Health website, the Department of Defence website, the Department of Agriculture and Water Resources, nor the Australian Research Council [3, 4, 5, 6].

[1] Department of Health. April 2013. "Security-sensitive Biological Agent (SSBA) Standards". http://www.health.gov.au/internet/main/publishing.nsf/content/ssba.htm/$file/ssba-april-2013.pdf. Accessed 16 November 2020.
[2] United Nations Office at Geneva (UNOG). Confidence Building Measures. 2020. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm2020australia]. Accessed 16 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[5] Department of Defence. [http://www.defence.gov.au/]. Accessed 16 November 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

Australia has publicly available information on national regulations on the safe and secure transport of infectious substances. The National Pathology Accreditation Advisory Council (NPAAC), a ministerially-appointed council which is managed by the Department of Health and Ageing (DoHA), defines the national requirements for the packaging and transport of specimens and associated materials. [1, 2] The NPAAC publishes "Requirements for the Packaging and Transport of Pathology Specimens and Associated Materials," now in its 4th edition, which lays out regulations on safe and secure transport of Category A and B infectious substances [2]. The document was last updated in November 2015. [2] Air transport of SSBAs consistent with International Air Transport Association (IATA) regulations is permitted by Australia's Civil Aviation Safety Regulations. [3, 4] The DoH also publishes a guideline for transport of security-sensitive biological agents (SSBAs), which provides additional guidance. [3]. No further information is provided in Australia's Confidence Building Measure Returns (2017, 2018, 2019, 2020). [5]

[1] Department of Health. Nov 2015. "National Pathology Accreditation Advisory Council (NPAAC)". [http://www.health.gov.au/npaac]. Accessed 16 November 2020.
[2] Department of Health. Nov 2015. "Requirements for the Packaging and Transport of Pathology Specimens and Associated Materials (Fourth Edition 2013)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/health-npaac-docs-

PackTransPathSpecimens.htm]. Accessed 16 November 2020.
[3] Department of Health. July 2014. "SSBA Guideline 8 Transporting SSBAs and Suspected SSBAs - July 2014". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba-guidelines-8]. Accessed 16 November 2020.
[4] Federal Register of Legislation. April 2018. "Civil Aviation Safety Regulations". [https://www.legislation.gov.au/Details/F2018C00211]. Accessed 16 November 2020.
[5] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/australia/bwccbm-2019australia]. Accessed 16 November 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: 1

Australia has laws and regulations in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens and toxins. Imports of Security Sensitive Biological Agents (SSBAs) falls under the purview of the Department of Agriculture and Water Resources (DAWR) via the Biosecurity Act 2015 [1]. Importers of SSBAs must obtain clearance from the DAWR. The department maintains BICON, an electronic import conditions database for more than 20,000 goods, which helps importers determine if an import permit is required for any good [2]. DAWR also offers "approved arrangements", voluntary arrangements entered into with DAWR that "allow operators to manage biosecurity risks in accordance with departmental requirements without constant supervision by the department and with occasional compliance monitoring or auditing" [3]. The Department of Defence supplies end-use and non-transfer certificate to foreign governments. [6,7] Exports of SSBAs require a permit from the Department of Defence (Defence Export Control Office) called an 'AUSGEL' if the SSBA is contained on the Defence and Strategic Goods List (DSGL) under the Customs (Prohibited Exports) Regulations 1958. As outlined in Australia's 2020 Confidence Building Measure Return, the Customs (Prohibited Exports) Regulations 1958 "Part 2 of the DSGL lists dual-use items, and as such, includes human pathogens and toxins, animal pathogens, plant pathogens and equipment capable of being used to develop biological weapons [9]. It further states that "applications to export goods listed in the DSGL are considered on a case-by-case basis against published policy criteria to ensure exports of military and dual-use goods are consistent with Australia's broader national interests and international obligations. Australia's export control policies and procedures are reviewed regularly to reflect shifts in strategic priorities and reflect changes in the various international counter-proliferation multilateral and export control regimes of which Australia is a member" [9]. SSBAs included in the list are Bacillus anthracis, Salmonella typhi , among others [4, 5]. Australia's Department of Foreign Affairs and Trade also established The Australia Group (AG), an informal forum of countries which, through the harmonisation of export controls, seeks to ensure that exports do not contribute to the development of chemical or biological weapons [8].

[1] Department of Agriculture and Water Resources. "Legislation". [http://www.agriculture.gov.au/biosecurity/legislation]. Accessed 16 November 2020.
[2] Department of Agriculture and Water Resources. September 2018. "BICON: Australian Biosecurity Import Conditions". [https://bicon.agriculture.gov.au/BiconWeb4.0]. Accessed 16 November 2020.
[3] Department of Agriculture and Water Resources. March 2017. "Approved arrangements". [http://www.agriculture.gov.au/import/arrival/arrangements/]. Accessed 16 November 2020.
[4] Federal Register of Legislation. January 2018. "Customs (Prohibited Exports) Regulations 1958". [https://www.legislation.gov.au/Details/F2018C00057]. Accessed 16 November 2020.

[5] Federal Register of Legislation. April 2018. "Defence and Strategic Goods List". https://www.legislation.gov.au/Details/F2018C00287. Accessed 16 November 2020.
[6] Department of Defence. "Defence Export Controls". [https://www1.defence.gov.au/business-industry/export/controls]. Accessed 16 November 2020.
[7] Department of Defence. "Application to Export or Supply Controlled Goods and Technology". [http://www.defence.gov.au/ExportControls/FormExport.asp]. Accessed 16 November 2020.
[8] Department of Foreign Affairs and Trade. "The Australia Group". [https://australiagroup.net/en/index.html]. Accessed 16 November 2020.
[9] United Nations Office at Geneva (UNOG). Confidence Building Measures. 2020. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm2020australia]. Accessed 16 November 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: 1

Australia has in place national biosafety regulations, to prevent accidents that involve the release of harmful biological substances. According to the Security Sensitive Biological Agents (SSBA) Standards, published by the Department of Health, biosafety "should be addressed by complying with the Occupational Health and Safety Acts of the Commonwealth, States and Territories and by following AS/NZS 2243.3:2010 Safety in laboratories - Microbiological safety and containment" [1, 2]. The AS/NZS 2243.3:2010 prescribes the appropriate biosafety and physical containment requirements when handling SSBAs and sets out "requirements, responsibilities and general guidelines relating to safe handling and containment of microorganisms and prions in laboratories. It outlines the "organizational arrangements for the implementation and monitoring of biosafety". [2] AS/NZS 2243.3:2010 specifies how to manage principles of containment, microbiological spills, cleaning, and the use of personal protective equipment (PPE) and special equipment, among others, for laboratory containment facilities, plant containment facilities, invertebrate containment facilities, and animal containment facilities [2]. According to Australia's 2019 Confidence Building Measure Return, the Biosecurity Act 2015, which is jointly enforced by the Department of Agriculture and Water Resources (DAWR) and the DoH, lays out biosafety standards and regulations for potentially harmful biological substances in an export/import context .[3, 4] The word "biosafety" in Australia also refers to manipulation of genetically modified organisms (GMOs). Biosafety in that sense is regulated by the Department of Health Office of the Gene Technology Regulator, per the Gene Technology Act 2000. [5] Ausdtralia's Joint External Evaluation (JEE), published in 2018, confirms the role of the SSBA, and notes that Australia's regulations are frequently looked to as a model in international forums. [6]

[1] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list]. Accessed 16 November 2020.
[2] Australian Government. "Australian New Zealand Standard AS / NZS 2243.3:2010 Safety in Laboratories - Microbiological Safety and Containment." [https://archive.org/details/as-nzs.2243.3.2010]. Accessed 16 November 2020.
[3] Federal Register of Legislation. September 2017. "Biosecurity Act 2015". [https://www.legislation.gov.au/Details/C2017C00303]. Accessed 16 November 2020.
[4] United Nations Office at Geneva (UNOG). Confidence Building Measures. 2020. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm2020australia]. Accessed 16 November 2020.
[5] Department of Health, Office of the Gene Technology Regulator. October 2019. "Legislation".

[http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/legislation-2]. Accessed 16 November 2020.
[6] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 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: 1

There is an established agency responsible for the enforcement of biosafety regulations. According to the Security Sensitive Biological Agents (SSBA) Standards, published by the Department of Health, biosafety "should be addressed by complying with the Occupational Health and Safety Acts of the Commonwealth, States and Territories and by following AS/NZS 2243.3:2010 Safety in laboratories - Microbiological safety and containment". [1] The AS/NZS 2243.3:2010 sets out "requirements, responsibilities and general guidelines relating to safe handling and containment of microorganisms and prions in laboratories and outlines the "organisational arrangements for the implementation and monitoring of biosafety". [2] The enforcing agency for AS/NZS 2243.3:2010 is the Department of Health. [3] The word "biosafety" in Australia also refers to manipulation of genetically modified organisms (GMOs). As such, biosafety is regulated by the Department of Health Office of the Gene Technology Regulator, per the Gene Technology Act 2000. [4]. There is no further information available in Australia's Confidence Building Measure Returns (2017, 2018, 2019, 2020) [5]. Australia's Joint External Evaluation, published in 2018, does not share additional relevant information. [7]

[1] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list]. Accessed 16 November 2020.
[2] Australian Government. "Australian New Zealand Standard AS / NZS 2243.3:2010 Safety in Laboratories - Microbiological Safety and Containment." [https://archive.org/details/as-nzs.2243.3.2010]. Accessed 16 November 2020.
[3] Australian Government. "Australian New Zealand Standard AS / NZS 2243.3:2010 Safety in Laboratories - Microbiological Safety and Containment - Australian Government". [https://ablis.business.gov.au/service/ag/australian-new-zealand-standard-as-nzs-2243-3-2010-safety-in-laboratories-microbiological-safety-and-containment/31039] Accessed 16 November 2020.
[4] Department of Health, Office of the Gene Technology Regulator. October 2019. "Legislation". [http://www.ogtr.gov.au/internet/ogtr/publishing.nsf/content/legislation-2]. Accessed 16 November 2020.
[5] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/state/australia]. Accessed 16 November 2020.
[6] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia has standardised training on biosafety for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. According to Australia's Joint External Evaluation (JEE) report, published in 2018, "for laboratories operating under the SSBA, GMO and 'approved arrangements' regulatory schemes, facilities are responsible for implementing training and ensuring that specified competency levels are achieved and maintained" but "there is no nationally consistent training regime for biosafety or biosecurity". [1] There is no evidence of such training on the Department of Health website, the Department of Defence, the Department of Agriculture and Water Resources, the Australian Research Council websites, or Australia's Confidence Building Measure Returns (2017, 2018, 2019,2020). [2, 3, 4, 5, 6] The website of Animal Health Australia describes the existence of an inter-jurisdictional program called Biosecurity Emergency Response Training Australia (BERTA), which "is an initiative to allow a national and consistent approach to all areas of biosecurity emergency response training". However, it includes no mention of facilities housing dangerous pathogens, toxins, or other relevant materials, nor does it mention "biosafety". [7] There is no relevant evidence in recent media reports or academic studies. The VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database does not list any relevant legislation. [8]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[3] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 16 November 2020.
[5] Australian Research Council. [https://www.arc.gov.au/]. Accessed 11 November 2020.
[6] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia". [https://bwc-ecbm.unog.ch/state/australia]. Accessed 16 November 2020.
[7] Animal Health Australia. "Biosecurity Emergency Response Training Australia". [https://www.animalhealthaustralia.com.au/berta/]. Accessed 16 November 2020.
[8] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "A". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/a/]. Accessed 16 November 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: 1

There is evidence that Australia has conducted an assessment of ongoing research on especially dangerous pathogens and toxins and other dual-use research. Under the Security Sensitive Biological Agents (SSBA) Regulatory Scheme, facilities that handle SSBAs on an ongoing basis are required to register with the Australian Government Department of Health. As part of the registration process, facilities are required to declare whether 'research' is their purpose for handling. If so, they are

required to provide a description of this research which is then reviewed by the Australian Intelligence Community. Evidence can be found in the Initial Registration Forms and in the National Health Security Act 2007 (Part 3, Division 5, Subdivision A (41). [1, 2, 3]

[1] Australian Government Department of Health. "Security Sensitive Biological Agents". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#standards] Accessed September 2021.
[2] Australian Government Department of Health. SSBA Reporting Forms. [https://www1.health.gov.au/internet/main/publishing.nsf/content/ssba-reporting-forms#07] Accessed September 2021.
[3] Australian Government. Federal Register of Legislation. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2021C00048] Accessed September 2021.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The Australian government has national policies in place requiring oversight of dual use research such as with especially dangerous pathogens, toxins and/or pathogens with pandemic potential, known as Security Sensitive Biological Agents (SSBAs) in Australia. SSBAs include diseases such as Bacillus anthracis (Anthrax - virulent strains), Ebola virus, SARS coronavirus, Variola virus (Smallpox) among others [1]. According to the Department of Health (DoH) and Australia's 2017 Confidence Building Return (the most recent that contains relevant information), and the Review of Biological Agents of Security Concern, published by the DoH in February 2016, outlines that "while the SSBA Regulatory Scheme does not currently directly monitor dual use, all research conducted on SSBAs must be responsible and legitimate under the NHS Act (Section 41) and the NHS Act states that all applications for the registration of a purpose for handling an SSBA that include research must be vetted by scientific and technical experts". [2, 3, 4] The SSBA Regulatory Scheme liaises with the Australian Intelligence Community (AIC) to scrutinize any application for SSBA research. "If the research is not deemed to be responsible and legitimate, the NHS Act requires that a temporary registration is put in place. The matter is then referred to the relevant authorities for investigation. If the entity is found to have committed an offence against the Crimes (Biological Weapons) Act 1976 then the temporary registration is cancelled and the matter is referred to the appropriate authorities" [2]

[1] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list]. Accessed 16 November 2020.
[2] Department of Health. February 2016. "Review of Biological Agents of Security Concern". [https://www.health.gov.au/internet/main/publishing.nsf/Content/B6A946FB22DDD445CA257EF50014BE89/$File/FINAL-REPORT-Review-Biological-Agents-Security-Concern.pdf]. Accessed 16 November 2020.
[3] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 16 November 2020.
[4] United Nations Office at Geneva (UNOG). Confidence Building Measures. "Australia 2017". [https://bwc-ecbm.unog.ch/australia/bwccbm2017australia]. Accessed 16 November 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: 1

The Australian government has an agency responsible for the oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. According to the Department of Health and Australia's 2020 Confidence Building Measure Return, the DoH is responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research, through the framework of the Security Sensitive Biological Agents (SSBA) Regulatory Scheme [1, 4]. According to the Review of Biological Agents of Security Concern, published in February 2016, the Scheme outlines that "all research conducted on SSBAs must be responsible and legitimate under the National Health Security Act 2007 (NHS Act) (Section 41) and the NHS Act states that all applications for the registration of a purpose for handling an SSBA that include research must be vetted by scientific and technical experts" [2, 3]. The SSBA Regulatory Scheme liaises with the Australian Intelligence Community (AIC) to scrutinise any application for SSBA research. "If the research is not deemed to be responsible and legitimate, the NHS Act requires that a temporary registration is put in place. The matter is then referred to the relevant authorities for investigation. If the entity is found to have committed an offence against the Crimes (Biological Weapons) Act 1976 then the temporary registration is cancelled and the matter is referred to the appropriate authorities" [2]. SSBAs include diseases such as Bacillus anthracis (Anthrax - virulent strains), Ebola virus, SARS coronavirus, Variola virus (Smallpox) among others [1].

[1] Department of Health. Updated August 2020. "Security Sensitive Biological Agents". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ssba.htm#list]. Accessed 16 November 2020.
[2] Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 16 November 2020.
[3] Department of Health. February 2016. "Review of Biological Agents of Security Concern". [https://www.health.gov.au/internet/main/publishing.nsf/Content/B6A946FB22DDD445CA257EF50014BE89/$File/FINAL-REPORT-Review-Biological-Agents-Security-Concern.pdf]. Accessed 16 November 2020.
[4] United Nations Office at Geneva (UNOG).Confidence Building Measures. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm-2019australia]. Accessed 16 November 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national legislation, regulation, policy or other guidance in Australia requiring the screening of synthesized DNA before it is sold. The Gene Technology Act 2000 does not include legislation regarding synthetic DNA. [1] According to Australia's Confidence Building Returns (2017, 2018, 2019), the Act "regulates dealings with genetically modified organisms (GMOs) to protect the health and safety of people and the environment... There are also legislative provisions for accreditation of organisations, certification of physical containment facilities and extensive monitoring and enforcement powers". [2] However, there is no information regarding the screening of DNA before it is sold. [1, 2] There is no further evidence on the websites of the Department of Health website, the Department of Foreign Affairs and Trade, the Department of Home Affairs, the Department of Agriculture and Water Resources, the Department of Defence, or the Australian Research Council. [3, 4, 5, 6,7,8] Australia's Joint External Evaluation, published in 2018, does not contain any relevant information. [9] The VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention

Legislation Database does not list any relevant legislation. [10]

[1] Federal Register of Legislation. July 2016. "Gene Technology Act 2000". [https://www.legislation.gov.au/Details/C2016C00792/Download]. Accessed 16 November 2020.
[2] United Nations Office at Geneva (UNOG).Confidence Building Measures. "Australia 2020". [https://bwc-ecbm.unog.ch/australia/bwccbm-2019australia]. Accessed 16 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[4] Department of Foreign Affairs and Trade. [https://dfat.gov.au/pages/default.aspx]. Accessed 16 November 2020.
[5] The Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 16 November 2020.
[6] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[7] Department of Defence. [http://www.defence.gov.au/]. Accessed 16 November 2020.
[8] Australian Research Council. [https://www.arc.gov.au/]. Accessed 16 November 2020.
[9] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[10] VERTIC (Verification Research Training and Information Centre) Biological Weapons Convention Legislation Database. 2020. "A". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/a/]. Accessed 16 November 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: 1

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

Australia's Public Health Laboratory Network (PHLN) has the capacity to test for six out of the ten common tests, but the four country-defined tests are not mentioned on the Department of Health website nor the Joint External Evaluation (JEE) for Australia published in 2018. [1, 8, 9] The lab can conduct PCR testing for Influenza, virus culture for poliovirus, serology for HIV, microscopy for tuberculosis, rapid diagnostic testing for malaria and bacterial culture for typhoid. [2, 3, 4, 5, 6, 7] While there is no evidence of four country-specific tests, Australian laboratories have both the capacity and capability to perform testing for more than 10 priority diseases, including those required by the JEE of IHR Core Capacities of Australia. [8]. The country has a wide capability of advanced clinical and research grade diagnostic testing. [9]

[1] Department of Health. January 2017. "Laboratory case definitions for diagnosis of communicable diseases". http://www.health.gov.au/internet/main/publishing.nsf/Content/Laboratory+case+definitions-1. Accessed 16 November 2020.
[2] Department of Health. June 2010. "Influenza Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-influenza.htm]. Accessed 16 November 2020.
[3] Department of Health. February 2000. "Poliovirus Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-polio.htm]. Accessed 16 November 2020.
[4] Department of Health. June 2016. "HIV Laboratory Case Definition". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-HIV.htm]. Accessed 16 November 2020.
[5] Department of Health. October 2006. "Tuberculosis Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-tb.htm]. Accessed 16 November 2020.
[6] Department of Health. March 2011. "Malaria Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-malaria.htm]. Accessed 16 November 2020.
[7] Department of Health. January 2005. "Salmonella Laboratory Case Definition (LCD)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-phlncd-salmonella.htm]. Accessed 16 November 2020.
[8] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[9] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 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: 1

There is evidence to show that Australia has a national plan, strategy or similar document for conducting testing during a public health emergency, but planning documents do not include considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. Public health emergency planning documents describe general lines of responsibility for testing and describe certain thresholds for action. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) contains a section called "Public Health Laboratory Testing" which describes the general steps that public health laboratories should take in response to an outbreak, including "Develop and maintain the laboratory case definition;" "Acquire relevant testing kits, isolates and sequencing data for test development;" "Develop laboratory testing protocols to provide clinical specimen collection guidance; and detection methodologies;" "Determine triggers for authorising laboratory testing in the early phase; transferring testing from reference laboratories to diagnostic laboratories;" and "Develop and validate organism-specific tests if needed;" among other measures. The CDPLAN includes additional guidance throughout the document on considerations for testing, including stating that the Public Health Laboratory Network (PHLN) is responsible for "issuing national advice on sample processing and referral" for novel pathogens. However, the CDPLAN's guidelines do not include more specific considerations for novel pathogens, scaling capacity, and defining testing goals . [1] The CDPLAN is part of the National Health Emergency Response Arrangements (NatHealth Arrangements), a 2011 document; however, this document does not contain relevant information. [2] The Joint External Evaluation (JEE) for Australia, published in 2018, lauds Australia's testing capacity in general, but does not mention the existence of a plan or protocols for testing during a public health emergency that includes testing for novel pathogens. [3] Australia has issued detailed guidance for testing for COVID-19, but this guidance is specific to the COVID-19 pandemic and is not broadly applicable to other public health emergencies. [4,5,6] Similar to the CDPLAN, the Australian Health Management Plan for Pandemic Influenza (AHMPPI), published in 2019, describes the importance of testing in responding to a pandemic, and establishes lines of responsibility, but does not amount to a complete national plan for testing. [7] For example, AMHPPI defines steps such as the development of a test; quality assurance; "undertake laboratory testing as required"; and develop point-of-care "testing to enable timely diagnosis". It also describes different thresholds for aspects of testing, including "Standby stage", "Initial Action Stage", and "Standdown Stage". However, the AHMPPI does not include plans for scaling. Additionally, it does not include detailed plans for testing novel pathogens. [7] There is no other relevant information on the websites of the Department of Health, the Department of Agriculture and Water Resources, or the PHLN. [8,9,10]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Department of Health. "Coronavirus Disease 2019 (Covid-19)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm]. Accessed 23

November 2020.
[5] Communicable Disease Network Australia. 28 October 2020. "Coronavirus Disease 2019 (Covid-19): CDNA Guidelines for National Public Health Units".
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/7A8654A8CB144F5FCA2584F8001F91E2/$File/COVID-19-SoNG-v3.10.pdf]. Accessed 23 November 2020.
[6] Department of Health. 14 March 2020. "PHLN Guidance on Laboratory Testing for Sars-Cov-2 (the Virus That Causes COVID-19)". [https://www.health.gov.au/resources/publications/phln-guidance-on-laboratory-testing-for-sars-cov-2-the-virus-that-causes-covid-19]. Accessed 23 November 2020.
[7] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)".
[http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[8] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[9] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 23 November 2020.
[10] Department of Health. March 2011."Public Health Laboratory Network (PHLN)".
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 23 November 2020.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a national laboratory that serves as a reference facility which is accredited. The Victorian Infectious Diseases Reference Laboratory (VIDRL) is ISO I5189 accredited. [1, 2] ISO 15189 specifies requirements for quality and competence in medical laboratories. [3] According to the Joint External Evaluation (JEE) for Australia, published in 2018, the National Association of Testing Authorities (NATA) is the national body in charge of laboratory licensing, inspection and certification. Medical laboratory accreditation is conducted through a joint programme between NATA and the Royal College of Pathologists of Australasia, which adheres to AS ISO 15189. [4] The JEE also states that there are 333 laboratories accredited under ISO 15189:2012 for medical, microbiological testing in Australia. [4]. For example, the National Serology Reference Laboratory (NRL) is ISO 15189 accredited. [5]

[1] Victorian Infectious Diseases Reference Laboratory. [http://www.vidrl.org.au/]. Accessed 16 November 2020.
[2] Doherty Institute. "The Peter Doherty Institute for Infection and Immunity". [https://www.doherty.edu.au/]. Accessed 16 November 2020.
[3] International Organisation for Standardisation. "ISO 15189:2012". [https://www.iso.org/standard/56115.html]. Accessed 16 November 2020.
[4] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia".
[https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[5] National Serology Reference Laboratory (NRL). "Testing". [https://www.nrlquality.org.au/testing]. Accessed 16 November 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 a national laboratory that serves as a reference facility that is subject to external quality assurance review. The Victorian Infectious Diseases Reference Laboratory is subject to external quality assurance review. [1] The laboratory is ISO 15189 accredited, and this certification requires external quality assurance reviews. [2] The National Association of Testing Authorities (NATA) is the national body in charge of laboratory licensing, inspection, and certification. Medical laboratory accreditation is conducted through a joint programme between NATA and the Royal College of Pathologists of Australasia. To maintain accreditation, laboratories are subject to on-site inspections. The NATA assessment cycle for medical testing facilities is four years. This includes a surveillance visit at two years and a reassessment at four years. Online surveillance processes also occur at one year and three years. Loss of NATA accreditation leads to the loss of funding through the Medicare Benefits Schedule (MBS, the country's universal health scheme). Following NATA assessment, laboratories may be provided with a list of corrective actions. Laboratories must demonstrate that they have actioned these items within a certain time. These items are followed up at the next assessment, and accreditation may be suspended or withdrawn if laboratories are not able to demonstrate compliance [3].

[1] Victorian Infectious Diseases Reference Laboratory. [http://www.vidrl.org.au/]. Accessed 16 November 2020.
[2] World Health Organisation. "Content Sheet 10-1: Overview of External Quality Assessment (EQA)".[http://www.who.int/ihr/training/laboratory_quality/10_b_eqa_contents.pdf]. Accessed 11 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

There is evidence to demonstrate that Australia has a nationwide specimen transport system. The Joint External Evaluation for Australia, published in 2018, states that Australia has a "comprehensive system of referral and transport of samples across all levels and throughout the country". [1] There is a national arrangement that "laboratories or jurisdictions are responsible for arranging courier contracts to meet their individual requirements" [1]. There are also robust requirements for the packaging, marking, labelling and transport of specimens [2]. However, there is no evidence of a national specimen transport system on the Department of Health website nor the Department of Agriculture and Water Resources website but there is some evidence at state level. [3, 4] For example, the policy directive for "Transport of Pathology Specimens to Laboratories" in New South Wales, published in June 2018, outlines that "the NSW Health Pathology Transport Service must transport specimens to the nearest NSW Health Pathology laboratory or to the appropriate laboratory providing the required diagnostic testing. NSW Health Pathology is responsible for coordinating transport arrangements including other commercial courier, freight or taxi services". [5] "Other transport services can only be used to transport specimens to the appropriate laboratory providing the required diagnostic analysis in the following circumstances: a) Where the NSW Health Pathology Transport Service is not operating b) Where there is no on-site NSW Health Pathology laboratory c) When the NSW Health Pathology laboratory is closed". [5] However, no such transport system was found on the Queensland Health website,

Victoria Health website, Western Australia website, Northern Territory website, or the South Australia website [6, 7, 8, 9, 10].

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[2] Department of Health. Nov 2015. "Requirements for the Packaging and Transport of Pathology Specimens and Associated Materials (Fourth Edition 2013)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/health-npaac-docs-PackTransPathSpecimens.htm]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 23 November 2020.
[5] New South Wales Government. June 2018. "Transport of Pathology Specimens to Laboratories New South Wales". [https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2018_020.pdf]. Accessed 23 November 2020.
[6] Queensland Government. Queensland Health. [https://www.health.qld.gov.au/]. Accessed 23 November 2020.
[7] Victoria State Government. Victoria Health. [https://www2.health.vic.gov.au/]. Accessed 23 November 2020.
[8] Western Australia Government. [https://www.wa.gov.au/]. Accessed 23 November 2020.
[9] Northern Territory Government. [https://nt.gov.au/]. Accessed 23 November 2020.
[10] South Australia Government. South Australia Health. [https://www.sahealth.sa.gov.au]. Accessed 23 November 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 insufficient evidence to confirm that Australia 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 Australian Health Management Plan for Pandemic Influenza (AHMPPI) includes extensive contingency planning for public health laboratory testing capacity in the case of a pandemic, including fetermining "triggers for authorising laboratory testing" and "transferring testing from reference laboratories to general laboratories". However, it does do not specifically mention an expedited process for licensing or authortizing laboratories to supplement the national public health system. [1] Both the AHMPPI and the Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) task the Public Health Laboratory Network (PHLN) with coordinating and expanding laboratory work, including texting, during a pandemic, but again, do not mention an expedited licensing regime. [1,2] Australia's Joint External Evaluation (JEE), published in 2018, does not contain any relevant information. [3] There is no additional relevant information shared via the public websites of the Department of Health, the Department of Agricultulture and Water Resources, or the PHLN. [4,5,6] The response of Australia's public health laboratories to the testing demands of the COVID-19 pandemic has been praised, for example in academic articles, but there is, again, no evidence of an expedited licensing regime. [7] There is no additional relevant information shared via the government websites describing Australia's testing plans in response to the COVID-19 pandemic. [8,9,10]

[1] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[2] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-

cdplan.htm]. Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[5] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 23 November 2020.
[6] Department of Health. March 2011."Public Health Laboratory Network (PHLN)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 23 November 2020.
[7] David W. Smith. June 2020. "The Challenges of Establishing Adequate Capacity for Sars-Cov-2 Testing". Medical Journal of Australia 212
[10] : 457-458. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7272790/]. Accessed 23 November 2020.
[8] Department of Health. "Coronavirus Disease 2019 (Covid-19)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm]. Accessed 23 November 2020.
[9] Communicable Disease Network Australia. 28 October 2020. "Coronavirus Disease 2019 (Covid-19): CDNA Guidelines for National Public Health Units". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/7A8654A8CB144F5FCA2584F8001F91E2/$File/COVID-19-SoNG-v3.10.pdf]. Accessed 23 November 2020.
[10] Department of Health. 14 March 2020. "PHLN Guidance on Laboratory Testing for Sars-Cov-2 (the Virus That Causes COVID-19)". [https://www.health.gov.au/resources/publications/phln-guidance-on-laboratory-testing-for-sars-cov-2-the-virus-that-causes-covid-19]. Accessed 23 November 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: 2

There is evidence that Australia is conducting ongoing event-based surveillance (EBS) and analysis for infectious disease on a daily basis. According to Australia's Joint External Evaluation, published in 2018, Australia's "EBS is well-established at the national and jurisdictional level using official and unofficial channels" [1]. The National Notifiable Diseases Surveillance System (NNDSS) receives "computerised, de-identified unit records of human health disease notifications from state or territory health authorities daily in a near real-time manner". [1, 3] This data is collected "on a daily basis, for collation, analysis and publication on the internet (updated daily) and in the quarterly journal 'Communicable Disease Intelligence'". [2, 3] According to the JEE, "animal health notifiable diseases are reported to agricultural authorities through the Emergency Animal Disease Watch Hotline, and data is collated in the National Animal Health Information System (NAHIS)" [1, 3]. According to Animal Health Australia, the "NAHIS is a web-based database management system enabling online submission to discrete data projects, automation of data analysis and summary, and provision of customised output reports". [4]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11

November 2020.
[2] Department of Health. "The National Notifiable Diseases Surveillance System".
[http://www9.health.gov.au/cda/source/cda-index.cfm]. Accessed 11 November 2020.
[3] Department of Health. "Introduction to the National Notifiable Diseases Surveillance System".
[http://www.health.gov.au/internet/main/Publishing.nsf/Content/cda-surveil-nndss-nndssintro.htm]. Accessed 11 November 2020.
[4] Animal Health Australia. Reviewed 5 February 2019. "National Animal Health Information System".
[https://animalhealthaustralia.com.au/what-we-do/disease-surveillance/national-animal-health-information-system-nahip/]. Accessed 11 November 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 publicly available evidence that Australia reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) in the last two years.

On 2 March 2018, the Australian National Focal Point (NFP) notified the WHO of an outbreak of Listeria monocytogenes infection (listeriosis) associated with the consumption of rockmelons (cantaloupe) from a single grower; however, this outbreak was outside the two year time horizon. [1] There are no more recent notifiable disease outbreaks reported on the WHO Disease Outbreak news page for Australia. [2]

Australia also reported it's first COVID-19 case on January 25, 2021, days before COVID-19 was declared an official PHEIC. [3] The WHO and the Department of Health confirm that the global COVID-19 pandemic has spread to Australia, with more than 27,000 cases as of November 2020. [4,5] Other than COVID-19, however, there are no media reports within the last two years of verified disease outbreaks. The Australian Department of Health does not report any other potential PHEICs in the last two years on its website. [6]

[1] World Health Organisation (WHO). Disease Outbreak News. 9 April 2018. "Listeriosis - Australia".
[https://www.who.int/csr/don/09-april-2018-listeriosis-australia/en/]. Accessed 27 December 2018.
[2] World Health Organization (WHO). Disease Outbreak News. "Australia".
[https://www.who.int/csr/don/archive/country/aus/en/]. Accessed 16 November 2020.
[3] Department of Health. 25 January 2021."First confirmed case of novel coronavirus in Australia".
[https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/first-confirmed-case-of-novel-coronavirus-in-australia]. Accessed 28 April 2021.
[4] World Health Organization. "WHO Coronavirus Disease (COVID-19) Dashboard".
[https://covid19.who.int/?gclid=CjwKCAjwnef6BRAgEiwAgv8mQfRf_Q66Hc1ltd5fDKvmqtlDEnhWFpg5ZhstlfXNpYojZX5qBoqQTRoC3zkQAvD_BwE]. Accessed 20 November 2020.
[5] Department of Health. "Coronavirus (COVID-19) current situation and case numbers".
[https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers]. Accessed 20 November 2020.
[6] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 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

Australia has an electronic reporting surveillance system at both national and sub-national level. The Joint External Evaluation for Australia published in 2018 states that both "the human health and animal health sectors [in Australia] have independent, comprehensive and electronic surveillance systems". [1] The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 under the auspices of the Communicable Diseases Network Australia. The System co-ordinates the national surveillance of more than 50 communicable diseases or disease groups. Under this scheme, notifications are made to the States or Territory health authority under the provisions of the public health legislation in their jurisdiction. Computerised, de-identified unit records of notifications are supplied to the Australian Government Department of Health on a daily basis, for collation, analysis and publication on the internet (updated daily). [2, 3]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11 November 2020.
[2] Department of Health. "The National Notifiable Diseases Surveillance System". [http://www9.health.gov.au/cda/source/cda-index.cfm]. Accessed 11 November 2020.
[3] Department of Health. "Introduction to the National Notifiable Diseases Surveillance System". [http://www.health.gov.au/internet/main/Publishing.nsf/Content/cda-surveil-nndss-nndssintro.htm]. Accessed 11 November 2020.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 1

Australia has an electronic reporting surveillance system at both national and sub-national level, the National Notifiable Diseases Surveillance System, and it collects ongoing/real-time laboratory data. The National Notifiable Diseases Surveillance System (NNDSS) was established in 1990 under the auspices of the Communicable Diseases Network Australia. The System co-ordinates the national surveillance of more than 50 communicable diseases or disease groups. Under this scheme, notifications are made to the States or Territory health authority under the provisions of the public health legislation in their jurisdiction. [1, 2] The Joint External Evaluation for Australia, published in 2018, outlines that "computerised, de-identified unit records of human health disease notifications are received by NNDSS from state or territory health authorities daily in a near real-time manner". [3] This data includes laboratory data and notifications [2, 4].

[1] Department of Health. "The National Notifiable Diseases Surveillance System". [http://www9.health.gov.au/cda/source/cda-index.cfm]. Accessed 11 November 2020.
[2] Department of Health. "Introduction to the National Notifiable Diseases Surveillance System". [http://www.health.gov.au/internet/main/Publishing.nsf/Content/cda-surveil-nndss-nndssintro.htm]. Accessed 11 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 11

November 2020.
[4] Australian Government. Department of Health. "National notifiable diseases: Australia's notifiable diseases status: Annual report of the National Notifiable Diseases Surveillance System".
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-annlrpt-nndssar.htm]. Accessed 11 November 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 evidence of an electronic health record system in place, andevidence that this system is commonly in use at present in Australia. "My Health Record" was created by the Australian Digital Health Agency. As of October 2020, approximately 91% of the population (22.9 million people) had "My Health Records"; 88 percent of pharmacies, 84 percent of general practitioners, and 94 percent of public hospitals are also using the system. [1]

[1] Australian Digital Health Agency. My Health Record. "My Health Record Statistics".
[https://www.myhealthrecord.gov.au/about/my-health-record-statistics]. Accessed 11 November 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

There is evidence that Australia's national public health system has access to electronic health records of individuals. Australia has a universal health care system which is the primary health scheme that subsidizes most medical costs in Australia for all Australian citizens and permanent residents. The majority of Australia's health care is provided publicly (hospitals and primary health care e.g. General Practitioners). The National Health System has access to the electronic records through the Australian Digital Health Agency's "My Health Record". [1] According to the My Health Record website and the Australian Digital Health Agency website "healthcare providers can view either single documents or summary views that combine information from a range of sources in the My Health Record system." Shared information includes discharge summaries, prescriptions, pathology and diagnostic imaging reports, and other important patient information. [1, 2]. As of October 2020, only 91% of the population had registered for My Health Record, and the vast majority of public hospitals, general practitioners, and pharmacies were using it. [2]

[1] Australian Digital Health Agency. My Health Record. "My Health Record Statistics".
[https://www.myhealthrecord.gov.au/about/my-health-record-statistics]. Accessed 11 November 2020.
[2] Australian Digital Health Agency. "Use of digital health records by healthcare providers".
[https://www.digitalhealth.gov.au/get-started-with-digital-health/digital-health-evidence-review/use-of-digital-health-

records-by-healthcare-providers]. Accessed 11 November 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 insufficient evidence to confirm that there are data standards to ensure Australia's My Health Record data is comparable. There is no mention of ISO standards or other data standards on the My Health Record website nor the Department of Health website or the Public Health Laboratory Network webpage. [1, 2, 3]. Furthermore the Australian Digital Health Agency webpage states that "improvements in data quality and interoperability through the adoption of clinical terminologies, unique identifiers and data standards' will be delivered by 2022". [3] The Australian Digital Health Agency developer website has published "A Profile of the ISO 21090 Specification v1.0: for the construction or implementation of Agency information products but the document is not publicly available and it is not clear what products conform to this standard. [4,5]

[1] Australian Digital Health Agency. My Health Record. [https://www.myhealthrecord.gov.au/]. Accessed 11 November 2020.
[2] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.
[3] Department of Health. "Public Health Laboratory Network". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 11 November 2020.
[4] Australian Digital Health Agency. "3. Interoperability and Data Quality". [https://conversation.digitalhealth.gov.au/3-interoperability-and-data-quality]. Accessed 11 November 2020.
[5] Australian Digital Health Agency. "A Profile of the ISO 21090 Specification v1.0". [https://developer.digitalhealth.gov.au/specifications/clinical-documents/ep-1135-2010/nehta-1136-2010]. Accessed 11 November 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: 1

Australia has an established mechanism at the relevant ministries responsible for animal, human and wildlife surveillance to share data. According to the Australian Department of Health, the Communicable Diseases Network Australia (CDNA) meets fortnightly to share and evaluate the latest information and developments in communicable diseases surveillance with a view to providing a high quality surveillance of communicable and notifiable diseases including: HIV/AIDS, sexually transmissible infections, vaccine preventable diseases, arboviruses and zoonotic and enteric diseases. [1]. Membership of the CDNA includes representatives from the Department of Health and the Department of Agriculture and Water Resources. [2]

[1] Department of Health. March 2015. "About Communicable Diseases Network Australia". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-cdna.htm]. Accessed 11 November 2020.

[2] Department of Health. "CDNA Members". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-cdmembrs.htm]. Accessed 11 November 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: 1

Australia makes de-identified health surveillance data on disease outbreaks publicly available on its Department of Health website. [1] De-identified unit records of notifications are supplied to the Department of Health's National Notifiable Diseases Surveillance System (NNDSS) on a daily basis, for collation, analysis and publication on the internet and updated daily. [1, 2] At the time of research, data had been continuously updated until the present. [1] Examples of diseases reported include zoonotic diseases, such as Anthrax, Australian bat lyssavirus infection and Brucellosis, listed human diseases, such as influenza, MERS-CoV, yellow fever, bloodborne diseases, gastrointestinal diseases, sexually transmissible infections, vaccine preventable diseases, vectorborne diseases and other bacterial diseases. [2] In response to the COVID-19 pandemic, Australia publishes a detailed situation report daily, which included de-identified health surveillance data; however, this particular reporting was limited to the COVID-19 pandemic. [3]

[1] Department of Health. "The National Notifiable Diseases Surveillance System". [http://www9.health.gov.au/cda/source/cda-index.cfm]. Accessed 11 November 2020.
[2] Department of Health. "Introduction to the National Notifiable Diseases Surveillance System." June 2015. [http://www.health.gov.au/internet/main/Publishing.nsf/Content/cda-surveil-nndss-nndssintro.htm]. Accessed 11 November 2020.
[3] Department of Health. "Coronavirus (COVID-19) current situation and case numbers". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers]. Accessed 20 November 2020.

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 1

Australia makes de-identified COVID-19 surveillance data available via daily reports on government websites. The Department of Health webpage "Coronavirus (COVID-19) current situation and case numbers" contains detailed information, and is updated on a daily basis. Statistics provided include total cases; total number of recovered cases; total deaths (including breakdowns by age and sex); total number of new cases in the last 24 hours; total number of tests conducted in the last 24 hours; total hospitalizations (including the total number in intensive care units); total number of locally acquired cases in the last 7 days; total number of cases acquired aborad in the last 7 days. There are also statistics showing what percentage of locally acquired cases were contracted from a known contact. [1]

[1] Department of Health. "Coronavirus (COVID-19) current situation and case numbers". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers]. Accessed 20 November 2020.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 1

Australia has laws that safeguard the confidentiality of identifiable health information for individuals. The Department of Health protects individual information in accordance with the Commonwealth Privacy Act 1988. [1,2] The Privacy Act 1988 explicitly covers personal health information and includes "Guidelines for Australian Privacy Principles about health information". [1] "Entities cannot collect health information about individuals for one of the research or public health or safety purposes permitted under s 16B(2) of the Privacy Act if de-identified information would serve the same purpose (s 16B(2)(b)). If de-identified information would not serve the same purpose (and if other conditions imposed in s 16B(2) have been met) the entity can only collect the information in accordance with guidelines approved by the Information Commissioner under s 95A about use of health information for research or public health or safety purposes". [3]

[1] Federal Register of Legislation. November 2018. "The Privacy Act 1988". [https://www.legislation.gov.au/Details/C2018C00456/Download]. Accessed 11 November 2020.
[2] Department of Health. September 2020. "Privacy Policy"". [https://www.health.gov.au/using-our-websites/privacy?utm_source=health.gov.au&utm_medium=callout-auto-custom&utm_campaign=digital_transformation]. Accessed 11 November 2020.
[3] Office of the Australian Information Commissioner. March 2018. "De-identification and the Privacy Act". [https://www.oaic.gov.au/agencies-and-organisations/guides/de-identification-and-the-privacy-act]. Accessed 11 November 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: 1

Australia has legislation safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, include mention of protections from cyber attacks. Australia's Privacy Act 1988, which explicitly covers personal health information, includes mention of protections from cyber attacks. Australian Privacy Principle (APP) 11 of the Privacy Act 1988 outlines that "if an APP entity [such as the Department of Health] holds personal information, the entity must take such steps as are reasonable in the circumstances to protect the information: (a) from misuse, interference and loss; and (b) from unauthorised access, modification or disclosure". [1] "The Privacy, Data Protection and Cybersecurity Law Review - Edition 4 - Australia" outlines that "the obligation of APP11 would extend to taking reasonable steps to protect information that an organisation holds against cyber attacks". [2] In addition, Australia has a

Digital Health Cyber Security Centre which "provides a range of cyber security capabilities to support secure national digital health operations across Australia. This enables the Agency to monitor and assess the cyber threat, as it evolves". [3]

[1] Federal Register of Legislation. November 2018. "The Privacy Act 1988". [https://www.legislation.gov.au/Details/C2018C00456/Download]. Accessed 11 November 2020.
[2] The Law Reviews. October 2020. "The Privacy, Data Protection and Cybersecurity Law Review - Edition 4 - Australia". [https://thelawreviews.co.uk/edition/the-privacy-data-protection-and-cybersecurity-law-review-edition-4/1151244/australia/]. Accessed 11 November 2020.
[3] Australian Digital Health Agency. "Digital Health Cyber Security Centre". [https://www.digitalhealth.gov.au/about-the-agency/digital-health-cyber-security-centre/about]. Accessed 11 November 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 2

The Australian government has made a public commitment via legislation to share surveillance data during a public health emergency, a commitment that is not limited to a single disease. "Part 2 - Public Health Surveillance" of the National Health Security (NHS) Act 2007 provides for "a national system of public health surveillance to enhance the capacity of the Commonwealth and the States and Territories to identify, and respond to, public health events of national significance" and provides for the sharing of surveillance information with the World Health Organisation (WHO) and "countries affected by a public health event or an overseas mass casualty" [1].

[1] Australian Government Federal Register of Legislation. July 2016. "National Health Security Act 2007". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 11 November 2020.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is insufficient evidence to show that Australia has 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, either for an active public health emergencies or for future emergencies. The Australian Health Management Plan for Pandemic Influenza (AHMPPI), published in 2019, states the importance of contact tracing in limiting

outbreaks, but does not describe measures that will be taken to support sub-national contact tracing. [1] The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN), published in 2016, similarly describes the importance of contact tracing, but does not provide details of subnational support. The CDPLAN states: "states and territories, in conjunction with public health services and national committees, will be responsible for planning, implementing and resourcing these actions". The CDPLAN also states that "in extreme circumstances, this role may be outsourced within a jurisdiction, or assistance from the Australian Government Department of Health may be requested" but does not provide more information about national support. [2] Australia's descriptions of measures to combat the COVID-19 pandemic include an emphasis on contact tracing, but do not include information about support to sub-national measures. In any case, this guidance is specific to the COVID-19 pandemic and is not broadly applicable to other public health emergencies. [3,4,5] Australia's Joint External Evaluation (JEE), published in 2018, does not contain relevant information. [6] There is no other relevant information on the websites of the Department of Health, or the Public Health Laboratory Network . [7,8] In November 2020, a government panel published a report to the Australian cabinet, "National Contact Tracing Review", which assessed contact tracing during the COVID-19 pandemic. It generally found proud commitment to good practices among states and terriroties, but also recommended more coordination, standardization of metrics and data, and training. It did not recommend a nationwide contact tracing system. [9]

[1] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[2] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[3] Department of Health. "Coronavirus Disease 2019 (Covid-19)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm]. Accessed 23 November 2020.
[4] Communicable Disease Network Australia. 28 October 2020. "Coronavirus Disease 2019 (Covid-19): CDNA Guidelines for National Public Health Units". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/7A8654A8CB144F5FCA2584F8001F91E2/$File/COVID-19-SoNG-v3.10.pdf]. Accessed 23 November 2020.
[5] Department of Health. 14 March 2020. "PHLN Guidance on Laboratory Testing for Sars-Cov-2 (the Virus That Causes COVID-19)". [https://www.health.gov.au/resources/publications/phln-guidance-on-laboratory-testing-for-sars-cov-2-the-virus-that-causes-covid-19]. Accessed 23 November 2020.
[6] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[7] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[8] Department of Health. March 2011."Public Health Laboratory Network (PHLN)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 23 November 2020.
[9] Government of Australia. November 2020. "National Contact Tracing Review". [https://www.health.gov.au/sites/default/files/documents/2020/11/national-contact-tracing-review-national-contact-tracing-review.pdf]. Accessed 23 November 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: 1

There is evidence that Australia is curently providing wraparound services to enable people infected with COVID-19 and their contacts to self-isolate as recommended, including economic support and medical attention, and these are available throughout the country; however, most aspects of this support have been implemented specifically in response to the COVID-19 pandemic and are not currently extended to public health emergencies in general.

Different measures at the national level provide support to self-isolating workers. For example, since 25 March 2020, the JobSeeker Payment and Youth Allowance programs were expanded to include "people in quarantine or self-isolation as a result of advice from a health professional or a requirement by a government (Commonwealth, state or territory)". [1] There is also a Pandemic Leave Disaster payment available, which "is a one-off grant of $1,500 to eligible workers who are unable to work and earn income while under a direction to self-isolate or quarantine or who are caring for someone who has tested positive for COVID-19". [2, 3] In addition to continued access to Australia's universal public health insurance program, Medicare, those in quarantine or isolation have access to medical services via several different avenues, including remote consultations. [4,5,6,7] Australia has also used a system called the Home Medicines Service to deliver medicines to those in quarantine. [2] Aside from the response to COVID-19, there is not evidence of such wraparound support for those in quarantine, except for measures (like universal public health insurance) that are available to all Australians at any time. There is no relevant information in Austrlia's 2016 Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN); the Australian Health Management Plan for Pandemic Influenza (AHMPPI); or Australia's Joint External Evaluation (JEE), published in 2018. [8,9,10] However, the AHMPPI does acknowledge the need to give extra economic support to vulnerable populations during a pandemic. [9] There is no additional relevant information shared via the public websites of the Department of Health or the Public Health Laboratory Network. [11,12]

[1] Department of Social Services. "Coronavirus (Covid-19) Information and Support". [https://www.dss.gov.au/about-the-department/coronavirus-covid-19-information-and-support]. Accessed 23 November 2020.
[2] Government of Australia. "Budget 2020-21: COVID-19 Response: Supporting Australians through the Crisis". [https://budget.gov.au/2020-21/content/covid-19.htm]. Accessed 23 November 2020.
[3] Services Australia. "Pandemic Leave Disaster Payment". [https://www.servicesaustralia.gov.au/individuals/services/centrelink/pandemic-leave-disaster-payment]. Accessed 23 November 2020.
[4] Lucinda Glover. 5 June 2020. "International Health Care System Profiles: Australia". The Commonwealth Fund. [https://www.commonwealthfund.org/international-health-policy-center/countries/australia]. Accessed 23 November 2020.
[5] Department of Health. 22 May 2020. "Accessing Health Services during Coronavirus (Covid-19) Restrictions". [Accessing health services during coronavirus (COVID-19) restrictions]. Accessed 23 November 2020.
[6] Department of Health. 10 September 2020. "Quarantine for Coronavirus (Covid-19)". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-19/quarantine-for-coronavirus-covid-19]. Accessed 23 November 2020.
[7] Department of Health. 13 October 2020. "Isolation for Coronavirus (Covid-19)". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-19/isolation-for-coronavirus-covid-19]. Accessed 23 November 2020.
[8] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[9] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[10] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23

November 2020.
[11] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[12] Department of Health. March 2011."Public Health Laboratory Network (PHLN)".
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 23 November 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: 1

Australia makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports on government websites. The Department of Health webpage "Coronavirus (COVID-19) current situation and case numbers" contains a section on "cases by source of infection", which shows what percentage of locally contracted cases were traced to contact with another confirmed case, and which did not have an identified contact. The information is updated daily. [1]

[1] Department of Health. "Coronavirus (COVID-19) current situation and case numbers".
[https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-current-situation-and-case-numbers]. Accessed 20 November 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 2

There is evidence to show that Australia has 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.

Ausdtralia pandemic planning documents make extensive reference to the role of border authorities and the importance of coordination in containing pandemics, but there is no evidence of a relevant agreement between the parties. For example,the 2016 Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) and the Australian Health Management Plan for Pandemic Influenza (AHMPPI), published in 2019, both describe actions that border control authorities, such as the Australian Border Force, should undertake at different stages of a pandemic. [1,2] The CDPLAN states that: "The Australian Government Department of Health will liaise with border control agencies, airlines, and shipping to ensure adequate information is collected to facilitate contact tracing. In some circumstances, state and territory health authorities will liaise directly with border control representatives in their jurisdiction on operational matters". [2]

Australia's Joint External Evaluation (JEE) published in 2018, praises coordination between health and border authorities, stating that "Australia has extensive plans and arrangements in place across health and security authorities at the Australian Government level, reinforced by formal agreements including legislation, multiple MoU, policies and procedures with relevant agencies". However, there is no mention of a relevant agreement related tpo quarantine and contact tracing. [3] There is no other relevant information shared via the public websites of the Department of Health, the Australian Border Force, the Department of Home Affairs, or the Public Health Laboratory network (PHLN). [4,5,6,7] Coordination between border authorities and the public health system has been enhanced in response to the COVID-19 pandemic, but there is no evidence of a relevant agreement being implemented. [8] For example, travelers to Australia are now required to make a declaration to assist with COVID-19 contact exposure. [9] However, there is again no evidence of a relevant agreement having been implemented, including in the Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19), or in a November 2020 "National Contact Tracing Review" prepared by a government panel for the cabinet. [10, 11]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[5] Australian Border Force. [https://www.abf.gov.au/]. Accessed 23 November 2020.
[6] Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 23 November 2020.
[7] Department of Health. March 2011."Public Health Laboratory Network (PHLN)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/cda-cdna-phln-index.htm]. Accessed 23 November 2020.
[8] Kim Moloney and Susan Moloney. July/ August 2020. "Australian Quarantine Policy: From Centralization to Coordination with Mid-Pandemic COVID-19 Shifts". Puyblic Administration Review 80
[4] : 671-682. [https://onlinelibrary.wiley.com/doi/full/10.1111/puar.13224]. Accessed 23 November 2020.
[9] Department of Home Affairs. "Australia Travel Declaration". [https://covid19.homeaffairs.gov.au/australia-travel-declaration]. Accessed 23 November 2020.
[10] Department of Health. "Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)". [https://www.health.gov.au/sites/default/files/documents/2020/02/australian-health-sector-emergency-response-plan-for-novel-coronavirus-covid-19_2.pdf]. Accessed 23 November 2020.
[11] Government of Australia. November 2020. "National Contact Tracing Review". [https://www.health.gov.au/sites/default/files/documents/2020/11/national-contact-tracing-review-national-contact-tracing-review.pdf]. Accessed 23 November 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

Australia has an applied epidemiology program called the Master of Philosophy applied Epidemiology program (MAE) and resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs, as part of the MAE. The Australian National University's Master of Philosophy (Applied Epidemiology), otherwise known as the MAE program, is Australia's only Field Epidemiology Training Program (FETP) and is part of the international network of Field Training Programs in Epidemiology & Public Health Interventions Network. [1] The MAE aims to develop Australia's public health capabilities and systems. Its primary goal is to foster the professional development of field trained epidemiologists. [1] According to Australia's Joint External Evaluation (JEE), published in 2018, MAE recruits "a wide range of students, including medical doctors, veterinarians, microbiologists, social scientists and nurses.... MAE alumni have established a database of trained professionals for field deployment" called the ARM, and "the MAE is highly regarded and regularly used in public health emergencies". [2] There is also evidence that the government provides resources to send citizens to South-East Asian countries to participate in an approved field placement for the second year of the MAE. The program is called the ASWAN-Australia Health Security Fellowship. (It was not available due to the COVID-19 pandemic for the year 2021, but Australia planned to resume it in 2022.) [3] The Department of Health also offers scholarships for the MAE of AUS$50,000 per year (tax-free) annually. [4,5] However, the JEE also states that "there is a need for public health personnel to have more opportunities in the international setting" [2].

[1] Australian National University. "Master of Philosophy (Applied Epidemiology)". https://rsph.anu.edu.au/study/master-degrees/master-philosophy-applied-epidemiology. Accessed 11 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 2020.
[3] Australian National University. "ASEAN-Australia Health Security Fellowships". [https://rsph.anu.edu.au/study/master-degrees/master-philosophy-applied-epidemiology/asean-australia-health-security-fellowships]. Accessed 16 November 2020.
[4] Australian National University. "Applying to the MAE Program". [https://rsph.anu.edu.au/study/master-degrees/master-philosophy-applied-epidemiology/applying-to-the-mae-program]. Accessed 16 November 2020.
[5] Australian National University. "Master of Philosophy in Applied Epidemiology Scholarship". [https://www.anu.edu.au/study/scholarships/find-a-scholarship/master-of-philosophy-in-applied-epidemiology-scholarship]. Accessed 16 November 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

Australia's field epidemiology training programme (FETP) at the Australian National University includes animal health professionals, according to the Joint External Evaluation (JEE) for Australia, published in 2018. That program is called the Master of Philosophy applied Epidemiology program (MAE). [1,2] However, Australia does not have a specific animal health field epidemiology training program; there is no evidence of such a program on the websites of the Department of Health, the Department of Agriculture and Water Resources , or TEPHNET [1, 2, 3, 4,5]. According to the JEE, MAE recruits "a wide

range of students, including medical doctors, veterinarians, microbiologists, social scientists and nurses". [1] A webpage describing the MAE application process states that the program is suited to a variety of health professionals, including veterinarians, "who have some postgraduate training and work experience". [6].

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 2020.
[2] Australian National University. "Master of Philosophy (Applied Epidemiology)". https://rsph.anu.edu.au/study/master-degrees/master-philosophy-applied-epidemiology. Accessed 16 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 16 November 2020.
[5] TEPHINET. "Training Programs". [https://www.tephinet.org/training-programs]. Accessed 16 November 2020.
[6] Australian National University. "Applying to the MAE Program". [https://rsph.anu.edu.au/study/master-degrees/master-philosophy-applied-epidemiology/applying-to-the-mae-program]. Accessed 16 November 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

Australia has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) describes the preparedness and response measures that may be taken by the public health and healthcare system in anticipation of, or during a communicable disease incident of national significance (CDINS). [1] The CDPLAN includes clarification of "the roles and responsibilities of the Commonwealth and state and territory health authorities and decision-making bodies during any national communicable disease-related emergency, describes the mechanisms through which a CDINS is declared, how this plan will be escalated and stood down, describes preparedness and response measures that may be taken by the public health and healthcare system in anticipation of, or during a CDINS". [1] Where no disease-specific plan exists, this plan is considered the primary response plan. Where disease-specific plans exist, such as the Australian Health Management Plan for Pandemic Influenza (AHMPPI) and the National Polio Emergency Response Plan, these are the primary plans used in response to specific incidents. [2, 3] The CDPLAN is part of the National Health Emergency Response Arrangements (NatHealth Arrangements) which articulates the strategic arrangements and mechanisms for the coordination of the Australian health sector in response to emergencies of national consequence. [4]

[1] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] Department of Health. January 2019. "Poliomyelitis Outbreak Response Plan for Australia". [http://www.health.gov.au/internet/main/publishing.nsf/Content/polio-plan.htm]. Accessed 23 November 2020.
[4] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 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: 1

Australia has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, and it has been updated in the last three years--in 2018. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) is considered the primary response plan where no disease-specific plan exists. [1] The CDPLAN is part of the National Health Emergency Response Arrangements (NatHealth Arrangements) which articulates the strategic arrangements and mechanisms for the coordination of the Australian health sector in response to emergencies of national consequence. [2]

[1] Department of Health. May 2018. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [https://www1.health.gov.au/internet/main/publishing.nsf/Content/DD8490093CA39594CA25834D0014EF99/$File/Nat-CD-Plan-Nov18.pdf]. Accessed 23 November 2020.
[2] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 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: 1

Australia has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential, and it has considerations for vulnerable populations. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) has "an approach to vulnerable populations or at risk groups". [1] The CDPLAN describes the preparedness and response measures that may be taken by the public health and healthcare system in anticipation of, or during a communicable disease incident of national significance (CDINS). Where no disease-specific plan exists, this plan is considered the primary response plan. [1] There are also disease-specific plans, such as the Australian Health Management Plan for Pandemic Influenza (AHMPPI) and the National Polio Emergency Response Plan. [2, 3] The approach to vulnerable populations or at risk groups included in the CDPLAN is comprehensive and includes a working definition of a vulnerable person and general principles in emergency planning for vulnerable people [1]. The working definition of a vulnerable person is someone who "is known to be reliant on external support from agencies, service providers, caregivers or community networks due to a dependency, disability or limitation that affects their capacity to prepare for, respond to, and/or recover from an emergency" and/or "cannot identify or access personal or community support networks to help them in an emergency or have exhausted their usual support networks and resources" [1]. The general principles in emergency planning for vulnerable people include: "1) Government agencies, special facilities, service providers and individual carers that have day-to-day responsibilities to provide guardianship, care, and/or support to vulnerable people maintain those responsibilities during and after an emergency; 2) Owners and operators of special facilities have primary responsibility for emergency planning, preparedness, response (including decision making, communication and evacuation) and recovery relating to those special facilities; 3) Communicating public information requires targeted and tailored advice being provided to vulnerable people and special facilities as early as possible, and delivered in a manner that is accessible to the range of vulnerable people and in a form that can be understood by these individuals; 4) Arrangements to share personal or sensitive information between those individuals, government agencies and NGOs that have a 'need to know' during an emergency, need to be established before an emergency occurs". [1]

[1] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] Department of Health. January 2019. "Poliomyelitis Outbreak Response Plan for Australia". [http://www.health.gov.au/internet/main/publishing.nsf/Content/polio-plan.htm]. Accessed 23 November 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: 1

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 Australia has specific mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. There is no evidence of specific mechanisms in the Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) nor the National Health Emergency Response Arrangements (NatHealth Arrangements) nor the Department of Health website or the Joint External Evaluation for Australia, published in 2018. [1, 2, 3, 4]

[1] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 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: 2

Australia has a plan in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic. The 2016 Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) defines "social distancing" measures that the government can impose in the case of a pandemic. These can include school closure, workplace closure, working from home, cancelation of mass gatherings, voluntary isolation of cases, and voluntary quarantine of contacts. [1] The 2019 Australian Health Management Plan for Pandemic Influenza (AHMPPI) expands on these guidelines by designating different stages of a pandemic in which social distancing measures can or should be considered. Specifically, the social distancing measures listed above should be considered during the "intial action phase" of a pandemic ("when information about the disease is scarce") and the "targeted action phase" ("when enough is known about the disease to tailor measures to specific needs"). [2] It is the role of the Australian Health Protection Principal Committee (AHPPC) to

make recommendations about NPIs, though individual sectors (such as business or education) may also be tasked with coming up with their own measures. [1,2,3] The "Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)" relies on the framework established by the AHMPPI and CDPLAN. [3] As the COVID-19 pandemic has continued, Australia has produced much more specific guideliens for when certain NPIs should take place. The "Framework for National Reopening", published in November 2020, describes targeted reductions of NPIs, such as removing restrictions on the size of outdoor gatherings, according to an overall plan to reduce COVID-19 prevalence in the country. [4]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] Department of Health. 2020. "Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)". [https://www.health.gov.au/sites/default/files/documents/2020/02/australian-health-sector-emergency-response-plan-for-novel-coronavirus-covid-19_2.pdf]. Accessed 23 November 2020.
[4] Government of Australia. November 2020. "Framework for National Reopening". [https://www.australia.gov.au/content/dam/australia/news-and-updates/framework-national-reopening-nov2020.pdf]. Accessed 23 November 2020.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

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

Current Year Score: 1

There is evidence that Australia has activated its national emergency response plan for an infectious disease outbreak in the past year, but it has not completed a national-level biological threat-focused exercise. The umbrella national emergency response plan for an infectious disease outbreak in Australia is the Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN); or, where disease-specific plans exist, such as the Australian Health Management Plan for Pandemic Influenza (AHMPPI) and the National Polio Emergency Response Plan, these are the primary plans used in response to specific incidents. [1,2,3,4] The AHMPPI was activated in February 2020 to respond to the COVID-19 pandemic, with the publication of the Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19). [5] The COIVD-19 plan is an application of the AHMPPI, as the document makes clear: "The national approach to this plan has been based on the AHMPPI, noting that the response to the novel coronavirus outbreak is now in the Initial Action stage". (The inital action phase is one of the four stages of a pandemic that the AHMPPI identifies). [5] There is no other relevant evidence in World Health Organization (WHO) resources, including the country page for Australia, the regional site for the Western Pacific, and the WHO After Action Review site. [6,7,8,9] There is also no other relevant information provided via the public websites of the Department of Health or the Department of Home Affairs. [10,11] There is no relevant

evidence on the WHO Simulation Exercise webpage. [12]

[1] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] Department of Health. January 2019. "Poliomyelitis Outbreak Response Plan for Australia". [http://www.health.gov.au/internet/main/publishing.nsf/Content/polio-plan.htm]. Accessed 23 November 2020.
[4] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 2020.
[5] Department of Health. "Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19)". [https://www.health.gov.au/sites/default/files/documents/2020/02/australian-health-sector-emergency-response-plan-for-novel-coronavirus-covid-19_2.pdf]. Accessed 23 November 2020.
[6] World Health Organisation (WHO). "After Action Review". [https://extranet.who.int/sph/after-action-review]. Accessed 11 November 2020.
[7] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 11 November 2020.
[8] World Health Organization (WHO). "Western Pacific". [https://www.who.int/westernpacific]. Accessed 11 November 2020.
[8] World Health Organisation (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH)". [https://extranet.who.int/sph/]. Accessed 11 November 2020.
[10] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.
[11] Department of Home Affairs. "Emergency Management". [https://www.homeaffairs.gov.au/about-us/our-portfolios/emergency-management]. Accessed 11 November 2020.
[12] World Health Organization (WHO). "Simulation Exercise". [https://extranet.who.int/sph/simulation-exercise]. Accessed 3 December 2020.

3.2.1b

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

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

Current Year Score: 0

There is no evidence that Australia has, in the past year, 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. A review of World Health Organization (WHO) resources, including the country page for Australia, the regional site for the Western Pacific, and the WHO After Action Review site, does not provide any supporting evidence. [1,2,3,4] Furthermore, neither the Department of Health nor the Department of Home Affairs reports such exercises. [5,6] In the context to the ongoing COVID-19 pandemic, Australia has begun to produce assessments of certain aspects of its response, such as a November 2020 review of its contact tracing practices. [7] However, it has not yet produced a comprehensive list of gaps and best practices related to COVID-19.

[1]. World Health Organisation (WHO). "After Action Review". [https://extranet.who.int/sph/after-action-review]. Accessed 11 November 2020.
[2] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 11 November 2020.
[3] World Health Organization (WHO). "Western Pacific". [https://www.who.int/westernpacific]. Accessed 11 November 2020.
[4] World Health Organisation (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH)". [https://extranet.who.int/sph/]. Accessed 11 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.
[6] Department of Home Affairs. "Emergency Management". [https://www.homeaffairs.gov.au/about-us/our-portfolios/emergency-management]. Accessed 11 November 2020.
[7] Government of Australia. November 2020. "National Contact Tracing Review". [https://www.health.gov.au/sites/default/files/documents/2020/11/national-contact-tracing-review-national-contact-tracing-review.pdf]. Accessed 23 November 2020.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia has, in the past year, undergone a national-level biological threat-focused exercise that has included private sector representatives. A review of World Health Organization (WHO) resources, including the country page for Australia, the regional site for the Western Pacific, and the WHO After Action Review site, does not provide any supporting evidence. [1,2,3,4] Furthermore, neither the Department of Health nor the Department of Home Affairs reports such exercises. [5,6] There is no relevant evidence on the WHO Simulation Exercise webpage. [7]

[1]. World Health Organisation (WHO). "After Action Review". [https://extranet.who.int/sph/after-action-review]. Accessed 11 November 2020.
[2] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 11 November 2020.
[3] World Health Organization (WHO). "Western Pacific". [https://www.who.int/westernpacific]. Accessed 11 November 2020.
[4] World Health Organisation (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH)". [https://extranet.who.int/sph/]. Accessed 11 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 11 November 2020.
[6] Department of Home Affairs. "Emergency Management". [https://www.homeaffairs.gov.au/about-us/our-portfolios/emergency-management]. Accessed 11 November 2020.
[7] World Health Organization (WHO). "Simulation Exercise". [https://extranet.who.int/sph/simulation-exercise]. Accessed 3 December 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

Australia has an Emergency Operations Centre . The Department of Health (DoH) National Incident Room (NIR) serves as the national Public Health Emergency Operations Center. According to the Joint External Evaluation (JEE) for Australia, published in 2018, the NIR ensures a nationally consistent and coordinated response to a national health emergency. [1, 2] The NIR is the contact and coordination point for the DoH during an emergency. According to the DoH, in coordinating the national health response the main activities conducted in the NIR during an ongoing emergency include the coordination of the deployment of the National Medical Stockpile, keeping the community informed of the health related aspects of the emergency through the media, implementing health aspects of the Commonwealth disaster plans, coordinating medical response teams domestically and internationally, and liaising with emergency management sectors in other Commonwealth and state/territory government agencies. [1] When activated, the NIR also produces Situation Reports (SitReps) and Ministerial briefings [3].

[1] Australian Government. Department of Health. May 2020. "National Incident Room". [https://www.health.gov.au/initiatives-and-programs/national-incident-room]. Accessed 23 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[3] Department of Health. November 2011. "National Health Emergency Response Arrangements: November 2011". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23 November 2020.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia's Emergency Operations Centre, the National Incident Room (NIR), is required to conduct a drill at least once per year, nor that it does conduct such a drill once a year. The NIR coordinates the deployment of the National Medical Stockpile [1]. In 2016, the Department of Health (DoH) implemented new contract arrangements for the National Medical Stockpile which include provisions requiring the contractor to demonstrate preparedness for a response through biennial drills. One of these drills must include the physical movement of stock. The first of the required drills was undertaken in August 2016, consisting of a desktop exercise, which identified a need to update standard operating procedures in line with the new arrangements. The DoH completed the second drill, which involved deployment of supplies to a state health authority, in March 2017. [2] There is no evidence of an annual drill on the Department of Health website nor the Emergency Management website of the Department of Home Affairs nor the Sendai framework [3, 4, 5]. News reports in 2020, during the COVID-19 pandemic, said that Australia had not had a pandemic drill at the national level

(whether or not it included the NIR) since 2008. [6]

[1] Department of Health. May 2020. "National Incident Room". [https://www.health.gov.au/initiatives-and-programs/national-incident-room]. Accessed 23 November 2020.
[2] Australian National Audit Office (ANAO). June 2017. "Department of Health's Coordination of Communicable Disease Emergencies". [https://www.anao.gov.au/work/performance-audit/department-health-coordination-communicable-disease-emergencies]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Home Affairs. "Emergency Management". [https://www.homeaffairs.gov.au/about-us/our-portfolios/emergency-management]. Accessed 23 November 2020.
[5] United Nations Office for Disaster Risk Reduction. 2014. "Australia: National progress report on the implementation of the Hyogo Framework for Action (2013-2015)". [https://www.preventionweb.net/english/professional/policies/v.php?id=40149]. Accessed 23 November 2020.
[6] Katharine Murphy. 5 October 2020. "Australia would have its own centre for disease control under a Labor government". [https://www.theguardian.com/australia-news/2020/oct/06/australia-would-have-its-own-centre-for-disease-control-under-a-labor-government]. Accessed 23 November 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 insufficient evidence that Australia's EOC, the National Incident Room (NIR) can conduct, or has conducted within the last year, a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario. The Joint External Evaluation (JEE) for Australia, published in 2018, states that the "NIR routinely participates in a number of both discussion-based and operations-based exercises annually. These exercises include both domestic and World Health Organization (WHO)-led exercises, and have demonstrated the NIR's ability to activate within two hours of the determination of a public health emergency" [1]. In 2016, the Department of Health (DoH) implemented new contract arrangements for the National Medical Stockpile which include provisions requiring the contractor to demonstrate preparedness for a response through biennial drills. [2] However, there is no evidence on the websites of the Department of Health, the Depart of Home Affairs, the National Incident Room (the NIR, Australia's emrgency operations center), or the National Medical Stockpile of relevant exercises in the past year. [3,4,5,6] News reports in 2020, during the COVID-19 pandemic, said that Australia had not had a pandemic drill at the national level (whether or not it included the NIR) since 2008. [7]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[2] Australian National Audit Office (ANAO). June 2017. "Department of Health's Coordination of Communicable Disease Emergencies". [https://www.anao.gov.au/work/performance-audit/department-health-coordination-communicable-disease-emergencies]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Home Affairs. [https://www.homeaffairs.gov.au/]. Accessed 23 November 2020.
[5] Department of Health. May 2020. "National Incident Room". [https://www.health.gov.au/initiatives-and-

programs/national-incident-room]. Accessed 23 November 2020.
[6] Department of Health. October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[7] Katharine Murphy. 5 October 2020. "Australia would have its own centre for disease control under a Labor government". [https://www.theguardian.com/australia-news/2020/oct/06/australia-would-have-its-own-centre-for-disease-control-under-a-labor-government]. Accessed 23 November 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: 1

Australia has arrangements in place across health and security authorities at the Australian Government level but there is no evidence that the authorities have carried out an exercise to respond to a potential deliberate biological event. According to the Joint External Evaluation (JEE) for Australia, published in 2018, "Australia has extensive plans and arrangements in place across health and security authorities at the Australian Government level, reinforced by formal agreements including legislation, multiple MoU, policies and procedures with relevant agencies". [1] Among these arrangements is the Australian Government Crisis Management Framework (AGCMF), which "sets out the principles and responsibilities of agencies in managing domestic and international crises that require Australian Government assistance or coordination"; these agencies include the Department of Health, the Department of Home Affairs, and the Department of Defence. [1,9] The JEE outlines that Australia has achieved the primary goal of implementing a multisectoral response to biological threats and there are "daily hazard reports are provided by the Australian Crisis Coordination Centre and the Department of Foreign Affairs and Trade to all relevant Australian Government agencies, states and territories, including information on health hazards when relevant" and that "cross-government committees including public health and security authorities are established prior to mass gathering events (for example, the 2018 Commonwealth Games) to conduct joint threat/risk assessments and agree measures to minimise identified risks". [1] However, the JEE also highlights that an area in need of improvement is the development of "an exercise programme and joint training across public health and security authorities". [1] Further, there is no evidence of such an exercise on the websites of the Department of Health, the Department of Defence, the Depart of Home Affairs, the National Incident Room (the NIR, Australia's emrgency operations center), or the National Medical Stockpile. [2, 3, 4,5,6,7] News reports in 2020, during the COVID-19 pandemic, said that Australia had not had a pandemic drill at the national level (whether or not it included the NIR) since 2008. [8]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[2] Department of Defence. "Medical Countermeasures Consortium". [https://www.dst.defence.gov.au/partnership/medical-

countermeasures-consortium]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 23 November 2020.
[5] Department of Home Affairs. [https://www.homeaffairs.gov.au/]. Accessed 23 November 2020.
[6] Department of Health. May 2020. "National Incident Room". [https://www.health.gov.au/initiatives-and-programs/national-incident-room]. Accessed 23 November 2020.
[7] Department of Health. October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[8] Katharine Murphy. 5 October 2020. "Australia would have its own centre for disease control under a Labor government". [https://www.theguardian.com/australia-news/2020/oct/06/australia-would-have-its-own-centre-for-disease-control-under-a-labor-government]. Accessed 23 November 2020.
[9] Department of the Prime Minister and the Cabinet. October 2020. "Australian Government Crisis Management Framework (AGCMF)". [https://www.pmc.gov.au/resource-centre/national-security/australian-government-crisis-management-framework]. Accessed 23 November 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

Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) outlines how risk communication messages will reach populations and sectors with different communication needs. It states that the Australian Government Department of Health is responsible for health-specific communications with the public at a national level and that the Australian Health Protection Principal Committee (AHPPC) and its standing committees can advise on key health messages for the public at different stages of the incident. These can then be adapted by stakeholders to meet the needs of their target audience and the purpose of communications, and distributed. The National Health Emergency Media Response Network (NHEMRN), which includes a media representative from the National Aboriginal Community Controlled Health Organisation, is responsible for adapting those messages for "specific audiences". [1] The Joint External Evaluation (JEE) for Australia, published in 2018, states that "messages and materials can be translated into multiple languages to reach affected populations". [2]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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

Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) has a section detailing a risk communication plan that is specifically intended for use during a public health emergency. The CDPLAN states that the Department of Health (DoH) is responsible for risk communications and the Health Minister will generally be the Australian government spokesperson and will ensure that public communication objectives, particularly messages to support public safety, are achieved. Section 4.1.4. of the CDPLAN outlines a communications strategy in the case of a Communicable Disease Incidents of National Significance (CDINS), including sections on "Communications across Government", "Communication with the Health Sector", "Communication with the Public" and "Media coordination". It also outlines the role of the National Health Emergency Media Response Network (NHEMRN), an additional coordinating mechanism activated in the event of a CDINS. [1] The Joint External Evaluation (JEE) for Australia, published in 2018, also outlines Australia's communication capacities. It states that "Australia has comprehensive systems in place to support risk communication in emergencies. A series of plans developed in consultation with partners and stakeholders from other sectors outline common objectives, roles and responsibilities, and approaches for mounting coordinated and complementary risk communication responses to a range of hazards, including infectious disease outbreaks; chemical, biological, radiological and nuclear events; as well as natural and human-made disasters. These plans have been tested in emergencies and exercises and are updated with lessons learned from experience". [2] The JEE also states that "risk communication is integrated into multiple communicable disease and emergency response plans". [2]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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: 1

Australia designates a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) has a section detailing a risk communication plan that is specifically intended for use during a public health emergency. The CDPLAN states that, in "a domestic public health incident that reruies a whole-of-government response .... the Health Minister will generally be the Australian Government spokesperson and will ensure that public communication objectives, particularly messages to support public safety, are achieved". Section 4.1.4. of the CDPLAN outlines a

communications strategy in the case of a Communicable Disease Incidents of National Significance (CDINS), including sections on "Communications across Government", "Communication with the Health Sector", "Communication with the Public" and "Media coordination". It also outlines the role of the National Health Emergency Media Response Network (NHEMRN), an additional coordinating mechanism activated in the event of a CDINS. [1] The Joint External Evaluation (JEE) for Australia, published in 2018, also outlines Australia's communication capacities. It states that "Australia has comprehensive systems in place to support risk communication in emergencies. A series of plans developed in consultation with partners and stakeholders from other sectors outline common objectives, roles and responsibilities, and approaches for mounting coordinated and complementary risk communication responses to a range of hazards, including infectious disease outbreaks; chemical, biological, radiological and nuclear events; as well as natural and human-made disasters. These plans have been tested in emergencies and exercises and are updated with lessons learned from experience". [2] The JEE also states that "risk communication is integrated into multiple communicable disease and emergency response plans". [2]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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

The Australian public health system has, in the past year, 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. Such sharing occurs both during active emergencies and on a regular basis. The Australia Department of Health has verified Twitter and Facebook accounts that it uses for these purposes. [1,2] During the COVID-19 pandemic, these social media profiles have shared information about testing and safety measures, and have also combatted rumors and misinformation. [3] They also share information related to public health outside of public health emergencies, for example encouraging healthy practices during pregnancy. [4] Also in the past year, the government has established several websites to share timely and accurate information about the COVID-19 pandemic, notably "Coronavirus disease (COVID-19): Outbreak update". [5,6] The social media profiles from before COVID-19 have shared information have included messages about public health emergencies such as ongoing outbreaks (such as MERS), in addition to routine public health information not related to public health emergencies, such as promoting influenza vaccination and combating asthma during smoke events from brush fires.. [7,8,9]

[1] Twitter. "@healthgovau". [https://twitter.com/healthgovau?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor]. Accessed 23 November 2020.

[2] Facebook. "@healthgovau". [https://www.facebook.com/healthgovau/]. Accessed 23 November 2020.
[3] Twitter. 22 October 2020. @healthgovau status update.
[https://twitter.com/healthgovau/status/1319511446858903553]. Accessed 23 November 2020.
[4] Twitter. 13 January 2020. @healthgovau status update.
[https://twitter.com/healthgovau/status/1216926673502986240]. Accessed 4 December 2020.
[5] Department of Health. "Coronavirus (COVID-19) health alert". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert?gclid=Cj0KCQiAh4j-BRCsARIsAGeV12B7nVqs3q2vCdDm8h2pU5Z4MBPMMIkvUGklNz0EcWUF_twUBj2q2AMaApWDEALw_wcB]. Accessed 23 November 2020.
[6] Department of Health. "Coronavirus Disease 2019 (Covid-19)".
[https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-novel-coronavirus.htm]. Accessed 23 November 2020.
[7] Twitter. 28 August 2019. @healthgovau status update. [https://twitter.com/healthgovau/status/1166877127939186688]. Accessed 23 November 2020.
[8] Twitter. 22 August 2019. @healthgovau status update. [https://twitter.com/healthgovau/status/1164474543139958784]. Accessed 23 November 2020.
[9] Twitter. 17 March 2019. @healthgovau status update. [https://twitter.com/healthgovau/status/1107441459974701057]. Accessed 4 December 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 Australian senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases in the past two years. There is no evidence of such sharing in media reports. [1,2,3] The prime minister, Scott Morrison, maintains a verified Twitter account that shows no evidence of misinformation. [4] He has also spoken out against the sharing of misinformation on the COVID-19 pandemic on social media. [4]

[1] British Broadcasting Corporation. [https://www.bbc.com/news]. Accessed 23 November 2020.
[2] The Australian. [https://www.theaustralian.com.au/]. Accessed 23 November 2020.
[3] The Sydney Morning Herald. [https://www.smh.com.au/]. Accessed 23 November 2020.
[4] Twitter. "@SCottMorrisonMP".
[https://twitter.com/ScottMorrisonMP?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor]. Accessed 23 November 2020.
[5] SKY TV. "FAKE NEWS: Scott Morrison blasts coronavirus misinformation on Twitter".
[https://www.heraldsun.com.au/news/national/fake-news-scott-morrison-blasts-coronavirus-misinformation-on-twitter/video/8577946675beea235ab5689dd4939d44]. Accessed 23 November 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: 86.55

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: 110.62

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: 2.0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 2.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0 , No = 1

Current Year Score: 0

There is evidence that Australia has, in the past year issued a restriction, without international/bilateral support, on the export/import of medical goods due to an infectious disease outbreak. The government announced in April 2020 that, with certain exceptions, several types of medical supplies could not be exported, including disposable face masks, disposable gloves, disposable gowns, googles, glasses, or eye visors, alcohol wipes, and hand sanitizer. [1,2] The porhibition was made "under regulation 13GI of the Customs (Prohibited Exports) Regulations 1958 ", and was to remain in effect during the period that tge "Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Declaration 2020 " remains in force. [1,2,3,4]

[1] Australian Border Force. "Exportation of goods during COVID-19 human biosecurity period". [https://www.abf.gov.au/prohibited-goods-subsite/Pages/exportation-goods-covid19-human-biosecurity.aspx]. Accessed 23 November 2020.
[2] Jane Owen. 22 April 2020. "COVID-19: Australian Export Restrictions on Health Related Products". Bird & Bird. [https://www.twobirds.com/en/news/articles/2020/australia/australian-export-restrictions-on-health-related-products]. Accessed 23 November 2020.
[3] Government of Australia. 18 March 2020. "Biosecurity (Human Biosecurity Emergency) (Human Coronavirus with Pandemic Potential) Declaration 2020". [https://www.legislation.gov.au/Details/F2020L00266]. Accessed 23 November 2020.
[4] National Law Review. 13 April 2020. "COVID-19: (Australia) Government Bans Price Gouging, Exploitative Exports of Personal Protective Equipment". [https://www.natlawreview.com/article/covid-19-australia-government-bans-price-gouging-exploitative-exports-personal]. Accessed 23 November 2020.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that Australia has, in the past year issued a restriction, without international/bilateral support, on the export/import of non-medical goods due to an infectious disease outbreak. There is no relevant information shared via the public websites of the Department of Health, the Department of Agriculture and Water Resources, the Department of Foreign Affairs and Trade, or the Department of Home Affairs. [1,2,3,4,5] There is no evidence of such restrictions in media reports. [5,6,7] There was no relevant information shared via the World Health Organization (WHO) country page, the WHO Disease Outbreak News site, or the OIE Weekly disease information site. [7,8,9,10]

[1] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[2] Department of Foreign Affairs and Trade. [https://dfat.gov.au/pages/default.aspx]. Accessed 16 November 2020.
[3] The Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 16 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[5] British Broadcasting Corporation. [https://www.bbc.com/news]. Accessed 23 November 2020.
[6] The Australian. [https://www.theaustralian.com.au/]. Accessed 23 November 2020.
[7] The Sydney Morning Herald. [https://www.smh.com.au/]. Accessed 23 November 2020.
[8] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 23 November 2020.
[9] World Health Organisation (WHO). "Disease Outbreak News". [https://www.who.int/csr/don/en/]. Accessed 23 November 2020.
[10] OIE World Animal Health Information System. "OIE Weekly Disease Information". [https://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 23 November 2020.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0 , No = 1

Current Year Score: 0

There is evidence that Australia has, in the past year, implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. In March 2020, Australia issued a blanket ban on all foreign nationals from non-essential travel to Australia. The ban remained in effect as of November 2020. [1,2] Other than the response to the COVID-19 pandemic, there is no other evidence of a relevant ban implemented by Australia. [3,4,5,6,7,8,9,10,11,12,13]

[1] Department of Health. 11 November 2020. "Coronavirus (Covid-19) Advice for International Travellers". [https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/coronavirus-covid-19-restrictions/coronavirus-covid-19-advice-for-international-travellers?utm_source=health.gov.au&utm_medium=redirect&utm_campaign=digital_transformation&utm_content=coronavirus-covid-19-advice-for-international-travellers]. Accessed 23 November 2020.
[2] Department of Home Affairs. 18 November 2020. "COVID-19 and the Border: Travel Restrictions and Exemptions". [https://covid19.homeaffairs.gov.au/travel-restrictions]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 16 November 2020.
[4] Department of Foreign Affairs and Trade. [https://dfat.gov.au/pages/default.aspx]. Accessed 16 November 2020.
[5] The Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 16 November 2020.
[6] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au]. Accessed 16 November 2020.
[7] Australian Border Force. [https://www.abf.gov.au/]. Accessed 23 November 2020.
[8] British Broadcasting Corporation. [https://www.bbc.com/news]. Accessed 23 November 2020.
[9] The Australian. [https://www.theaustralian.com.au/]. Accessed 23 November 2020.
[10] The Sydney Morning Herald. [https://www.smh.com.au/]. Accessed 23 November 2020.
[11] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 23 November 2020.
[12] World Health Organisation (WHO). "Disease Outbreak News". [https://www.who.int/csr/don/en/]. Accessed 23

November 2020.
[13] OIE World Animal Health Information System. "OIE Weekly Disease Information". [https://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 23 November 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: 367.78

2017

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 1255.08

2017

WHO; national sources

4.1.1c

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

Yes = 1 , No = 0

Current Year Score: 1

Australia has public workforce strategies in place to identify where there is an insufficient workforce and strategies to address these shortcomings. The Department of Health outlines the Stronger Rural Health Strategy which aims to build a sustainable, high quality health workforce that is distributed across the country according to community need particularly in

rural and remote communities. "To meet the challenge of redistributing the workforce, the Strategy includes a range of incentives, targeted funding and bonding arrangements and will give doctors more opportunities to train and practice in rural and remote Australia. It will also enable a stronger role for nurses and allied health professionals in the delivery of more multidisciplinary, team based models of primary health care". [1] The Stronger Rural Health Strategy is updated regularly and was last updated in July 2018. [1] The strategy includes direction for Workforce planning, junior doctor training, strengthening the nursing workforce, overseas-trained doctores in areas of doctor shortage, reformed bonded medical programs, the Royal Flying Doctor Service, streamlining general practice training, a workforce incentives program, and other measures. [1] According to the Department of Health (DoH), and the Joint External Evaluation (JEE) for Australia, published in 2018, through the Australian Health Protection Principal Committee (AHPPC) Australia "closely monitors the supply and distribution of its public health, epidemiology and emergency response workforce". [2, 3] Workforce supply is tested in regular exercises and "the Health Workforce Division within the DoH has an ongoing programme of modelling and monitoring of the medical workforce supply and demand in all areas". [2, 3] According to the JEE "an Australian Government Health Workforce Strategy is currently being prepared, but it will not identify public health and its related workforce as an area that needs attention". [2] In addition, the DoH ipublished an Aged Care Workforce Strategy in 2018 with the aim of growing and sustaining the workforce that provides aged care services and support. [4]

[1] Department of Health. 21 November 2019. "Stronger Rural Health Strategy Factsheets". [http://www.health.gov.au/internet/main/publishing.nsf/Content/stronger-rural-health-strategy-factsheets]. Accessed 23 November 2020.
[2] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[3] Department of Health. 28 February 2019. "Health Workforce". [http://www.health.gov.au/internet/main/publishing.nsf/Content/Health+Workforce-2]. ccessed 23 November 2020.
[4] Department of Health. 12 November 2020. "Aged Care Workforce Strategy". [https://www.health.gov.au/health-topics/aged-care/aged-care-reforms-and-reviews/aged-care-workforce-strategy]. Accessed 23 November 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 384

2016

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

Australia has the capacity to isolate patients with highly communicable diseases in patient isolation facilities. [1] The Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010) outlines that hospitals must be equipped to conduct transmission-based precautions (such as 'allocating a single room with a closing door to a patient with a suspected or confirmation infection (isolation)'), contact precautions, droplet precautions and airborne precautions. [2] The "Infection control guidelines for the management of patients with suspected or confirmed pulmonary tuberculosis in healthcare settings", published by the Department of Health, outlines that "the Australian standard is that all hospitals, irrespective of their size, should have at least one Type 5 (respiratory isolation) room and should aim to provide between 1% and 3% of all available beds for respiratory isolation" [3]. For example, the Queensland hospital Royal Brisbane and Women's Hospital has an "airlocked containment unit" and Queensland Health stated that "there were 157 negative-pressure rooms across the state that could be used in the event of a medical emergency" [4, 5]. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) states that the Australian Animal Health Laboratory (AAHL) has a biocontainment facility but this is used for conducting research rather than isolating patients [6].

[1] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[2] A National Health and Medical Research Council. 2010. "The Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010)". [https://nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2010]. Accessed 23 November 2020.
[3] Department of Health. Updated September 2016. "Infection control guidelines for the management of patients with suspected or confirmed pulmonary tuberculosis in healthcare settings". [http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-cdi4003i.htm]. Accessed 23 November 2020.
[4] The Courier Mail. September 2014. "Ebola watch: Queensland hospitals' containment rooms". [https://www.couriermail.com.au/news/queensland/ebola-watch-queensland-hospitals-containment-rooms/news-story/4a3e53d93a1ccb0bad401b7e7012698f]. Accessed 23 November 2020.
[5] ABC News. October 2014. "Patient isolated at Royal Brisbane and Women's Hospital after returning from West Africa, developing fever". [https://www.abc.net.au/news/2014-10-26/patient-in-isolation-in-brisbane-hospital/5842620]. Accessed 23 November 2020.
[6] Commonwealth Scientific and Industrial Research Organisation (CSIRO). Australian Animal Health Laboratory (AAHL). 'Research Facilities'. [https://www.csiro.au/en/Research/Facilities/AAHL#]. Accessed 23 November 2020.

4.1.2c

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

Current Year Score: 1

There is evidence to show that Australia has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years, or that it has has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years. Australia expanded quarantine facilities in response to the COVID-19 pandemic. A large part of Australia's quarantine network for COVID-19 consists of repurposed hotel rooms. [1,2] The Australian government also worked with public and private hospitals to expand isolation capacity. In addition to establishing isolation facilities for COVID-19 patients, Australian hospitals also converted existing wards and theaters to treat COVID-19 patients. [3] As one article in the Medical Journal of Australia noted, "Australian ICUs report potential to nearly triple intensive care bed capacity in response to predicted increased demand associated with pandemic COVID-19. " [4]There

is no other relevant information shared via the public website of the Department of Health. [5]

[1] Probyn, A., S. Borys and G. Hitch. 14 October 2020. "Coronavirus quarantine capacity for arrivals in Australia to be expanded with new Darwin processing centre". ABC News. [https://www.abc.net.au/news/2020-10-15/howard-springs-coronavirus-quarantine-expanded-australians-home/12769796]. Accessed 2 May 2021.
[2] Ritchie, H. 10 March 2021. "'Even prisoners get fresh air': Inside Australia's 'lucky dip' hotel quarantine system". CNN. [https://www.cnn.com/travel/article/australia-hotel-quarantine-system/index.html]. Accessed 2 May 2021.
[3] Department of Health. 1 April 2020. "Australian Government partnership with private health sector secures 30,000 hospital beds and 105,000 nurses and staff, to help fight COVID-19 pandemic." [https://www.health.gov.au/ministers/the-hon-greg-hunt-mp/media/australian-government-partnership-with-private-health-sector-secures-30000-hospital-beds-and-105000-nurses-and-staff-to-help-fight-covid-19-pandemic]. Accessed 25 June 2021.
[4] Litton, et al. 30 MArch 2020. "Surge capacity of Australian intensive care units associated with COVID-19 admissions." Medical Journal of Australia. [https://www.mja.com.au/journal/2020/surge-capacity-australian-intensive-care-units-associated-covid-19-admissions]. Accessed 25 June 2021.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 2

Australia has a national procurement protocol in place which applies across all Australian governmental departments, and can be used to procure laboratory supplies and medical supplies. The Commonwealth Procurement Rules apply to both Australia's Department of Health and Department of Agriculture and Water Resources. [1] The Department of Health's Annual Procurement Plan is in accordance with the Commonwealth Procurement Rules and it is used to acquire laboratory items, as is the Department of Agriculture and Water Resources's Annual Procurement Plan. [2, 3] AusTender is the Australian Government's procurement information system. It is a "centralised web-based facility that publishes a range of information, including relevant entities' planned procurements, open tenders and contracts awarded. It also supports secure electronic tendering to deliver integrity and efficiency for relevant entities and potential suppliers" [4]. Through AusTender, departments have procured "Laboratory and scientific equipment" and "Medical Equipment and Accessories and Supplies" such as personal protective equipment. [5,6]

[1] Department of Finance. April 2019. "Commonwealth Procurement Rules". [https://www.finance.gov.au/government/procurement/commonwealth-procurement-rules]. Accessed 23 November 2020.
[2] Australian Government. "Annual Procurement Plan View - Department of Health". [https://www.tenders.gov.au/?event=public.app.view&appuuid=78766E81-C367-21AA-66C74C6FE98ED22D]. Accessed 23 November 2020.
[3] Australian Government. "Annual Procurement Plan View - Department of Agriculture and Water Resources". [https://www.tenders.gov.au/?event=public.APP.view&appuuid=8967D7E4-0982-6E4B-566BB433F84CFF80]. Accessed 23

November 2020.
[4] AusTender. [https://www.tenders.gov.au/]. Accessed 23 November 2020.
[5] AusTender. 5 November 2020. "Current ATM View - PSC001358". [https://www.tenders.gov.au/Atm/Show/fe079443-deff-40b8-8018-14a83448c4e7]. Accessed 23 November 2020.
[6] AusTender. 27 November 2020. "Current ATM View - 2020 - C04454". [https://www.tenders.gov.au/Atm/Show/93c64280-6e41-4e2c-be39-afdd77c02518]. Accessed 23 November 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 evidence that Australia maintains a stockpile of medical supplies (including medical equipment and medical countermeasures) for national use during a public health emergency. The Department of Health (DoH) manages the National Medical Stockpile (NMS), which is "a strategic reserve of drugs, vaccines, antidotes and protective equipment for use in the national response to a public health emergency". Items are stockpiled to increase Australia's self-sufficiency and "to meet high levels of demand". The website of the NMS explicitly states that the stockpile includes personal protective equipment (PPE), antivirals, vaccine, and drug stockpiles; though its webiste and the audit do not mention the stockpiling of test kits.. [1, 2, 3]. According to a 2014 audit, the NMS contains 42 products and over 110 million items. It is focused on products associated with human influenza pandemic preparedness. [2] The supplies available through the NMS are deemed sufficient for the outbreak of a public health emergency and include "a limited supply of highly specialised drugs that may be difficult to get through normal channels in an emergency". [3]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 2020.
[2] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 23 November 2020.
[3] Department of Health. 19 October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 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 insufficent evidence to show that Australia has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The Department of Health (DoH) does maintain and manage the National Medical Stockpile (NMS), but public descriptions of the NMS do not mention the inclusion of laboratory supplies. The NMS website describes it as "a strategic reserve of drugs, vaccines, antidotes and protective equipment for use in the national response to a public health emergency". Items are stockpiled to increase Australia's self-sufficiency and "to meet high levels of demand".

[1] According to a 2014 audit, the NMS contains 42 products and over 110 million items, focused on products associated with human influenza pandemic preparedness. However, there is no mention in the audit of laboratory supplies. [2] Australia's Joint External Evaluation (JEE), published in 2018, does not discuss the stockpiling or deployment of laboratory supplies, except to say that Australia has limited domestic capacity to produce them. [3] There is no relevant information shared via the public websites of the Department of Health, the Department of Defence, the Department of Home Affairs, or the Therapeutic Goods Administration (the drug regulatory agency). [4,5,6,7] The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) does not include a dsecription of a stockpile of laboratory supplies. [8] The Australian Health Management Plan for Pandemic Influenza (AHMPPI), a disease-specific preparedness plan, states that it is the responsibility of the Australian government to "build national laboratory capacity through the supply of laboratory equipment, tests and reagents, to meet identified gaps in capacity", but does not indicate whether this action has been executed or whether a stockpile exists. [9] In March 2020, in the early stages of the global COVID-19 pandemic, media reported that Australia was suffering from a shortage of a common reagent needed to conduct tests for the novel coronavirus; the Australian Medical Association blamed "very variable stocking" of the reagent for the shortage. [10]

[1] Department of Health. 19 October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[2] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 23 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[6] Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 23 November 2020.
[7] Therapeutic Goods Administration. [https://www.tga.gov.au/]. Accessed 23 November 2020.
[8] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[9] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[10] Christopher Knaus, 16 March 2020. "Australian Health Department Says Supply of Key Component in Coronavirus Testing under Strain". The Guardian. [https://www.theguardian.com/world/2020/mar/16/australian-doctors-warn-coronavirus-testing-compromised-by-failure-to-stockpile-key-chemical-reagent]. Accessed 23 November 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 insufficient evidence to confirm that Australia conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. The government's main description of the National Medical Stockpile (NMS) does not mention such a review. [1] The legislation that the government says regulates the NMS (the National Health Security Act 2007, the National Health Security Amendment Act 2012, and the Public Governance, Performance and Accountability Act 2013) does not mention such a review. [2,3,4] The NMS was audited in 2014 and 2020. The audits describe systematic stock-taking, including an information management system called jiMMY that records all

additions to the stockpile, and is synced annually with the Department of Health's financial information system monthly and further synced with stock takes annually. [5,6] However, there is no mention of this stock-taking being used to evaluate the NMS's readiness for a public health emergency. In fact, news reports on the 2020 audit say it found that the NMS had failed to prepare for pandemic risks. [7] There is no other relevant information shared via the public websites of the Department of Health website, the Department of Defence, or the Therapeutic Goods Administration. [8,9,10] Australia's Joint External Evaluation (JEE), published in 2018, does not mention the existence of an annual review of the stockpile's sufficiency. [12] A "Strategic Management Plan for the Stockpile" mentioned in the 2010 audit does not appear to be publicly available. [5]

[1] Department of Health. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed2 May 2021.
[2] Government of Australia. 2007. "National Health Security Act". [https://www.legislation.gov.au/Details/C2016C00847]. Accessed 2 May 2021.
[3] Government of Australia. 2012. "National Health Security Amendment Act". [https://www.legislation.gov.au/Details/C2012A00182]. Accessed 2 May 2021.
[4] Government of Australia. 2013. "Public Governance, Performance and Accountability Act". [https://www.legislation.gov.au/Details/C2013A00123]. Accessed 2 May 2021.
[5] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 2 May 2021.
[6] Australian National Audit Office (ANAO). 10 December 2020. "Planning and Governance of COVID-19 Procurements to Increase the National Medical Stockpile". [https://www.anao.gov.au/work/performance-audit/planning-and-governance-covid-19-procurements-to-increase-the-national-medical-stockpile]. Accessed 2 May 2021.
[7] Knaus, C. 10 December 2020. "Australia did not consider pandemic risk in medical stockpile planning, audit finds". Guardian. [https://www.theguardian.com/australia-news/2020/dec/10/australia-did-not-consider-pandemic-risk-in-medical-stockpile-planning-audit-finds]. Accessed 2 May 2021.
[8] Department of Health. [http://www.health.gov.au/]. Accessed 2 May 2021.
[9] Department of Defence. [http://www.defence.gov.au/]. Accessed 2 May 2021.
[10] Therapeutic Goods Administration. [https://www.tga.gov.au/]. Accessed 2 May 2021.
[11] World Health Organization (WHO). 2018. “Joint External Evaluation of IHR Core Capacities of Australia”. [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 2 May 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

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

Current Year Score: 1

There is evidence that Australia has a mechanism to procure medical supplies (including medical equipment and medical countermeasures, or MCMs) for national use during a public health emergency, but no evidence that the country has a plan to leverage domestic manufacturing capacity to produce surch medical supplies. The Department of Health (DoH) manages the National Medical Stockpile (NMS), which is "a strategic reserve of drugs, vaccines, antidotes and protective equipment

for use in the national response to a public health emergency". Items are stockpiled to increase Australia's self-sufficiency and "to meet high levels of demand". [1] A 2014 audit of the NMS states that its stockpile relies in part on "contracts [that] have been negotiated with overseas suppliers for the supply of pharmaceuticals and personal protective equipment (PPE) for the stockpile". The names and details of these contracts are not specified, but the audit states that, at the time of publication, there were 5 such contracts in place for the production of personal protective equipment (PPE), and 12 such contracts in place for the production pandemic medicines. [2] Australia's Joint External Evaluation (JEE), published in 2018, states that Australia has "limited manufacturing capacity" to respond to public health emergencies. It does not mention the contracts that support the NMS, but does warn that "countermeasures cannot be procured 'just in time' within normal emergency (short) time frames because of manufacturing time lines, global market pressures and the complexity of the global supply chain ". [3] There is no other relvant information shared via the public websites of the Department of Health, the Department of Defence, the Department of Home Affairs, or the Therapeutic Goods Administration (the drug regulatory agency). [4,5,6,7] The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) does not contain relevant information. [8]

[1] Department of Health. 19 October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[2] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 23 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[6] Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 23 November 2020.
[7] Therapeutic Goods Administration. [https://www.tga.gov.au/]. Accessed 23 November 2020.
[8] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.

4.2.3b

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

Current Year Score: 0

There is insufficient evidence to show that Australia has a plan to leverage domestice manufacturing capacity to produce laboratory supplies for national use during a public health emergency, nor that it has a plan to procure such supplies. The Department of Health (DoH) does maintain and manage the National Medical Stockpile (NMS), and the NMS is supported in part by contracts for procurement. [1,2] However, public descriptions of the NMS and its contractsdo not mention the inclusion of laboratory supplies. The NMS website describes it as "a strategic reserve of drugs, vaccines, antidotes and protective equipment for use in the national response to a public health emergency". Items are stockpiled to increase Australia's self-sufficiency and "to meet high levels of demand". [1] A 2014 audit of the NMS states that its stockpile relies in part on "contracts [that] have been negotiated with overseas suppliers for the supply of pharmaceuticals and personal

protective equipment (PPE) for the stockpile"; there is no mention of contracts for the provision of laboratory supplies. [2] Australia's Joint External Evaluation (JEE), published in 2018, states that Australia has "limited manufacturing capacity" to respond to public health emergencies, and notes that laboratory supplies are produced offshore. It does not mention the contracts that support the NMS. [3] There is no relevant information shared via the public websites of the Department of Health, the Department of Defence, the Department of Home Affairs, or the Therapeutic Goods Administration (the drug regulatory agency). [4,5,6,7] The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) does not include a dsecription of a stockpile of laboratory supplies. [8] The Australian Health Management Plan for Pandemic Influenza (AHMPPI), a disease-specific preparedness plan, states that it is the responsibility of the Australian government to "build national laboratory capacity through the supply of laboratory equipment, tests and reagents, to meet identified gaps in capacity", but does not indicate how or whether this action has been executed. [9] n March 2020, in the early stages of the global COVID-19 pandemic, media reported that Australia was suffering from a shortage of a common reagent needed to conduct tests for the novel coronavirus; the Australian Medical Association blamed "very variable stocking" of the reagent for the shortage. [10] In April 2020, the Australian government issued a tender for Australian manufacturers to produce reagents and other laboratory supplies. [11] However, a more detailed description of the Department of Industry, Science, Energy and Resources' strategy for responding to the COVID-19 pandemic does not reveal a plan targeting the manufacture or procurement of laboratory supplies. [12]

[1] Department of Health. 19 October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[2] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 23 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[6] Department of Home Affairs. https://www.homeaffairs.gov.au/. Accessed 23 November 2020.
[7] Therapeutic Goods Administration. [https://www.tga.gov.au/]. Accessed 23 November 2020.
[8] Department of Health. November 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[9] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[10] Christopher Knaus, 16 March 2020. "Australian Health Department Says Supply of Key Component in Coronavirus Testing under Strain". The Guardian. [https://www.theguardian.com/world/2020/mar/16/australian-doctors-warn-coronavirus-testing-compromised-by-failure-to-stockpile-key-chemical-reagent]. Accessed 23 November 2020.
[11] Department of Industry, Science, Energy and Resources. 9 April 2020. "Call for Australian manufacturers to produce primers, probes and other reagents for COVID-19 RT-PCR testing". [https://www.industry.gov.au/news-media/call-for-australian-manufacturers-to-produce-primers-probes-and-other-reagents-for-covid-19-rt-pcr-testing]. Accessed 23 November 2020.
[12] Department of Industry, Science, Energy and Resources. "Our department's response to Coronavirus (COVID-19)". [https://www.industry.gov.au/about-us/our-departments-response-to-coronavirus-covid-19]. Accessed 23 November 2020.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia has a national plan in place for dispensing medical countermeasures (MCMs) for national use during a public health emergency, though there is a strategic stockpile of MCMs. The Department of Health (DoH) manages the National Medical Stockpile (NMS), "a strategic reserve of drugs, vaccines, antidotes and protective equipment for use in the national response to a public health emergency". Items are stockpiled to increase Australia's self-sufficiency and "to meet high levels of demand'[1]. Components of the NMS can be rapidly dispensed to affected jurisdictions through the coordination of the National Incident Room (NIR). Request for the deployment of the stockpile are through the NIR to the Chief Medical Officer (CMO) who has authority for release. [2] Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) states that "some actions for communicable disease control are not part of usual health or government activity - dispensing stockpiled medications, border screening - therefore they are not practised in everyday incident management and are not embedded within corporate knowledge of health or emergency services" but it does not include a plan for dispensing medical countermeasures [3]. Disease-specific plans, such as the Australian Health Management Plan for Pandemic Influenza (AHMPPI) and the National Polio Emergency Response Plan, do not include a plan for dispensing medical countermeasures. [4, 5] The National Health Emergency Response Arrangements (NatHealth Arrangements), which articulates the strategic arrangements and mechanisms for the coordination of the Australian health sector in response to emergencies of national consequence, also does not include a plan for dispensing countermeasures [6]. An Audit on the Management of the National Medical Stockpile from 2014, states that "states and territories (states) will distribute Stockpile items in accordance with a distribution plan developed by each jurisdiction, consistent with their responsibility for the management of their respective health delivery systems and their operational responsibility for distributing stockpile items". This document, too, does not have a self-contained plan for dispensing. [7] There is no relevant information in Australia's Joint External Evaluation (JEE), published in 2018. [8]

[1] Department of Health. 19 October 2020. "National Medical Stockpile". [https://www.health.gov.au/initiatives-and-programs/national-medical-stockpile]. Accessed 23 November 2020.
[2] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/94813DA6B8F93C68CA257BF0001C11DB/$File/NatHealth-nov11.pdf]. Accessed 23 November 2020.
[3] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[4] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[5] Department of Health. January 2019. "Poliomyelitis Outbreak Response Plan for Australia". [http://www.health.gov.au/internet/main/publishing.nsf/Content/polio-plan.htm]. Accessed 23 November 2020.
[6] Department of Health. November 2011. "National Health Emergency Response Arrangements". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l]. Accessed 23

November 2020.
[7] Australian National Audit Office (ANAO). 2014. "Management of the National Medical Stockpile". [https://www.anao.gov.au/sites/default/files/AuditReport_2013-2014_53.pdf.] Accessed 23 November 2020.
[8] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 16 November 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

Australia does not have a public plan in place to receive health personnel from other countries to respond to a public health emergency. According to Australia's Joint External Evaluation (JEE), published in 2018, "although Australia has a national framework for the preparedness, deployment and post-deployment activities of the Australian Medical Assistance Team (AUSMAT), Australia does not have an existing procedure in place to accept international clinical teams into Australia". [1] The Department of Home Affairs' Emergency Management Australia's "EAS Country Disaster Response Arrangements", published in 2015, states that "FMT teams are permitted on a case-by-case basis". [2] There is no evidence of such a public plan to receive health personnel on the Department of Health website nor the Department of Defence website. [3, 4] In April 2020 in response to the COVID-19 pandemic, Australia lifted restrictions on the ability of foreign nursing students to work in the country. However, there is no evidence that this measure was issued as part of a broader plan for foreign health personnel. [5]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[2] Department of Home Affairs. 2015 "EAS Country Disaster Response Arrangements". [https://www.homeaffairs.gov.au/emergency/files/tool-3-eas-country-disaster-response-arrangements.pdf]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Defence. [http://www.defence.gov.au/]. Accessed 23 November 2020.
[5] Jenny Noyes. 18 March, 2020. "Visa work restrictions lifted on 20,000 international student nurses". Sydney Morning Herald. [https://www.smh.com.au/national/visa-work-restrictions-lifted-on-20-000-international-student-nurses-20200318-p54bfz.html]. Accessed 23 November 2020.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

Does the constitution explicitly guarantee citizens' right to medical care?
Guaranteed free = 4, Guaranteed right = 3, Aspirational or subject to progressive realization = 2, Guaranteed for some groups, not universally = 1, No specific provision = 0

Current Year Score: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.7

2015

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

4.4.1c

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

Input number

Current Year Score: 874.23

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 insuffiicent evidence to confirm that the Australian Department of Health has issued legislation, a policy or public statement committing to provide prioritised health care to healthcare workers who become sick in the event of a public health emergency. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) outlines that "the safety and health of healthcare workers will be pivotal to a successful response by primary and secondary/tertiary services in the event of a CDINS', and that 'individual health services should develop a comprehensive package of services that addresses both prevention and care, and provides support for the physical and psychological health of staff". It also states that "health service providers will be responsible for ensuring the ongoing competency of staff with respect to infection prevention and control, to avoid the need for significant extra training in an emergency situation". However, it does not explicitly state that healthcare workers will be afforded priority treatment in the event of a public health emergency. [1] Likewise, the 2019 Australian Health Management Plan for Pandemic Influenza (AHMPPI) states that "to support and maintain health system capacity, consideration of measures to protect the healthcare workforce will be of key importance". It also calls for providing "candidate pandemic vaccines and/or antiviral PrEP as appropriate" to healthcare workers, and goes on to state that, at certain stages of a pandemic "targeted use of prophylaxis" for healthcare workers may be advisable, and that "depending on demand, there may be a need to prioritise available stocks of antivirals. Prioritisation should be based on exposure to risk and duration of risk". However, despite this emphasis on healthcare workers, the AHMPPI does not state a policy of priority of healthcare for sick healthcare workers. [2] There is no other relevant information shared via the website of the Department of Health or Australia's Joint External Evaluation (JEE), which was published in 2018. [3,4]

[1] Department of Health: Australian Health Protection Principal Committee. September 2016. "Emergency Response Plan for Communicable Disease Incidents of National Significance." [https://www.health.gov.au/internet/main/publishing.nsf/Content/7A38C92C483C8B77CA25805E001A402D/$File/CDPLAN.pdf]. Accessed 23 November 2020.
[2] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23November 2020.
[4] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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: 1

There is a system in place for public health officials and healthcare workers to communicate during a public health emergency. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CPLAN) outlines a strategy for "Communication with the health sector". It states that "state and territory health departments will consolidate communication with healthcare workers and providers (both public hospitals and non-government, such as private hospitals) and include state and local level information via their own communication channels". [1] The CDPLAN outlines that "the

Australian Government Department of Health is responsible for communications with the health care sector at a national level. Existing channels include principal committees of the Australian Health Ministers Advisory Council (AHMAC), and stakeholders such as professional colleges and associations, the primary health networks and the GP Roundtable. In many cases, this will support state and territory health department communications with the health and clinical care system in their jurisdictions". [1] State systems implement further systems for communication between public health officials and healthcare workers. For example, the South Australia Health Major Incident Plan, published in November 2018, outlines that Health State Commander, Site Commanders, SA Ambulance Service Gold Commanders will be appointed and will communicate via "regular teleconferences" between themselves and Local Health Networks (LHNs). [2] Australia's Joint External Evaluation (JEE), published in 2018, does not include additional relevant information. [3]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] SA Health. November 2018. "SA Health Major Incident Plan". [https://www.sahealth.sa.gov.au/wps/wcm/connect/ebb83e0040c21165a36ca33ee9bece4b/201811+SA+Health+Major+Incident+Plan+v1.2_November2018.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-ebb83e0040c21165a36ca33ee9bece4b-mxUMpfm]. Accessed 23 November 2020.
[3] World Health Organization (WHO). 2018. “Joint External Evaluation of IHR Core Capacities of Australia”. [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 2 May 2021.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The system in place for public health officials and healthcare workers to communicate during a public health emergency encompasses healthcare workers in both the public and private sector. The Emergency Response Plan for Communicable Disease Incidents of National Significance (CPLAN) outlines a strategy for "Communication with the health sector". It states that "state and territory health departments will consolidate communication with healthcare workers and providers (both public hospitals and non-government, such as private hospitals) and include state and local level information via their own communication channels". [1] State systems implement further systems for communication between public health officials and healthcare workers. For example, the South Australia Health Major Incident Plan, published in November 2018, outlines that Health State Commander, Site Commanders, SA Ambulance Service Gold Commanders will be appointed and will communicate via "regular teleconferences" between themselves and Local Health Networks (LHNs) [2]. However, it does not specifically mention workers in the private sector. [2] Australia's Joint External Evaluation (JEE), published in 2018, does not include additional relevant information. [3]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] SA Health. November 2018. "SA Health Major Incident Plan". [https://www.sahealth.sa.gov.au/wps/wcm/connect/ebb83e0040c21165a36ca33ee9bece4b/201811+SA+Health+Major+Incident+Plan+v1.2_November2018.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-ebb83e0040c21165a36ca33ee9bece4b-mxUMpfm]. Accessed 23 November 2020.

[3] World Health Organization (WHO). 2018. “Joint External Evaluation of IHR Core Capacities of Australia”. [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 2 May 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is public evidence that Australia monitors and tracks the number of health care associated infections (HCAIs) that take place in healthcare facilities, which is done at the jurisdictional level but not at the national level. All hospitals in Australia are accredited with the National Safety and Quality Health Service (NSQHS) Standards. Standard 3 (Preventing and controlling healthcare associated infections) requires hospitals to implement measures to prevent, monitor and control healthcare-associated infections. This data is collected at hospital and jurisdictional level. According to AUstralia's Joint External Evaluation (JEE), published in 2018, "the NSQHS Standards were endorsed in 2011 and accreditation against the Standards commenced for all hospitals in 2013". [1] The Guide to the National Safety and Quality Health Service Standards for health service organisation boards, published by the Australian Commission on Safety and Quality in Healthcare in 2015, confirms that "since 2013, accreditation to the NSQHS Standards has been mandatory for all Australian hospitals and day procedure services" as does the Quality Innovation Performance website which states "accreditation against the NSQHS Standards is compulsory for all Australian hospitals". [2, 3] The AMR Implementation Plan confirms this by outlining Australia's ambition as of November 2016 to "establish comprehensive and integrated national surveillance of healthcare-associated infections, including for resistant and non-resistance organisms to inform IPC policy and guidelines". [4] The website of the Australian Commission on Safety and Quality in Healthcare states that its Healthcare-Associated Infection Surveillance Progam "Aims to reduce HAIs by providing resources that support systems and strategies to prevent infection and manage infections effectively when they occur". [5] The Program offers guides for implementation of surveillance of several different pathogens on its website. [5]

[1] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 2020.
[2] Australian Commission on Safety and Quality in Healthcare. April 2015. "The Guide to the National Safety and Quality Health Service Standards for health service organisation boards". [https://www.safetyandquality.gov.au/wp-content/uploads/2015/04/Guide-to-the-National-Safety-and-Quality-Health-Service-Standards-for-health-service-organisation-boards-April-2015.pdf]. Accessed 23 November 2020.
[3] Quality Innovation Performance. "National Safety and Quality Health Service (NSQHS) Standards". [https://www.qip.com.au/standards/national-safety-and-quality-health-service-nsqhs-standards/]. Accessed 23 November 2020.
[4] Government of Australia. November 2016. "Implementation Plan: Australia's first national antimicrobial resistance strategy 2015-19". [https://www.amr.gov.au/resources/national-amr-implementation-plan]. Accessed 23 November 2020.
[5] Australian Commission on Safety and Quality in Healthcare. "Healthcare-Associated Infection Program".

[https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection]. Accessed 23 November 2020.
[6] Australian Commission on Safety and Quality in Healthcare. "HAI Surveillance". [https://www.safetyandquality.gov.au/our-work/healthcare-associated-infection/national-hai-surveillance-initiative/]. Accessed 23 November 2020.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a national requirement for ethical review before beginning a clinical trial in Australia. The Therapeutic Goods Act 1989 requires a Human Research Ethics Committee (HREC) to review and monitor all clinical trials of unregistered therapeutic goods. [1] HRECs review all research proposals involving human participants to ensure that they meet ethical standards and guidelines. These guidelines include the National Statement on Ethical Conduct in Human Research 2007 (updated 2015). [2] The National Statement requires many types of human research to undergo ethics review. It also sets out the requirements for an HREC's establishment, operation and membership.

[1] Australian Government. Federal Register of Legislation. 2018. The Therapeutic Goods Act 1989. [https://www.legislation.gov.au/Series/C2004A03952]. Accessed 23 November 2020.
[2] National Health and Medical Research Council. Updated 2015. "National Statement on Ethical Conduct in Human Research (2007)". [https://nhmrc.gov.au/about-us/publications/national-statement-ethical-conduct-human-research]. Accessed 23 November 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: 1

There is evidence to suggest that Australia has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. Following a Review of Medicines and Medical Devices Regulation (MMDR Review) in March 2015, the Therapeutic Goods Administration (TGA) consulted about expedited approvals and introduced two priority review pathways. [1, 2] The TGA's "Consultation: Expedited pathways for prescription medicines: Eligibility criteria and designation process" document states that "in circumstances where a medicine is considered by the TGA to be a significant therapeutic advance or of critical importance to the Australian community (for example, in emergency situations), we have worked with relevant sponsors to facilitate early access to the new product, provided that it meets the TGA's quality, safety and efficacy requirements". [3] It outlines two expedited pathways: 1) "The Priority Review pathway will prioritise the evaluation of novel prescription medicines that meet the eligibility criteria and have a complete data dossier, with a view to reducing the target timeframe for a decision regarding registration of the medicine in the ARTG [Australian Register of

Therapeutic Goods]". [3] The second expedited pathway relates to emergency situations such as ongoing pandemics. "The Provisional Approval pathway aims to allow medicines to reach consumers with unmet clinical needs earlier than might otherwise be the case, by allowing certain medicines to be provisionally registered on the basis of early data on efficacy and safety (e.g. based on surrogate endpoints or other relevant data, rather than on patient safety and efficacy data from full Phase III clinical trials). Medicines will only be provisionally registered in the ARTG where the benefit to public health of earlier availability of the medicine outweighs the risk inherent in the fact that additional clinical data are still required. Full non-clinical modules will still be required. Provisional registration will be limited in duration and will automatically lapse at the end of a specified period unless sponsors meet the conditions imposed by the TGA". [3, 4]

[1] NPS Medicine Wise. Australian Subscriber. August 2018. "Fast-tracking of new drugs: getting the balance right". [https://www.nps.org.au/australian-prescriber/articles/fast-tracking-of-new-drugs-getting-the-balance-right]. Accessed 23 November 2020.
[2] Department of Health. March 2017. "Expert Review of Medicines and Medical Devices Regulation". [http://www.health.gov.au/internet/main/publishing.nsf/Content/Expert-Review-of-Medicines-and-Medical-Devices-Regulation]. Accessed 23 November 2020.
[3] Therapeutic Goods Administration (TGA). October 2016. "Consultation: Expedited pathways for prescription medicines". [https://www.tga.gov.au/sites/default/files/consultation-expedited-pathways-prescription-medicines.pdf]. Accessed 23 November 2020.
[4] Therapeutic Goods Administration (TGA). Updated March 2018. Provisional Approval Pathway. [https://www.tga.gov.au/provisional-approval-pathway-prescription-medicines]. Accessed 23 November 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

Australia has a government agency that is responsible for approving new medical countermeasures for humans. The Therapeutic Goods Administration (TGA) is part of the Australian Government Department of Health and, according to the TGA website, "is responsible for regulating therapeutic goods including prescription medicines, vaccines, sunscreens, vitamins and minerals, medical devices, blood and blood products. Almost any product for which therapeutic claims are made must be entered in the Australian Register of Therapeutic Goods (ARTG) before it can be supplied in Australia." [1]

[1] Department of Health Therapeutic Goods Administration. "TGA Basics". [https://www.tga.gov.au/tga-basics]. Accessed 23 November 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: 1

There is an expedited process for approving medical countermeasures for human use during public health emergencies in Australia. According to Australia's Emergency Response Plan for Communicable Disease Incidents of National Significance

(CDPLAN), developed by the Australian Health Protection Principal Committee and published in September 2016, "the Therapeutic Goods Act 1989 establishes a framework for ensuring the timely availability of therapeutic goods (i.e. medicines, medical devices and biological products) that are of acceptable quality, safety and efficacy/performance". There are provisions within the Therapeutic Goods Act, namely "Subdivision C - Exempting biologicals to deal with emergencies", that "operate at an individual patient level and at a program level (such as the maintenance of a National Medical Stockpile) to allow for the importation and supply of products that have not been approved for use in Australia". [1] The CDPLAN specifies that such products "may be required to deal with an actual threat to individual and public health caused by an emergency" or to prepare for such a future threat. [1, 2] As described in the TGA's "Consultation: Expedited pathways for prescription medicines: Eligibility criteria and designation process" document, published in 2016, "the Provisional Approval pathway aims to allow medicines to reach consumers with unmet clinical needs earlier than might otherwise be the case, by allowing certain medicines to be provisionally registered on the basis of early data on efficacy and safety". [3, 4]

[1] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.
[2] [1] Australian Government. Federal Register of Legislation. 2018. "The Therapeutic Goods Act 1989". [https://www.legislation.gov.au/Series/C2004A03952]. Accessed 23 November 2020.
[3] Therapeutic Goods Administration (TGA). October 2016. "Consultation: Expedited pathways for prescription medicines". [https://www.tga.gov.au/sites/default/files/consultation-expedited-pathways-prescription-medicines.pdf]. Accessed 23 November 2020.
[4] Therapeutic Goods Administration (TGA). Updated March 2018. Provisional Approval Pathway. [https://www.tga.gov.au/provisional-approval-pathway-prescription-medicines]. Accessed 23 November 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

Pandemics are integrated into Australia's National Strategy for Disaster Resilience, published in December 2009. While Australia does not have a standalone national disaster risk reduction strategy for pandemics and the National Strategy for Disaster Resilience does not have a specific section on pandemics, it does state that "while the Strategy focuses on natural disasters, the approach it articulates may also be applicable in preparing communities to deal with other disasters such as pandemic, animal disease and terrorist events". [1] According to Australia's answers to the Sendai Framework Data Readiness Review and the National Progress Report on the Implementation of the Hyogo Framework for Action (2013-2015), the National Strategy for Disaster Resilience is the country's risk reduction strategy and it is still valid. [2,3] Further, Australia's Sendai reporting indicates that its risk reduction strategy is supplemented by other documents that specifically focus on epidemics and pandemics, including the National Health Security Agreement, and the Australian Health Management Plan for Pandemic Influenza (AHMPPI). [2,4,5]

[1] Australian Institute for Disaster Resilience. 2011. "National Strategy for Disaster Resilience". [https://knowledge.aidr.org.au/media/2153/nationalstrategyfordisasterresilience.pdf]. Accessed 23 November 2020.
[2] United Nations Office for Disaster Risk Reduction. April 2015. "National Progress Report on the Implementation of the Hyogo Framework for Action (2013-2015)". [https://www.preventionweb.net/english/hyogo/progress/reports/v.php?id=40149&pid:223]. Accessed 23 November 2020.
[3] Department of Foreign Affairs and Trade. "Disaster risk reduction and resilience". [https://knowledge.aidr.org.au/resources/national-strategy-for-disaster-resilience/].
[4] Department of Health. 2011. "National Health Security Agreement". [https://www.health.gov.au/resources/publications/national-health-security-agreement]. Accessed 23 November 2020.
[5] Department of Health. August 2019. "The Australian Health Management Plan for Pandemic Influenza (AHMPPI)". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-ahmppi.htm]. Accessed 23 November 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

Australia has cross-border agreements with New Zealand with regards to public health emergencies. The Australian Health Protection Committee (AHPC), the peak national health emergency forum, includes representatives from New Zealand; there is no evidence of gaps in enforcement. The peak committee has senior representatives from the Commonwealth, Australian states and territories, Defence, the Attorney-General's Department Emergency Management Australia and New Zealand. The

core membership of the AHPC is "responsible for high level cross jurisdictional collaboration in public health protection, planning, preparedness, response and recovery in relation to public health emergencies arising from man made emergencies (including pandemics) or natural disasters". [1] Furthermore, the Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN) states that "identification and response to potentially food borne outbreaks of national significance requires collaboration between OzFoodNet, CDNA, state and territory food regulators, state and territory communicable disease control authorities, Food Standards Australia New Zealand (FSANZ), and national food regulators including the Bi-national Food Safety Network (BFSN) and the Department of Agriculture and Water Resources". [1] The Bi-National Food Safety Network, responsible for coordination and information sharing/communication on food safety incidents, is made up of the Australian state and territory and New Zealand food enforcement agencies and FSANZ. [2]

[1] Department of Health. November 2011. "National Health Emergency Response Arrangements: November 2011". [http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-response-arrangement-nov11-l]. Accessed 28 November 2020.
[2] Australian Health Protection Principal Committee. September 2016. "The Emergency Response Plan for Communicable Disease Incidents of National Significance (CDPLAN)". [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-cdplan.htm]. Accessed 23 November 2020.

5.2.1b

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

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

Current Year Score: 2

Australia has a number of cross-border agreements with neighbouring countries with regards to animal health emergencies, and there is no evidence of gaps in enforcement. As outlined by the Department of Agriculture and Water Resources (DAWR), the Australian Government is a signatory to arrangements that will provide support from other participating countries during an emergency animal disease outbreak. The three arrangements signed on 23 May 2015 during the World Organisation for Animal Health's 84th General Session are: 1) International Animal Health Emergency Reserve (signed by Australia, Canada, Ireland, New Zealand, United Kingdom, United States of America). According to the DAWR, "this formal arrangement provides participating countries access to additional human resources in the event of an emergency animal disease outbreak." 2) Requesting additional foot-and-mouth disease vaccines (signed by Australia, Canada, Mexico, New Zealand, United States of America). According to the DAWR, "this arrangement supports access to additional foot and mouth disease (FMD) vaccines in the event of a FMD outbreak in participating countries. This arrangement initially includes the Australian, New Zealand and North American vaccine banks. However, it could be expanded in future to include other vaccine banks should there be interest." 3) Recognising zoning for foreign animal disease outbreaks (signed by Australia, Canada, New Zealand and the United States). According to the DAWR, "this arrangement is intended to manage biosecurity risks while minimising trade disruptions in the event of a foreign animal disease outbreak in a participating country... It will also support continuing trade from disease-affected zones where biosecurity risks can be effectively managed through import conditions, such as product treatments." [1].

[1] Australian Government. Department of Agriculture and Water Resources. August 2017. "International arrangements for emergency animal disease outbreaks". [http://www.agriculture.gov.au/pests-diseases-weeds/animal/international-arrangements-emergency-animal-disease-outbreaks]. Accessed 5 January 2019.

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: 4

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: 1

2021

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

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

5.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Australia has allocated national funds to improve capacity to address epidemic threats within the past three years. In 2020-21, the government has allocated money to blunt the economic and public health impacts of the COVID-19 pandemic, inlcuding a "COVID-19 Relief and Recovery Fund". However, this funding does not expand financing to address epidemic threats generally. [1,2,3] There is no other relevant evidence on the websites of the Department of Health, the Department of Agriculture and Water Resources, or the national budgets of the last three years. [4,5,6,7,8,9] Australia invested AU$300 million in the Indo-Pacific Centre for Health Security between 2017 and 2022, but the centre focuses on foreign assistance (health security in the rest of the Western Pacific and Southeast Asia), and not within Australia. [10,11]

[1] Government of Australia. "Budget 2020-21: COVID-19 Response". [https://budget.gov.au/2020-21/content/covid-19.htm]. Accessed 23 November 2020.
[2] Australian Government. Budget 2020-21. [https://www.budget.gov.au/]. Accessed 23 November 2020.
[3] Prime Minister of Australia. 11 March 2020. "$2.4 billion health plan to fight COVID-19". [https://www.pm.gov.au/media/24-billion-health-plan-fight-covid-19]. Accessed 23 November 2020.
[4] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.

[5] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 23 November 2020.
[6] Office of the Prime Minister. [https://www.pm.gov.au/]. Accessed 23 November 2020.
[7] Government of Australia. "Budget 2020-21". [https://budget.gov.au/index.htm]. Accessed 23 November 2020.
[8] Government of Australia. "Budget 2019-20: Overview". [https://budget.gov.au/2019-20/content/overview.htm#:~:text=For%20the%20first%20time%20in,%247.1%20billion%20in%202019%2D20.&text=The%20Government%20is%20also%20keeping,the%20tax%20burden%20on%20Australians.]. Accessed 23 November 2020.
[9] Government of Australia. "Budget 2018-19". [https://archive.budget.gov.au/2018-19/]. Accessed 23 November 2020.
[10] Marais, B.J.. "Improving emergency preparedness and response in the Asia-Pacific". BMJ Global Health 4[1]. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6352770/]. Accessed 2 May 2021.
[11] Australian Government. "Indo-Pacific Centre for Health Security: Who We Are". [https://indopacifichealthsecurity.dfat.gov.au/who-we-are]. Accessed 2 May 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 evidence that Australia has a publicly identified special emergency public financing mechanism and funds which can be accessed in the face of a public health emergency. Although there is evidence that Australia is well prepared for a public health emergency, there is no evidence on the Department of Health website, including the webpage regarding National Health Emergency Response Arrangements, or the Australian Budget 2020-21 that such a fund exists. [1,2,3] The 2020-21 budget does contain extensive measures to blunt the economic impact of the COVID-19 pandemic, inlcuding a "COVID-19 Relief and Recovery Fund", but does not establish a fund to deal with a public health emergency generally. [2,4] Australia is not an IDA borrowing country. [5,6]

[1] Department of Health. November 2011. "National Health Emergency Response Arrangements." [http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-response-arrangement-nov11-l#execution]. Accessed 23 November 2020.
[2] Australian Government. Budget 2020-21. [https://www.budget.gov.au/]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Government of Australia. "Budget 2020-21: COVID-19 Response". [https://budget.gov.au/2020-21/content/covid-19.htm]. Accessed 23 November 2020.
[5] International Development Association (IDA). Borrowing Countries. [http://ida.worldbank.org/about/borrowing-countries]. Accessed 23 November 2020.
[6] WB Pandemic Financing Facility. December 2017. [http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf]. Accessed 23 November 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 insufficient evidence that senior leaders in Australia have made a public commitment to support other countries to improve capacity to address epidemic threats in the past three years or a public commitment to improve Australia's domestic capacity to address epidemic threats in the past three years. There is, however, evidence of support for relief and response efforts. In May 2017, the Minister for Aged Care and Minister for Indigenous Health, Ken Wyatt, announced that "Australia will be providing $2 million to support international efforts to develop vaccines to fight emerging infectious diseases" at a G20 meeting of Health Ministers in Germany. [1] In October 2020 the Minister for Foreign Affairs and Minister for Women, Marise Payne; the Minister for International Development and the Pacific, Alex Hawke; and the Minsiter for Health, Greg Hunt issued a joint press releases announcing that Australia was committing more than $500 million over three years to support the safe and effective access to COVID-19 vaccines throughout the Pacific and Southeast Asia. [2] According to the Global Health Security Funding Tracking Dashboard, Australia committed US$195 million to other countries to improve capacity to address epidemic threats from 2014-2019 [3]. There is no evidence that senior leaders have made a public commitment to invest finances to improve Australia's domestic capacity. Senior leaders, such as the prime minister, have

made statements supporting the government's measures to blunt the economic and public health impacts of the COVID-19 pandemic, inlcuding a "COVID-19 Relief and Recovery Fund". However, this funding does not expand financing to address epidemic threats generally. [4,5,6] There is no other relevant evidence on the websites of the Department of Health, the Department of Foreign Affairs and Trade, or the World Health Organization regional office for the Western Pacific. [7,8,9]

[1] Australian Government. Department of Health. May 2017. "Australia provides financial support to global efforts to fight infectious diseases". [http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2017-wyatt041.htm]. Accessed 23 November 2020.
[2] Minister for Foreign Affairs and Minister for Women. 31 October 2020. "Australian support for COVID-19 vaccine access in the Pacific and Southeast Asia". [https://www.foreignminister.gov.au/minister/marise-payne/media-release/australian-support-covid-19-vaccine-access-pacific-and-southeast-asia]. Accessed 23 November 2020.
[3] Global Health Security Funding Tracking Dashboard. "Australia Total Funds Committed from 2014 to 2020". [https://tracking.ghscosting.org/#analysis/AU/d]. Accessed 23 November 2020.
[4] Government of Australia. "Budget 2020-21: COVID-19 Response". [https://budget.gov.au/2020-21/content/covid-19.htm]. Accessed 23 November 2020.
[5] Australian Government. Budget 2020-21. [https://www.budget.gov.au/]. Accessed 23 November 2020.
[6] Prime Minister of AUstralia. 11 March 2020. "$2.4 billion health plan to fight COVID-19". [https://www.pm.gov.au/media/24-billion-health-plan-fight-covid-19]. Accessed 23 November 2020.
[7] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[8] Department of Foriegn Affairs and Trade. [https://www.dfat.gov.au/]. Accessed 23 November 2020.
[9] World Health Organization Western Pacific". [https://www.who.int/westernpacific]. Accessed 23 November 2020.

5.5.4b

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

Current Year Score: 1

There is evidence Australia has, in the last three years, provided other countries with financing or technical support to improve capacity to address epidemic threats, but no evidence that Australia has requested financing or technical support from donors to improve the country's domestic capacity. According to the Global Health Security Funding Tracking Dashboard, Australia committed US$195 million to other countries to improve capacity to address epidemic threats from 2014-2020. [1] Recipient countries included Indonesia, Myanmar, Papua New Guinea, Vietnam, and Timor Leste. [2,3] Additionally, Australia's "Health Security Initiative for the Indo-Pacific region", launched in October 2017, commits $300 million over five years to "inform evidence-based planning, help prevent avoidable epidemics, strengthen early detection capacity, and support rapid, effective national and international outbreak responses". [3] Further, in October 2020 the government announced that Australia was committing more than $500 million over three years to support the safe and effective access to COVID-19 vaccines throughout the Pacific and Southeast Asia. [4] There is no other relevant evidence on the websites of the Department of Health, the Department of Foreign Affairs and Trade, or the World Health Organization regional office for the Western Pacific. [5,6,7]

[1] Global Health Security Funding Tracking Dashboard. "Australia Total Funds Committed from 2014 to 2020". [https://tracking.ghscosting.org/#analysis/AU/d]. Accessed 23 November 2020.
[2] Global Health Security Funding Tracking Dashboard. "Funder Profile: Australia".

[https://tracking.ghscosting.org/details/16/funder]. Accessed 23 November 2020.
[3] Department of Foreign Affairs and Trade. 'Where we give aid'. [https://www.dfat.gov.au/aid/topics/investment-priorities/education-health/health/Pages/health-security-initiative-indo-pacific-region]. Accessed 23 November 2020.
[4] Minister for Foreign Affairs and Minister for Women. 31 October 2020. "Australian support for COVID-19 vaccine access in the Pacific and Southeast Asia". [https://www.foreignminister.gov.au/minister/marise-payne/media-release/australian-support-covid-19-vaccine-access-pacific-and-southeast-asia]. Accessed 23 November 2020.
[5] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[6] Department of Foriegn Affairs and Trade. [https://www.dfat.gov.au/]. Accessed 23 November 2020.
[7] World Health Organization Western Pacific". [https://www.who.int/westernpacific]. Accessed 23 November 2020.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 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 evidence of a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza. Australia is a member of the Global Alliance for Genomics and Health (GA4GH) and the Global Genomic Medicine Collaboration (G2MC), as outlined by the National Health and Medical Research Council (NHMRC). [1] The NHMRC states that "membership on the GA4GH provides Australia with an opportunity for international collaboration and information sharing of genomic and clinical data to help unlock potential advancements in medicine and science" [1]. Furthermore, the Australian Institute of Health and Welfare, which develops and maintains national data to support monitoring and reporting on the health and welfare of Australians, states that it "has a role in information sharing with a number of international organisations, such as the World Health Organization (WHO) and the Organisation for Economic Cooperation and Development (OECD)". [2] However, while this evidence indicates that Australia engages in relevant data sharing, it falls short of being a plan or a policy for such sharing. There is no additional relevant information shared via the public websites of the Department of Health, the Department of Agriculture and Water Resources, or the Australian Research

Council. [3,4, 5] Australia's Joint External Evaluation (JEE), published in 2018, does not contain any relevant information. [6] There is no evidence of relevant media reports or academic studies.

[1] Australian Government. Department of Health. The National Health and Medical Research Council. "International Engagement". [https://nhmrc.gov.au/research-policy/international-engagement]. Accessed 23 November 2020.
[2] Australian Government. The Australian Institute of Health and Welfare. "International Collaboration". [https://www.aihw.gov.au/our-services/international-collaboration]. Accessed 23 November 2020.
[3] Department of Health. [http://www.health.gov.au/]. Accessed 23 November 2020.
[4] Department of Agriculture and Water Resources. [http://www.agriculture.gov.au/]. Accessed 23 November 2020.
[5] Australian Research Council. [https://www.arc.gov.au/]. Accessed 23 November 2020.
[6] World Health Organization (WHO). 2018. "Joint External Evaluation of IHR Core Capacities of Australia". [https://apps.who.int/iris/bitstream/handle/10665/272362/WHO-WHE-CPI-REP-2018.8-eng.pdf?sequence=1]. Accessed 23 November 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 evidence that Australia failed to share samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. There was no evidence of this on the World Health Organization (WHO) or The Australian, Australia's largest media outlet. [1, 2] Australia has demonstrated a commitment to the PIP framework. It is home to one of the six WHO Collaborating Centres (Australia, Japan, UK, China and USx2), and one of the four WHO Essential Regulatory Laboratories. [3, 4] In July 2016, Australia participated in PIP framework review. [5]

[1] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 23 November 2020.
[2] The Australian. [https://www.theaustralian.com.au/]. Accessed 23 November 2020.
[3] The World Health Organisation (WHO). 2011. "Pandemic influenza preparedness Framework". [http://apps.who.int/iris/bitstream/handle/10665/44796/9789241503082_eng.pdf?sequence=1]. Accessed 23 November 2020.
[4] Global Health Watch. December 2011. "Pandemic influenza preparedness: sharing of influenza viruses and access to vaccines and other benefits". [https://www.ghwatch.org/who-watch/topics/pip]. Accessed 23 November 2020.
[5] World Health Organisation (WHO). July 2016. "Implementation of the Pandemic Influenza Preparedness Framework Written Submission to the Review Group AUSTRALIA". [https://www.who.int/influenza/pip/2016-review/Australia_July2016.pdf]. Accessed 23 November 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 evidence to suggest that Australia has not shared pandemic pathogen samples during an outbreak in the past two years, including in the context of the COVID-19 pandemic. Aside from the COVID-19 pandemic, the World Health Organization shows no outbreaks in Australia during the last two years . [1,2] Local and international media do not contain reports of non-sharing in Australia. [3]

[1] World Health Organization (WHO). Country Profiles. "Australia". [https://www.who.int/countries/aus/]. Accessed 23 November 2020.
[2] World Health Organization. "WHO Coronavirus Disease (COVID-19) Dashboard". [https://covid19.who.int/?gclid=CjwKCAjwnef6BRAgEiwAgv8mQfRf_Q66Hc1ltd5fDKvmqtlDEnhWFpg5ZhstlfXNpYojZX5qBoqQTRoC3zkQAvD_BwE]. Accessed 23 November 2020.
[3] The Australian. [https://www.theaustralian.com.au/]. Accessed 23 November 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: 4

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 77

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 3

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: 4

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 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: 3

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 99.9

2008-2018

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.9

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: 0.4

2014

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 0

The share of employment in Australia's informal sector is low, well below 25%. Neither the World Bank and nor the International Labour Organization report data on the size of informal employment in Australia. [1,2,3] A 2013 report from the Australia Bureau of Statistics suggests that the "unobserved economy" accounts for just 2.1% of GDP in Australia, though other estimates have ranged up to 15%. [4,5,6] Regular releases from the Australian Bureau of Statistics do not appear to include information about the percentage of employment in the informal sector. [7]

[1] ILOSTAT Data Explorer. 2020. "Informal employment and informal sector as a percent of employment by sex". [https://www.ilo.org/shinyapps/bulkexplorer51/?lang=en&segment=indicator&id=IFL_XIEM_SEX_ECO_IFL_RT_A]. Accessed 23 November 2020.
[2] World Bank. 2020. "Informal Employment (% of Total Non-agricultural Employment) - Australia". [https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=AU]. Accessed 23 November 2020.
[3] International Labour Organization. 2020. "Statistics on the Informal Economy". [https://ilostat.ilo.org/topics/informality/]. Accessed 23 November 2020.
[4] Australia Bureau of Statistics. 12 September 2013. "Information Paper: The Non-Observed Economy and Australia's GDP, 2012". [https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/5204.0.55.008Main%20Features102012?opendocument&tabname=Summary&prodno=5204.0.55.008&issue=2012&num=&view=]. Accessed 23 November 2020.
[5] Nick Evershed. 19 December 2016. "Cash in Hand: How Big Is Australia's Black Economy?". The Guardian. [https://www.theguardian.com/australia-news/datablog/2016/dec/20/cash-in-hand-how-big-is-australias-black-economy]. Accessed 23 November 2020.
[6] The Conversation. "Black Market Jobs Cost Australia Billions and Youth Are at the Coalface". [https://theconversation.com/black-market-jobs-cost-australia-billions-and-youth-are-at-the-coalface-61679]. Accessed 23 November 2020.
[7] Australian Bureau of Statistics. October 2020. "Labour Force, Australia." [https://www.abs.gov.au/statistics/labour/employment-and-unemployment/labour-force-australia/latest-release#employment]. Acccessed 23 November 2020.

6.2.3c

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

Current Year Score: 3

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions
Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 2

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.34

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 4

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: 3

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 86.12

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: 0.5

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: 2

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: 82.75

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: 278.5

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 15.92

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 16.2

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 29

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: 99

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: 3456.63

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: 2

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: 2

2018

Wellcome Trust Global Monitor 2018