

South Africa

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

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

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

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

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

Current Year Score: 2

There is evidence that South Africa has a national AMR plan for the surveillance, detection and reporting of priority pathogens. The Department of Health has the 'Antimicrobial Resistance National Strategy Framework: A One Health approach 2018 - 2024'. This plan outlines key strategic objectives, of which no. 3 is to "Optimise surveillance and early detection of AMR and antimicrobial use to enable reporting of local, regional, and national resistance patterns to optimise empiric and targeted antibiotic choice." [1]

[1] Department of Health. 'Antimicrobial Resistance National Strategy Framework: A one health approach 2018-2024'. [<http://www.health.gov.za/index.php/antimicrobial-resistance?download=3308:amr-national-action-plan-2018-2024>]. Accessed 12 September 2020.

1.1.1b

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

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

Current Year Score: 2

There is publicly available evidence of a national laboratory/laboratory system which tests for all 7+1 priority AMR pathogens in South Africa. The National Health Laboratory Service (NHLS) has designated sentinel sites, which test for all priority AMR pathogens, namely *E. coli*, *K. pneumoniae*, *S. aureus*, *S. pneumoniae*, *Salmonella* spp., *Shigella* spp, *N. gonorrhoeae* and *Mycobacterium tuberculosis*. [1,2] The NHLS has laboratories in all nine provinces and has the responsibility of supporting the national and provincial health departments in healthcare delivery. It also provides laboratory and related public health services to over 80% of the population through a national network of laboratories. Its specialised institutes include the National Institute for Communicable Diseases (NICD), the National Institute for Occupational Health (NIOH), and the South African Vaccine Producers (SAVP), as its subsidiaries.[3]

[1] National Health Laboratory Service. 2020. "Type of tests." [<https://www.nhls.ac.za/diagnostic-services/type-of-tests/>]. Accessed 29 July 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 29 July 2020.

[3] National Health Laboratory Service. 2020. "About us." [http://www.nhls.ac.za/?page=about_us&id=16]. Accessed 29 July

2020.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the government of South Africa conducts environmental detection or surveillance activities for antimicrobial residues or AMR organisms. The Joint External Evaluation for South Africa, conducted in November/December 2017, details an existing surveillance system for AMR pathogens, but does not include mention of environmental surveillance. [1] There is national legislation governing water quality, existing in paragraph 137, of Part 1 in Chapter 14 of the National Water Act of 1998. This stipulates that the Ministry of Water and Sanitation is responsible for the establishment of a monitoring system of surface water, with a focus on microbial water quality. This legislation does not, however, mention specific testing for AMR organisms. [2] Monitoring programmes run by Department of Water and Sanitation (DWS) include the National Microbial Monitoring Programme (NMMP), which assesses trends of faecal pollution and associated health risks, but again, does not specifically mention environmental detection or surveillance activities [3] The Department of Health, in the 2015 "Implementation Plan for the Antimicrobial Resistance Strategy Framework in South Africa: 2014 - 2019" document, states as its mission "to coordinate and harness the collective efforts of stakeholders in human, animal, and environmental health to advance evidence-based strategies for the prevention and containment of antibiotic resistance in the "One Health" context." One of the focus areas is "Ensuring the standardised collection and reporting of AMR organisms information to enable health establishment, district, provincial and national surveillance." [4] The Department of Health's National Action Plan objectives include "monitoring water quality by performing microbiological, physical and chemical tests for fitness for human consumption through a sampling process" and "waterborne and sanitation related disease surveillance". [5] The Department of Environmental Affairs developed the Effective Environmental Improvement Intervention (2E2I) Draft System Description, in September 2016, but there is no mention of environmental testing for antimicrobial residues or AMR organisms. [6]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 29 July 2020.

[2] Government of South Africa. 1998. "National water act, 1998." [<http://www.gov.za/documents/national-water-act>]. Accessed 29 July 2020.

[3] South African government (Department of Water and Sanitation). October 2018. 'National water and sanitation master plan'. [https://www.gov.za/sites/default/files/gcis_document/201911/national-water-and-sanitation-master-plan.pdf]. Accessed 29 July 2020.

[4] Department of Health. 2015. "Implementation Plan for the Antimicrobial Resistance Strategy Framework in South Africa: 2014 - 2019," [<http://www.health.gov.za/index.php/antimicrobial-resistance?download=1175:implementation-plan-for-the-antimicrobial-resistance-strategy-framework-in-south-africa-2014-2019>]. Accessed 29 July 2020.

[5] Department of Health. 2020. "Antimicrobial Resistance National Strategy Framework: A One Health approach 2018 - 2024" (the National Action Plan). [<https://www.who.int/publications/m/item/south-africa-south-african-antimicrobial-resistance-national-strategy-framework-a-one-health-approach>]. Accessed 19 March 2021.

[6] Department of Environmental Affairs. September 2016. 'Effective Environmental Improvement Intervention (2E2I) Draft System Description'. [https://www.environment.gov.za/sites/default/files/docs/2E2I_system_description.pdf]. Accessed 30 July 2020

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

There is national legislation in place in South Africa requiring prescriptions for antibiotic use for humans. The Medicines and Related Substances Act is the national classification system that controls how medicines are made available to the public. [1] Antibiotics are classified under Schedule 4, meaning that they require a prescription from a medical practitioner. [2] The Joint External Evaluation (JEE) for South Africa, completed in November/December 2016, states that "all antibiotic use in humans requires a prescription from a registered medical professional under the Medicines and Related Substances Act (101 of 1955 as amended) and the Nursing Act (33 of 2005)." [3] In a 2019 article by the American Journal of Tropical Medicine and Hygiene it states that "Our findings indicate that regulation around the sale of antibiotics is enforced" and "the purchasing of antibiotics without prescription was not seen as feasible", so it can be concluded that enforcement of legislation is effective. [4]

[1] National Department of Health. 2015. "Antimicrobial resistance background document."

[<http://www.health.gov.za/index.php/component/phocadownload/category/199-antimicrobial-resistance>]. Accessed 30 July 2020.

[2] International Pharmacy Association South Africa (IPASA), 1 February 2016, 'Know your Medicine Schedules'.

[<http://ipasa.co.za/wp-content/uploads/2016/03/Know-your-Medicine-Schedules.pdf>]. Accessed 30 July 2020.

[3] World Health Organisation. 27 November-1 December 2017. "Joint External Evaluation Of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 30 July 2020.

[4] The American Journal of Tropical Medicine and Hygiene. June 2019. 'Rural South African Community Perceptions of Antibiotic Access and Use: Qualitative Evidence from a Health and Demographic Surveillance System Site'.

[<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6553901/>] Accessed 30 July 2020.

1.1.2b

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

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

Current Year Score: 0

There is insufficient legislation that requires the prescription of antibiotics to animals, and the existing legislations do not cover all cases of antibiotics. The latest legislation in this regard is covered in the Antimicrobial Resistance National Strategy Framework: A One Health approach 2018-2024. The document states that "antimicrobials intended for use in animals and registered under Act 101 (Medicines and Related Substances, 1965) can only be administered or prescribed by a veterinarian". [1,2] The Act controls how medicines are made available to doctors and veterinarians. Antibiotics generally require a prescription from a medical practitioner, [2, 3] but the Fertilisers, Farm, Feeds, Agricultural Remedies and Stock Remedies Act of 1947 does allow the sale anti-microbials without a prescription as a feed additive. The Department of Health (DOH) does note this practice as being a contributing factor to AMR and is reviewing the relevant regulations. [2,4] The Joint External Evaluation for South Africa, conducted in November/December 2017, states that South Africa is lacking in this regard, and a March 2020 article from the Journal of Global Antimicrobial Resistance states 'It is estimated that antibiotic utilisation will increase 67% by the year 2030, with almost twice this increase in countries such as China, Brazil, India, South Africa and Russia.' Although South Africa has developed and implemented an Antimicrobial Resistance National Strategy

Framework for 2018-2024, with one of the strategic objectives being to promote the appropriate use of antimicrobials in human and animal health, there is no evidence that there have been significant progress on strategic aims, or new regulations issued. [1,5,6]

[1] Department of Health. 2018. "The Antimicrobial Resistance National Strategy Framework: A One Health approach 2018-2024". [<https://www.knowledgehub.org.za/elibrary/south-african-antimicrobial-resistance-national-strategy-framework-one-health-approach>]. Accessed 30 July 2020.

[2] Department of Health. 2015. "Antimicrobial resistance background document." [<http://www.health.gov.za/index.php/component/phocadownload/category/199-antimicrobial-resistance>]. Accessed 30 July 2020.

[3] Government of South Africa. 2015. "Medicines and Related Substances Act: Schedules." [<http://www.gov.za/documents/medicines-and-related-substances-act-schedules-23-mar-2015-1001>]. Accessed 30 July 2020.

[4] Government of South Africa. 1948. "Fertilisers, Farm, Feeds, Agricultural Remedies and Stock Remedies Act of 1947". [https://www.environment.gov.za/sites/default/files/docs/remedies_stockremedies_act36_of1947.pdf]. Accessed 30 July 2020.

[5] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 30 July 2020.

[6] Journal of Global Antimicrobial Resistance. March 2020. 'Antibiotic use in food animals worldwide, with a focus on Africa: Pluses and minuses'. [<https://www.sciencedirect.com/science/article/pii/S2213716519301985>]. Accessed 30 July 2020.

1.2 ZONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

South Africa does have a national law, and protocols, on zoonotic diseases. In the Animal Diseases Act of 1984, although zoonotic disease is never specifically referred to, animal disease is defined as when "normal functions impaired or disturbed by any protozoon, bacterium, virus, fungus, parasite, other organism or agent". This includes all zoonotic disease, and comprehensive 'Control measures' are referred to in Section 9 of the Act. [1] The Joint External Evaluation for South Africa, conducted in November/December 2017, finds that "all zoonotic diseases of relevance have been prioritized and legislated as notifiable to both human and animal health authorities" and that there exists a standard operating procedure used to detect and respond to priority zoonotic diseases. [2] The Department of Health has developed the Antimicrobial Resistance National Strategy Framework: A One Health approach 2018-2024, which states "Controlled and Notifiable Diseases including zoonotic disease which impact human health are already reported to Directorate of Animal Health within Department of Agriculture, Forestry and Fisheries (DAFF)." [3] The Department of Agriculture, Land Reform and Rural Development has protocols in place to control the spread of certain animal diseases. [4] The Department of Health has a national influenza policy and strategic plan, [5] and the National Institute for Communicable Diseases has national anthrax guidelines. [6]

[1] Government of South Africa. 1984. "Animal diseases act of 1984." [<https://www.gov.za/documents/animal-diseases-act-12-mar-2015-1128>]. Accessed 25 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 31 July 2020.

[3] Department of Health. 2018. "The Antimicrobial Resistance National Strategy Framework: A One Health approach 2018-2024". [<https://www.knowledgehub.org.za/elibrary/south-african-antimicrobial-resistance-national-strategy-framework-one-health-approach>]. Accessed 30 July 2020.

[4] Department of Agriculture, Land Reform and Rural Development. 2020. "Animal health/Disease control." [<http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/disease-control>]. Accessed 31 July 2020.

[5] Department of Health. 2018. "National pandemic preparedness plan". [<http://www.health.gov.za/index.php/component/phocadownload/category/339-national-influenza-policy-and-strategy-plan?download=1900:national-influenza-policy-and-strategy-plan>]. Accessed 31 July 2020.

[6] National Institute for Communicable Diseases. 2016. "National anthrax guidelines". [http://www.nicd.ac.za/assets/files/Anthrax%20FAQ_20160129_FINAL.pdf]. Accessed 31 July 2020.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has plans or equivalent strategy document(s) which include measures for risk identification and reduction for zoonotic disease spill-over events from animals to humans. A 2020 article on the Centers for Disease Control and Prevention (CDC) website lists 6 priority zoonotic diseases that are currently being addressed through the Global Disease Detection (GDD) One Health funded programs in South Africa. There is, however, no mention of national planning or strategy for risk identification and reduction for zoonotic disease spill-over events [1] No further information could be found on the Joint External Evaluation report of 2017, the websites of the ministries of Health or Agriculture, or the National Institute for Communicable Diseases. [2,3,4,5]

[1] Centers for Disease Control and Prevention (CDC), One Health Program. 2020. 'South Africa Regional Global Disease Detection (GDD) Center'. [https://www.cdc.gov/globalhealth/countries/southafrica/what/one_health.htm]. Accessed 31 July 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 31 July 2020.

[3] Department of Health. 2018. "The Antimicrobial Resistance National Strategy Framework: A One Health approach 2018-2024". [<https://www.knowledgehub.org.za/elibrary/south-african-antimicrobial-resistance-national-strategy-framework-one-health-approach>]. Accessed 30 July 2020.

[4] Department of Agriculture, Land Reform and Rural Development. 2020. "Animal health/Disease control." [<https://www.dalrrd.gov.za/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/disease-control>]. Accessed 25 August 2020.

[5] National Institute for Communicable Diseases. 2020. [<https://www.nicd.ac.za/about-us/our-objectives/>]. Accessed 25 August 2020.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that South Africa has national plans, guidelines, or laws that account for the surveillance and control of multiple zoonotic pathogens of public health concern. The Animal Diseases Act of 1984 sets the requirement that owners of livestock must monitor their animals and report on disease surveillance to the central government. Specifically, section 11 of the Act mandates that when animals "have become or can reasonably be suspected of having become infected with any controlled animal disease, [the owner will] immediately report such incidence in the prescribed manner to the director [of the Directorate of Animal Health]." [1] The Joint External Evaluation for South Africa, conducted in November/December 2017, finds that "all zoonotic diseases of relevance have been prioritized and legislated as notifiable to both human and animal health authorities" and that there exists a standard operating procedure used to detect and respond to priority zoonotic diseases. [2] There are also protocols in place that account for the surveillance and control of animal diseases. The JEE also notes that "response plans exist including National Guidelines for Epidemic Preparedness and Response as well as disease-specific response plans in both (human and animal health) sectors. Furthermore, there is a national influenza policy and a strategic plan and anthrax guidelines. [3,4] The Department of Health issued a document in 2015; 'National guidelines for recognition and management of Viral Haemorrhagic Fevers', which includes surveillance and control measures for Lassa fever, Rift Valley Fever, Chikungunya and Ebola among others. [5] There is no publicly accessible information that the Department of Agriculture, Land Reform and Rural Development (DALRRD) has a national plan covering zoonotic diseases. The DALRRD does publish protocols aimed at restricting contagion of animal diseases. [6]

[1] Government of South Africa. 1984. "Animal diseases act of 1984."

[<http://www.nda.agric.za/doaDev/sideMenu/APIS/doc/ANIMAL%20DISEASES%20ACT.htm>]. Accessed 1 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 1 August 2020.

[3] Department of Health. 2018. "National influenza policy and strategic plan".

[<http://www.health.gov.za/index.php/component/phocadownload/category/339-national-influenza-policy-and-strategy-plan?download=1900:national-influenza-policy-and-strategy-plan>]. 1 August 2020.

[4] National Institute for Communicable Diseases. 2020. 'Guidelines on management and control of human anthrax in South Africa'. [<https://www.nicd.ac.za/wp-content/uploads/2019/05/Anthrax-Draft-Guideline-26-October-2018-NICD-WR-7-Nov-2018.pdf>]. Accessed 1 August 2020.

[5] National guidelines for recognition and management of Viral Haemorrhagic Fevers. 2015. [<https://www.nicd.ac.za/wp-content/uploads/2017/08/vhfguidelinefinal7dec2015-1.pdf>]. 1 August 2020.

[6] Department of Agriculture, Land Reform and Rural Development. 2020. "Animal health/Disease control."

[<http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/disease-control>]. Accessed 1 August 2020.

1.2.1d

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

Yes = 1, No = 0

Current Year Score: 0

There is a dedicated departmental unit for zoonotic diseases in South Africa, but there is no evidence that this unit functions across ministries. The Centre for Emerging Zoonotic and Parasitic Diseases (CEZPD) operates within the National Institute for Communicable Diseases (NICD). The NICD falls under the National Health Laboratory Service. [1] CEZPD aims to be the national and international centre of excellence for emerging and re-emerging zoonotic diseases. The official aim of the CEZPD is to function as a resource for knowledge and expertise to the South African government and assist in the planning and implementation of relevant policies and programs, as well as harness innovation in science and technology to support the

surveillance, detection and the outbreak response systems. [2]

[1] National Health Laboratory Service. 2020. 'Institutes & Subsidiaries'. [<https://www.nhls.ac.za/institutes-subsidiaries/>]. Accessed 1 August 2020.

[2] National Institute for Communicable Diseases. 2020. "Centre for Emerging Zoonotic and Parasitic Diseases." [<https://www.nicd.ac.za/centres/centre-for-emerging-zoonotic-and-parasitic-diseases/>]. Accessed 1 August 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a national law in place that requires livestock owners to conduct disease surveillance of animals, as well as a manual to assist with implementation of the reporting system. The Animal Diseases Act of 1984, in Section 11, sets the requirement that owners of livestock must monitor their animals and report on disease surveillance to the director (of the Directorate of Animal Health of the department, who shall be a veterinarian). [1] The Department of Agriculture, Forestry and Fisheries manual, titled the "Animal disease reporting manual", stipulates that "All outbreaks or suspected outbreaks of diseases that might warrant an emergency response (listed in the manual) must be reported on the correct form (included at the end of this document) within 24 hours of detection. Animal owners and animal health technicians must notify the state vet of the area immediately." Provinces are requested, but not legally required, to report all OIE diseases not listed in the 1984 Act. [2]

[1] Government of South Africa. 1984. "Animal diseases act of 1984."

[<http://www.nda.agric.za/doaDev/sideMenu/APIS/doc/ANIMAL%20DISEASES%20ACT.htm>]. Accessed 1 August 2020.

[2] Department of Agriculture, Land Reform and Rural Development. 2016. "Animal disease reporting manual."

[<http://www.nda.agric.za/vetweb/Epidemiology/Reporting%20forms/Disease%20reporting%20%20manual%205Apr2016.pdf>]. Accessed 1 August 2020.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There are laws in place in South Africa that safeguard the confidentiality of information generated through animal disease surveillance activities. The Animal Diseases Act of 1984 includes secrecy requirements in Section 25. No information relating to the business or affairs of a person acquired in the performance of duties under the Act can be disclosed, nor can access be given to any records or registers, except in certain legal proceedings or with the minister's written consent. The names of animal owners are not required for national reporting, though may be required in a state vet area or provincial level. [1]

[1] Government of South Africa. 1984. "Animal diseases act of 1984."

[<http://www.nda.agric.za/doaDev/sideMenu/APIS/doc/ANIMAL%20DISEASES%20ACT.htm>]. Accessed 1 August 2021.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that South Africa conducts surveillance of zoonotic disease in wildlife. The Global Disease Detection programme run by a US organisation, Centers for Disease Control and Prevention (CDC), conducts wildlife surveillance programmes in wild buffalo for foot and mouth disease (FMD), Rift Valley Fever, bovine tuberculosis and other diseases, in partnership with the University of Pretoria's Zoonoses Research Unit. The partnership also tests for other diseases in wildlife including anthrax and brucellosis. [1] The Centre for Emerging Zoonotic and Parasitic Diseases (CEZPD) within the National Institute for Communicable Diseases (NICD) conducts vector-based research projects, including surveillance for malaria. [2] The Joint External Evaluation for South Africa, conducted in November/December 2017, states that "animal health staff at local level also cover zoonoses detection in wildlife," but does not specify which diseases and on which animals surveillance is conducted. [3] The veterinary services at South Africa National Parks (SANParks), a public entity under the jurisdiction of the Department of Environmental Affairs, carry out disease monitoring among wild animals in national parks, although there is no specific mention of wildlife-human zoonoses. [4] The Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) performs disease surveillance of seabirds, submitting annual reports to the Department of Environmental Affairs (Oceans and Coasts), CapeNature (a public body responsible for biodiversity conservation in the Western Cape) and SANParks, and reporting diseases to state veterinarians. [5]

[1] Centers for Disease Control and Prevention (CDC). 2015. "Global disease detection stories: Tracking and taming zoonotic diseases in South Africa". [https://www.cdc.gov/globalhealth/healthprotection/gdd/stories/south_africa_zoonotic_diseases-.html]. Accessed 1 August 2020.

[2] National Institute for Communicable Diseases. 2017 "Centre for Emerging Zoonotic and Parasitic Diseases." [<http://www.nicd.ac.za/index.php/centres/centre-for-emerging-zoonotic-and-parasitic-diseases/>]. Accessed 1 August 2020.

[3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 1 August 2020.

[4] South Africa National Parks. 2018. "Veterinary services." [https://www.sanparks.org/conservation/veterinary/about/disease_man.php]. Accessed 1 August 2020.

[5] Southern African Foundation for the Conservation of Coastal Birds (SANCCOB). 2015. "Disease surveillance in southern African seabird colonies." [<https://sanccob.co.za/wp-content/uploads/2017/01/Seabird-disease-surveillance-guideline-vs1.pdf>]. Accessed 1 August 2020.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 4.81

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 2.8

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of a national plan or other document providing mechanisms for public-private cooperation in controlling or responding to zoonoses in South Africa. According to the South African Veterinary Strategy, (2016-2026), there is a lack of comprehensive national programmes across human and animal health for the prevention, control and eradication of endemic diseases, including zoonotic diseases. The strategy does not include mechanisms for working with the private sector, and the strategy states 'The industry proposed creation of a disease control agency (private-public-partnership) which will cater for the development of VS with regard to disease management.' [1] The report of the WHO Joint External Evaluation for South Africa, completed in November/December 2017, makes no mention of any mechanisms for working with the private sector in controlling or responding to zoonoses. [2] The South African government is continuing to work with the US-based Centers for Disease Control and Prevention (CDC). Through this, the One Health programme was created in South Africa. This programme was established to enhance South Africa's capacity to detect and respond to zoonotic disease threats that may result in significant morbidity and mortality in humans. The programme acknowledges that a key challenge has been linking research and surveillance activities across public, private and university entities in human and animal health. [3] No further information could be found in the Animal Diseases Act of 1984. [4]

[1] Department of Agriculture, Land Reform and Rural Development. 2016 (rev 1). "South African Veterinary Strategy (2016-2026)". [<https://www.nda.agric.za/docs/media/Vet%20strategy%20final%20signed.pdf>]. Accessed 1 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 1 August 2020.

[3] Centers for Disease Control and Prevention. 2015. "One health initiative."

[https://www.cdc.gov/globalhealth/countries/southafrica/what/one_health.htm]. Accessed 1 August 2020.

[4] Government of South Africa. 1984. "Animal diseases act of 1984." [<https://www.gov.za/documents/animal-diseases-act-12-mar-2015-1128>]. Accessed 25 August 2020.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is not sufficient evidence that South Africa has a record, updated within the past 5 years, of facilities in which dangerous substances are stored or processed. The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, finds that there is no single database of public and private laboratories handling dangerous biological materials. It states that "there is currently no consolidated list of pathogens with risk classification. Separate lists are available in accordance with the different pieces of legislation, which are administrated by different government departments. The lists are largely based on international risk group classifications, but without the risk assessment taking into consideration the South African context. In association with these different policies, different registries of laboratories and the microorganisms that they store and handle are kept by the different government departments (i.e. the Department of Health (DOH) maintains a registry of microbiological laboratories that deal with human pathogens, as does the Departments of Agriculture, Land Reform and Rural Development (DALRRD) for veterinary agents, and the Department of Trade and Industry manages laboratories that deal with listed agents and technologies - so overlap between these registries is commonplace)." [1] Some government agencies keep records of facilities and substances in their own capacity. The ability to monitor dangerous substances is fragmented, with responsibilities scattered across DALRRD, DOH, the Department of Trade and Industry (DTI) and the Department of Environmental Affairs (DEA). [2,3] Regulations under the National Health Act of 2003 require entities handling human pathogens to apply for licenses. The DOH keeps these records but regular updates are not required except in the case of acquisitions or imports. [4] The DALRRD requires laboratories to register substances on their lists of pathogens and toxins. [5] The DTI requires registration of entities in charge of any activity involving its own list of controlled biological materials, and changes to registration information should be submitted within 14 days. [6] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention (BWC), access to the report is restricted, and the text is not publicly available.[7] The Verification Research, Training & Information Centre (Vertic) states that South Africa is party to the BWC, whose signatories 'should adopt biosafety and biosecurity measures, such as measures to account for and secure production, use, storage and transport of particularly dangerous pathogens or activities involving humans, plants or animals where infection may pose a risk; related licensing procedures; safety and security measures for laboratories; containment measures; and genetic engineering regulations.' There is no specific legislation on pathogens on the legislation database for South African. [8]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 2

August 2020.

- [2] Parker, Iqbal. 23 Jul 2015. 'Explainer: biosafety and biosecurity in South Africa'. The Conversation. [http://theconversation.com/explainer-biosafety-and-biosecurity-in-south-africa-44995]. Accessed 2 August 2020.
- [3] Academy of Science of South Africa (ASSAf). 2015. "The state of biosafety and biosecurity in South Africa." [http://research.assaf.org.za/handle/20.500.11911/58]. Accessed 2 August 2020.
- [4] South African Government. 2 March 2012. "National health act 2003: Regulations relating to the registration of microbiological laboratories and the acquisition, importation, handling, maintenance and supply of human pathogens." [https://www.gov.za/sites/default/files/gcis_document/201409/35099rg9699gon178.pdf]. Accessed 2 August 2020.
- [5] Department of Agriculture, Land Reform and Rural Development (DALRRD). 2015. "Procedures manual DAFF approval of laboratories," Aug 2015. [http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/Epidemiology]. Accessed 2 August 2020.
- [6] Department of Trade and Industry. 2010. "Regulations relating to the registration of persons in control of any activity with regard to controlled goods or who have controlled goods in their possession or custody or under their control," Notice no. R. 16, 2010. [https://www.gov.za/sites/default/files/gcis_document/201409/32891160.pdf]. Accessed 2 August 2020.
- [7] United Nations. 2018. "South African Confidence Building Measures". [https://bwc-ecbm.unog.ch/state/south-africa]. Accessed 2 August 2020.
- [8] The Verification Research, Training & Information Centre (Vertic). 2020. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/]. Accessed 26 August 2020.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has 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. A 2015 review by the Academy of Science of South Africa found 29 laws and regulations related to biosafety and biosecurity. The report, however, does not give separate analysis of biosecurity and biosafety legislation or mention laws addressing security of facilities with dangerous pathogens. [1] While there are several laws relating to the handling of dangerous biological substances, these are predominantly focused on biosafety, rather than biosecurity. [2,3,4,5] Similarly, although the Joint External Evaluation for South Africa, conducted in November/December 2017, states that there is a comprehensive framework for biosafety and biosecurity, it does not make mention of any legislation governing physical security of sensitive locations. [1,6] There is no publicly available evidence on the websites of either the Department of Health, the Department of Agriculture, Land Reform and Rural Development or the Ministry of Defence, that the country has in place any legislation in this regard. [7,8,9] The National Laboratory Association, through the National Institute for Communicable Diseases (NICD), states in its Strategic Plan for fiscal years 2018-2020 that it has implemented numerous internal controls to mitigate risk. It has an IBBC (Institutes Biosafety and Biosecurity Committee) with an action plan including appropriate training, for risk management relating to Biosafety and Biosecurity relating to pathogenic organisms. [10] The Verification Research, Training & Information Centre (Vertic) states that South Africa is party to The Biological Weapons Convention (BWC), whose signatories should 'should adopt biosafety and biosecurity measures, such as measures to account for and secure production, use, storage and transport of particularly dangerous pathogens or activities involving humans, plants or animals where infection may pose a risk; related licensing procedures; safety and security measures for laboratories; containment measures; and genetic engineering regulations.' There is, however, no specific legislation on this database related to biosecurity which address the

requirements in this indicator. [11] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the BWC, access to the report is restricted, and the text is not publicly available.[12]

- [1] Academy of Science of South Africa (ASSAf). 2015. "The state of biosafety and biosecurity in South Africa." [http://www.assaf.co.za/wp-content/uploads/2011/10/Final-WEB-K-12423-ASSAF-Biosafety-and-Biosecurity-Report_DevV11LR.pdf]. Accessed 2 August 2020.
- [2] Government of South Africa. 2013. "National Health Act No. 61 of 2003." [https://www.gov.za/documents/national-health-act]. Accessed 2 August 2020.
- [3] Department of Agriculture, Land Reform and Rural Development (DALRRD). August 2015. "Procedure manual: DAFF approval of laboratories." [http://www.nda.agric.za/vetweb/epidemiology/Laboratories/Procedure%20Manual%20DAFF%20Approval%20of%20Laboratories%202015.pdf]. Accessed 2 August 2020.
- [4] Department of Agriculture, Forestry and Fisheries, Directorate Animal Health. 2018. "Checklist: Biosafety level (BSL)." [http://www.nda.agric.za/vetweb/epidemiology/Laboratories/DAFF%20012%20-F08%20ED%2009%20Checklist%20BSL.pdf]. Accessed 2 August 2020.
- [5] International Standardization Organisation (ISO). 2017. "ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories." [https://www.iso.org/obp/ui/#iso:std:iso-iec:17025:ed-3:v1:en]. Accessed 2 August 2020.
- [6] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/]. Accessed 2 August 2020.
- [7] Department of Health. 2020 [http://www.health.gov.za/index.php/diseases]. Accessed 2 August 2020.
- [8] Department of Agriculture, Land Reform and Rural Development. 2020. [https://www.dalrrd.gov.za/]. Accessed 2 August 2020.
- [9] Ministry of Defence. "Homepage". [http://www.dod.mil.za/]. Accessed 2 August 2020.
- [10] National Laboratory Association South Africa. [https://www.nhls.ac.za/wp-content/uploads/2018/10/NHLS_Strat_Plan_VG_2018-19.pdf]. Accessed 2 August 2020.
- [11] The Verification Research, Training & Information Centre (Vertic). 2020. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/]. Accessed 26 August 2020.
- [12] United Nations. 2018. "South African Confidence Building Measures". [https://bwc-ecbm.unog.ch/state/south-africa]. Attempted access 2 August 2020.

1.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence that South Africa has an established agency responsible for the enforcement of biosecurity legislation and regulations. A 2015 review by the Academy of Science of South Africa found 29 laws and regulations related to biosafety and biosecurity. The report, however, does not mention such an established agency. [1] No further evidence of such an agency was found on the government webpage on the State Security Agency (SSA), in the National Health Act of 2003, or other manuals or checklists (which are predominantly focused on biosafety, rather than biosecurity). [2,3,4,5,6] There is no public evidence to suggest that this has changed since last reported. Similarly, although the Joint External Evaluation for South Africa, conducted in November/December 2017, states that there is a comprehensive framework for biosafety and biosecurity, it does not make mention of such an agency [7] The Verification Research, Training & Information Centre (Vertic) states that South Africa is party to The Biological Weapons Convention (BWC). There is no mention in the documents on the database of such an agency. [8] No evidence could be found on the websites of the

Department of Health, the Department of Agriculture, Land Reform and Rural Development or the Ministry of Defence that the country has such an agency [9,10,11] The National Laboratory Association, through the National Institute for Communicable Diseases (NICD), states in its Strategic Plan for fiscal years 2018-2020 that it has implemented numerous internal controls to mitigate risk. It has an IBBC (Institutes Biosafety and Biosecurity Committee), but this is not the national agency responsible for oversight of biosecurity legislation. [12] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the BWC, access to the report is restricted, and the text is not publicly available. [13]

- [1] Academy of Science of South Africa (ASSAf). 2015. "The state of biosafety and biosecurity in South Africa." [http://www.assaf.co.za/wp-content/uploads/2011/10/Final-WEB-K-12423-ASSAF-Biosafety-and-Biosecurity-Report_DevV11LR.pdf]. Accessed 2 August 2020.
- [2] National Government of South Africa. 2020. State Security Agency (SSA). [https://nationalgovernment.co.za/units/view/42/state-security-agency-ssa]. Accessed 26 August 2020.
- [3] Government of South Africa. 2013. "National Health Act No. 61 of 2003." [https://www.gov.za/documents/national-health-act]. Accessed 2 August 2020.
- [4] Department of Agriculture, Land Reform and Rural Development (DALRRD). August 2015. "Procedure manual: DAFF approval of laboratories." [http://www.nda.agric.za/vetweb/epidemiology/Laboratories/Procedure%20Manual%20DAFF%20Approval%20of%20Laboratories%202015.pdf]. Accessed 2 August 2020.
- [5] Department of Agriculture, Land Reform and Rural Development, Directorate Animal Health. 2018. "Checklist: Biosafety level (BSL)." [http://www.nda.agric.za/vetweb/epidemiology/Laboratories/DAFF%20012%20-F08%20ED%2009%20Checklist%20BSL.pdf]. Accessed 2 August 2020.
- [6] International Standardization Organisation (ISO). 2017. "ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories." [https://www.iso.org/obp/ui/#iso:std:iso-iec:17025:ed-3:v1:en]. Accessed 2 August 2020.
- [7] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/]. Accessed 2 August 2020.
- [8] The Verification Research, Training & Information Centre (Vertic). 2020. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/]. Accessed 26 August 2020.
- [9] Department of Health. 2020. [http://www.health.gov.za/index.php/diseases]. Accessed 2 August 2020.
- [10] Department of Agriculture, Land Reform and Rural Development. 2020. [https://www.dalrrd.gov.za/]. Accessed 2 August 2020.
- [11] Ministry of Defence. "Homepage". [http://www.dod.mil.za/]. Accessed 2 August 2020.
- [12] National Laboratory Association South Africa. [https://www.nhls.ac.za/wp-content/uploads/2018/10/NHLS_Strat_Plan_VG_2018-19.pdf]. Accessed 2 August 2020.
- [13] United Nations. 2020. "South African Confidence Building Measures". [https://bwc-ecbm.unog.ch/state/south-africa]. Accessed 2 August 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 insufficient evidence that shows that South Africa has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, states that "the collections of dangerous agents has long been consolidated and

centralized at the national reference laboratories, namely the NICD [National Institute for Communicable Diseases] and ARC-OVR [Agricultural Research Council-Onderstepoort Veterinary Research]." [1] There is no further information on consolidation of inventories on the websites for the Department of Health, the Department of Agriculture, the Department of Environmental Affairs, the Department of Trade and Industry, the South African Council for the Non-Proliferation of Weapons of Mass Destruction, the Department of Science and Technology, the South African Police Service or the Verification Research, Training & Information Centre (Vertic). [2,3,4,5,6,7,8,9]. Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [10]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. 2 August 2020.

[2] Department of Health. "Homepage". [<http://www.health.gov.za>]. 2 August 2020.

[3] Department of Agriculture, Forestry and Fisheries. August 2015. [<http://www.daff.gov.za>]. 2 August 2020.

[4] Department of Environmental Affairs. "Homepage". [<https://www.environment.gov.za/>]. 2 August 2020.

[5] Department of Trade and Industry. "The Regulatory Debates", Edition 6, September 2017.

[<http://www.thedti.gov.za/DownloadFileAction?id=1198>], and "Media statements",

[<http://www.thedti.gov.za/medianewsroom.jsp>]. 2 August 2020.

[6] The South African Council for the Non-proliferation of Weapons of Mass Destruction. "Homepage".

[<https://www.thedti.gov.za/nonproliferation/default.htm>]. 2 August 2020.

[7] Department of Science and Technology. "Legislation." [<http://www.dst.gov.za/index.php/legal-statutory/acts>]. 2 August 2020.

[8] South African Police Service. "Resource Centre." [https://www.saps.gov.za/resource_centre/rc_index.php]. 2 August 2020.

[9] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.

[10] United Nations. 2020. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. 2 August 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 public evidence of South Africa having the capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax and Ebola, which would preclude culturing a live pathogen. The National Institute for Communicable Diseases (NICD) has the capacity to conduct testing for especially dangerous pathogens including anthrax and Ebola. Testing for especially dangerous pathogens is only available at the NICD's Centre for Emerging and Zoonotic Diseases, which has a special viral pathogens laboratory. According to the NICD, confirmation of anthrax infection is done through "isolation of the bacterium from blood, cerebrospinal fluid, skin lesion swab or respiratory secretions by culture or PCR Bacillus anthracis DNA." Ebola tests available include "Serology: fluorescent antibody test, IgG and Ig"; "Serology: ELISA, IgG and IgM"; and PCR. [1,2] In 2014, the NICD established a field diagnostic laboratory for Ebola near Freetown, Sierra Leone in response to an outbreak. [3]

[1] National Institute for Communicable Diseases. January 2016. "Anthrax Frequently Asked Questions."

[http://www.nicd.ac.za/assets/files/Anthrax%20FAQ_20160129_FINAL.pdf]. Accessed 2 August 2020.

[2] National Institute for Communicable Diseases. August 2019. "Guidelines for the specialized laboratory investigation of Ebola virus disease in South Africa." [<https://www.nicd.ac.za/wp-content/uploads/2019/08/Ebola-Virus-Diseases-Lab-guidelines-150819-jw.pdf>]. Accessed 2 August 2020. 3] National Institute for Communicable Diseases. 2014. "Third Report on the operation of the Ebola Mobile Laboratory of the National Institute for Communicable Diseases in Sierra Leone, Freetown".

[https://www.researchgate.net/publication/271504500_Third_Report_on_the_operation_of_the_Ebola_Mobile_Laboratory_of_the_National_Institute_for_Communicable_Diseases_in_Sierra_Leone_Freetown_Janusz_T_Paweska_Head_Centre_for_Emerging_and_Zoonotic_Disease]. Accessed 2 August 2020.

[https://www.researchgate.net/publication/271504500_Third_Report_on_the_operation_of_the_Ebola_Mobile_Laboratory_of_the_National_Institute_for_Communicable_Diseases_in_Sierra_Leone_Freetown_Janusz_T_Paweska_Head_Centre_for_Emerging_and_Zoonotic_Disease]. Accessed 2 August 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that biosecurity training is either required or standardized in South Africa. The Joint External Evaluation for South Africa, conducted in November/December 2017, states that there are bio-risk management programs at national reference laboratories, but does not specify what topics this covers. Additionally, the report notes that there is a lack of a national consolidated training curriculum for biosafety and biosecurity. [1] An Academy of Science of South Africa (ASSAf) 2018 paper, titled 'The State of Laboratory Biosafety and Biosecurity in the Southern African Development Community (SADC) Region', states that, in spite of a train-the-trainer course in biosafety and biosecurity having taken place (since 2015), and a biosafety and biosecurity training unit having been put in place, key challenges still include lack of or limited training programmes on laboratory biosafety and biosecurity, and a low level of awareness about laboratory biosafety and biosecurity, especially among researchers and scientists. [2] There is no publicly available evidence on a consolidated training curriculum through the Department of Health, the Department of Agriculture, the Department of Environmental Affairs, the Department of Trade and Industry, the Department of Science and Technology, the South African Police Service or the Verification Research, Training & Information Centre (Vertic). [3,4,5,6,7,8,9] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [10]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 2 August 2020.

[2] The Academy of Science of South Africa (ASSAf). March 2018. 'The State of Laboratory Biosafety and Biosecurity in the Southern African Development Community (SADC) Region'. [https://www.nepadsanbio.org/sites/default/files/2018-08/2018_assaf_State%20of%20Laboratory%20Biosafety%20%20Biosecurity%20in%20the%20SADC%20Region%20-%20Proceedings%20Report.pdf]. Accessed 2 August 2020.

[3] Department of Health. "Homepage". [<http://www.health.gov.za/index.php/2014-03-17-09-09-38/annual-performance-plans>]. Accessed 2 August 2020.

[4] Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 2 August 2020.

- [5] Department of Environmental Affairs. "Homepage". [<https://www.environment.gov.za/>]. Accessed 2 August 2020.
- [6] Department of Trade and Industry. 2020. [<http://www.thedtic.gov.za/>]. Accessed 2 August 2020.
- [7] Department of Science and Technology. "Legislation." [<http://www.dst.gov.za/index.php/legal-statutory/acts>]. Accessed 2 August 2020.
- [8] South African Police Service. "Resource Centre." [https://www.saps.gov.za/resource_centre/rc_index.php]. Accessed 2 August 2020.
- [9] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.
- [10] United Nations. 2020. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 2 August 2020.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no publicly available evidence of the existence of regulations and licensing conditions that require drug testing, background checks or psychological fitness checks for personnel at facilities with biological materials that could cause pandemics. The procedures manual for laboratory approvals from the Department of Agriculture, Fisheries and Forestry (DAFF) does not list these checks as a requirement. [1] SANAS, the national standards agency, works with DAFF to approve laboratories according to the international standard ISO 17025. [2] Accreditation is based on quality and safety rather than security. [3,4] There is no evidence of drug testing, background checks or psychological fitness checks related specifically to biosecurity on the websites of the Department of Health, the National Health Laboratory Service (NHLS), or the National Institute for Communicable Diseases (NICD) within the NHLS. [5,6,7] The NICD houses the Centre for Emerging Zoonotic Diseases, which handles dangerous biological materials. [7] The NHLS does state on its careers page that job offers are subject to security checks, but no information is provided on what these checks involve or why they are in place. [8] Nothing in the Joint External Evaluation for South Africa, conducted in November/December 2017, suggests that personnel are subject to these three checks. [9] There is no publicly available evidence on the websites of either the Department of Agriculture, the Ministry of Defence, the National Laboratory Association of South Africa or the Verification Research, Training & Information Centre (Vertic) that South Africa that these personnel are subject to drug testing, background checks or psychological testing. [10,11,12,13] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [14]

[1] Department of Agriculture, Fisheries and Forestry. 2015. "Procedure Manual DAFF Approval of Laboratories 2015." [<http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/Epidemiology>]. Accessed 2 August 2020.

[2] Motaung, Masabata. 2005. "Applying technical requirements of ISO/IEC 17025:2005 in the zoonotic diseases testing laboratory: Discussion on the challenges." Agricultural Research Council. [http://www.nla.org.za/conferences/proceedings_archive/2017/Manuscripts/Tuesday%2001%20August/T304%20-%20Applying%20technical%20requirements%20of%20ISO%2017025%20in%20the%20Zoonotic%20diseases%20testing%20laboratory.pdf]. Accessed 2 August 2020.

- [3] International Standardization Organisation (ISO). 2017. "ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories." [https://www.iso.org/obp/ui/#iso:std:iso-iec:17025:ed-3:v1:en]. Accessed 2 August 2020.
- [4] South African National Accreditation System (SANAS). 2020. [https://www.sanas.co.za/Pages/index.aspx]. Accessed 2 August 2020.
- [5] Department of Health. 2017. "Homepage". [http://www.health.gov.za/]. Accessed 2 August 2020.
- [6] National Health Laboratory Service. "Homepage". [http://www.nhls.ac.za]. Accessed 2 August 2020.
- [7] National Institute for Communicable Diseases. "Homepage". [http://www.nicd.ac.za]. Accessed 2 August 2020.
- [8] National Health Laboratory Service. "Careers". [http://www.nhls.ac.za/?page=careers&id=21]. Accessed 2 August 2020.
- [9] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/]. Accessed 2 August 2020.
- [10] Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [https://www.dalrrd.gov.za/]. Accessed 2 August 2020.
- [11] Ministry of Defence. "Homepage". [http://www.dod.mil.za/]. Accessed 2 August 2020.
- [12] National Laboratory Association South Africa. "Homepage". [http://www.nhls.ac.za/]. Accessed 2 August 2020.
- [13] The Verification Research, Training & Information Centre (Vertic). 2020. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/]. Accessed 26 August 2020.
- [14] United Nations. 2020. "South African Confidence Building Measures". [https://bwc-ecbm.unog.ch/state/south-africa]. Accessed 2 August 2020.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 0

There is some evidence that national regulations covering the safe and secure transport of infectious substances in South Africa exist, however Category A and B substances are not consistently mentioned. The South African National Standards website has a section on transport of dangerous goods, in which there are various sections on regulations pertaining to road and rail transport. [1] Air transport of infectious substances is covered by the Civil Aviation Authority (CAA).

Included in the South African Civil Aviation Technical Standards (SA CATS) is SA-CATS 92 'Conveyance of dangerous goods', which in turn refers to International Civil Aviation Organization (ICAO) Doc 9284. [2,3] There are various government bodies of relevance that have different frameworks, specific to their work. At the highest level, the Health Act of 2003 R178 addresses the importation and handling of human pathogens, but lacks guidelines for chain of custody for sensitive materials. [4] The Hazardous Substances Act of 1973 does not address this. [5] The Department of Labour's 2001 Regulations for Hazardous Biological Agents state that where hazardous biological agents are transported, employers are responsible for proper containment and labelling, and for ensuring drivers are trained and certified in emergency procedures. They lack reference to up-to-date international standards. [6,7] The South African Bureau of Standards (SABS) provides a range of standards covering the demands of the transport industry, from quality management systems to test methods for specific materials or parts. [8] The National Institute for Communicable Diseases' (NICD) instructions on sending potential Ebola specimens for testing during the 2014 outbreak did not reference any domestic regulations or guidelines on secure transportation, but instead provided ad-hoc guidance and referral to World Health Organisation (WHO) and International International Air Transport Association (IATA) websites. [9] There is no information on transport regulations and standards in

the report from the Joint External Evaluation for South Africa, conducted in November-December 2017. [10] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [11] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [12]

[1] South African National Standards. 3 July 2020. 'List of published standards'.

[https://www.sabs.co.za/Business_Units/Standards_SA/Controls/Published_Standards/PS1060.PDF]. Accessed 2 August 2020.

[2] South African Civil Aviation Technical Standards (SA CATS). 2011. 'SA-CATS 92 Conveyance of dangerous goods'.

[http://www.caa.co.za/Legal%20Documents/SACATS_2011.pdf]. Accessed 2 August 2020.

[3] International Civil Aviation Organization (ICAO). 2020. Doc 9284.

[<https://www.icao.int/publications/pages/publication.aspx?docnum=9284>]. Accessed 2 August 2020.

[4] Department of Health. 2012. "Health Act of 2003, Regulation 178." [<http://www.health.gov.za/index.php/2014-03-17-09-09-38/legislation/joomla-split-menu/category/84-2012r>]. Accessed 2 August 2020.

[5] Government of South Africa. 1973. "Hazardous Substances Act".

[www.gov.za/sites/www.gov.za/files/Act%2015%20of%201973.pdf]. Accessed 2 August 2020.

[6] Government of South Africa. "Occupational Health and Safety Act (85 of 1993)."

[<http://www.sun.ac.za/english/policy/Documents/Occupational%20Health%20and%20Safety%20Act.pdf>]. Accessed 2 August 2020.

[7] Department of Labour. 2001. "Regulations for Hazardous Biological Agents."

[http://www.idm.uct.ac.za/sites/default/files/image_tool/images/496/Documents/HealthSafety/Hazardous_Biological_Agents_Regulations.pdf]. Accessed 2 August 2020.

[8] The South African Bureau of Standards. 2017. "Transportation Standards and Publications."

[https://www.sabs.co.za/Sectors-and-Services/Sectors/Transport/transport_sp.asp]. Accessed 2 August 2020.

[9] National Institute for Communicable Diseases. 2014. "Guidelines for the Specialized Laboratory Investigation of Suspected Ebola Disease in South Africa." [<https://www.nicd.ac.za/wp-content/uploads/2019/08/Ebola-Virus-Diseases-Lab-guidelines-150819-jw.pdf>]. Accessed 2 August 2020.

[10] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 2 August 2020.

[11] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.

[12] United Nations. 2020. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 2 August 2020.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that South Africa has national regulations in place that oversee the cross-border transfer and end-user screening of dangerous pathogens and toxins and pathogens with pandemic potential. The Department of Trade and Industry (DTI) Notice 19 of 2010 includes technical notes on acceptable equipment for containing hazardous biological

materials for transportation. The Council [The South African Council for the Non-Proliferation of Weapons of Mass Destruction], under the Department of Trade and Industry (DTI), issues permits for import/export of controlled biological substances, and may require state-to-state assurance or end-use certificates. [1] However, it is worth noting that end-user screening is not mandatory or routinely conducted per the DTI Notice 19 of 2010. [1] The Joint External Evaluation report for South Africa, conducted in November-December 2017, states that "The Department of Trade and Industry operates the South African Council for Non-Proliferation of Weapons of Mass-Destruction, and with regard to associated regulations and acts, registers facilities holding dangerous agents and technologies and approves transfer of dangerous pathogens between facilities (import and export)" but does not mention end-user screening. [2,3] The Border Management Authority Act became law on 21 July 2020. This states that border and port of entry law enforcement shall be carried out exclusively by the officers of the Authority but does not specify end-user screening measures. [4]

[1] The Department for Trade and Industry. 3 February 2010. "Declaration Of Certain Biological Goods And Technologies As Controlled Goods And Control Measures Applicable To Such Goods," Notice 19, 2010 Under The Non-proliferation Of Weapons Of Mass Destruction Act Of 1993; Updated Version.

[https://cisp.cachefly.net/assets/articles/attachments/25761_not19.pdf]. Accessed 3 August 2020.

[2] Republic of South Africa Government Gazette. 2 July 1993. World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.

[3] 'Non-Proliferation of Weapons of Mass-Destruction Act No. 87 of 1993'.

[https://www.gov.za/sites/default/files/gcis_document/201504/act87of1993.pdf]. Accessed 3 August 2020.

[4] Republic of South Africa. 21 July 2020. 'Border Management Authority Act'.

[https://www.gov.za/sites/default/files/gcis_document/202007/43536gon799.pdf]. Accessed 3 August 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

South Africa has a comprehensive range of biosafety acts, regulations and standards in place, according to a 2015 report by the Academy of Science of South Africa and the Joint External Evaluation report of 2017 (JEE). [1,2] Biosafety standards in laboratories are influenced by international standards, including ISO 17025 and ISO 8402. [3] Examples of national legislation including biosafety are the Department of Labour's 'Occupational Health and Safety Act' and 'Regulations for Hazardous Biological Agents'. These Acts cover prevention of accidents that involve the release of harmful biological substance. [4,5] The JEE does state that, although the national reference laboratories "are regarded as experts nationally and internationally", "there is currently no consolidated list of pathogens with risk classification; there is no formal policy regarding the issue of dual use in South Africa; there is only a low level of collaboration with law enforcement and military with regard to biosecurity." Although there is a national biosafety and biosecurity committee, it does not yet have multisectoral representation which will be essential to consolidate the present lack of coordination across the various authorities. [2]

[1] Academy of Science of South Africa. 2015. "The state of biosafety and biosecurity in South Africa,"

[<http://research.assaf.org.za/handle/20.500.11911/58>] Accessed 3 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 3 August 2020.

[3] Department of Agriculture, Land Reform and Rural Development (DALRRD). June 2018. "Procedure manual".

[<https://www.nda.agric.za/vetweb/epidemiology/Laboratories/Procedure%20Manual%20DAFF%20Laboratory%20Biosafety%20and%20Biosecurity%202018.pdf>]. Accessed 3 August 2020.

[4] Government of South Africa. 1993. "Occupational Health and Safety Act (85 of 1993)."

[<http://www.sun.ac.za/english/policy/Documents/Occupational%20Health%20and%20Safety%20Act.pdf>].

[5] Department of Labour. 2001. "Regulations for hazardous biological agents."

[<https://www.labourguide.co.za/workshop/1664-hba-reg-2001/file>]. Accessed 3 August 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 public evidence that there is an established agency responsible for the enforcement of biosafety legislation and regulations. The Joint External Evaluation (JEE) report for South Africa, conducted in November/December 2017, notes that the "Occupational Health & Safety Administration oversees committees that address occupational health and safety (and in the laboratory environment this relates to biosafety) in the workplace". The Department of Health regulated microbiological registration through the National Health Act and the Department of Labour regulates worker safety through the Occupational Health and Safety Act. [1]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 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 train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a mandatory requirement for standardised bio-safety training for personnel working in facilities with dangerous pathogens, toxins, or biological materials with pandemic potential. The Department of Health, and that of Agriculture, Forestry and Fisheries do not have legislation or rules requiring a standardised approach. [1,2] The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, finds that there is a lack of a national consolidated training curriculum for biosafety and biosecurity. The report does mention, however, that "the National Institute for Communicable Diseases (NICD) is currently also establishing a training centre, which covers the topics of biosafety and biosecurity. There are also university courses on the topic, and the NHLS provide their laboratory staff training in biosafety and biosecurity as well ". [3] The Department of Labour's Regulations for Hazardous Biological Agents require employers to train employees working with biological materials in bio-safety, but do not mention a standardised approach. No more recent information is provided by the Department of Labour. [4] The South African National Accreditation System (SANAS) is legally appointed as the only accreditation body in the country for good laboratory practice. It offers

training courses leading to accreditation but there is no evidence that these are mandatory or aimed at personnel working with dangerous biological materials. [5,6] A 2015 assessment of biosafety by the Academy of Science of South Africa surveyed a representative sample of laboratories and found that generally training is provided to laboratory workers when appropriate, though it does not state specifically that this is the case for dangerous pathogens. [7] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [8] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [9]

- [1] Department of Health. 2018. "Regulations." [<http://www.health.gov.za/index.php/2014-03-17-09-09-38/legislation/joomla-split-menu>]. Accessed 3 August 2020.
- [2] Department of Agriculture, Forestry and Fisheries. 2018. "Resource Centre." [<http://www.daff.gov.za/daffweb3/Resource-Centre>]. Accessed 3 August 2020.
- [3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.
- [4] Department of Labour. 2001. "Regulations for Hazardous Biological agents." [<https://www.labourguide.co.za/workshop/1664-hba-reg-2001/file>]. Accessed 3 August 2020.
- [5] South African National Accreditation System. 2020. 'Courses and Schedule'. [<https://www.sanas.co.za/Pages/index.aspx>]. Accessed 3 August 2020.
- [6] Government of South Africa. 2007. "Accreditation for Conformity Assessment, Calibration and Good Laboratory Practice Act, 19 of 2006". [<https://www.gov.za/documents/accreditation-conformity-assessment-calibration-and-good-laboratory-practice-act>]. Accessed 3 August 2020.
- [7] Academy of Science of South Africa. 2015. "The State of Biosafety And biosecurity In South Africa." [<http://research.assaf.org.za/handle/20.500.11911/58>]. Accessed 3 August 2020.
- [8] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.
- [9] United Nations. 2020. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 3 August 2020.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has conducted an assessment to determine whether ongoing research is occurring with regard to especially dangerous pathogens, toxins, pathogens with pandemic potential, and/or other dual-use research. The Joint External Evaluation report for South Africa, conducted November-December 2017, states that "there is no formal policy regarding the issue of dual use in South Africa, and this has been identified as an actionable point." However, the South African Council for Non-Proliferation of Weapons of Mass-Destruction, under the Department of Trade and Industry, does register "facilities holding dangerous agents and technologies". [1] There is no evidence of dual-use

research assessments being conducted by the National Health Research Ethics Council of South Africa (NHREC) or the Department of Health (DOH). [2, 3] There is also no additional information via the Department of Defence, the Department of Agriculture, Land Reform and Rural Development or the Department of Science and Technology. [4, 5, 6] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [7] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [8] There is no other evidence in the media of assessments of ongoing research on dangerous pathogens.

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.

[2] National Health Research Ethics Council of South Africa (NHREC). 2018. "Homepage".

[<http://nhrec.health.gov.za/index.php/component/content/article?id=111>]. Accessed 3 August 2020.

[3] Department of Health. [<http://www.health.gov.za/>]. Accessed 3 August 2020.

[4] Department of Defence. [<http://www.dod.mil.za/>]. Accessed 3 August 2020.

[5] Department of Agriculture, Fisheries and Forests. [<https://www.daff.gov.za/>]. Accessed 3 August 2020.

[6] Department of Science and Technology. [<https://www.dst.gov.za/>]. Accessed 3 August 2020.

[7] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.

[8] United Nations. 2018. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 3 August 2020.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

South Africa does not have a national policy that requires the oversight of dual-use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. The Joint External Evaluation report for South Africa, conducted November-December 2017, states that "there is no formal policy regarding the issue of dual use in South Africa, and this has been identified as an actionable point." However, the South African Council for Non-Proliferation of Weapons of Mass-Destruction, under the Department of Trade and Industry, does register "facilities holding dangerous agents and technologies". [1] There is no evidence of dual-use research legislation by the National Health Research Ethics Council of South Africa (NHREC) or the Department of Health (DOH) guidelines. [2, 3] There is no additional information via the Department of Defence, the Department of Agriculture, Forestry and Fisheries or the Department of Science and Technology to suggest there is a national policy. [4, 5, 6] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [7] Although South Africa has submitted Confidence Building Measures in 2019 and 2020 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [8] There is no other evidence in the media of a requirement for oversight of dual use research.

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.

[2] National Health Research Ethics Council of South Africa (NHREC). 2018. "Homepage". [<http://www.nhrec.org.za>]. Accessed 3 August 2020.

- [3] Department of Health. [<http://www.health.gov.za/>]. Accessed 3 August 2020.
- [4] Department of Defence. [<http://www.dod.mil.za/>]. Accessed 3 August 2020.
- [5] Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 3 August 2020.
- [6] Department of Science and Technology. [<https://www.dst.gov.za/>]. Accessed 3 August 2020.
- [7] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.
- [8] United Nations. 2018. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 3 August 2020.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has a national policy or oversight agency on dual use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. The Joint External Evaluation report for South Africa, conducted November-December 2017, states that "there is no formal policy regarding the issue of dual use in South Africa, and this has been identified as an actionable point." However, the South African Council for Non-Proliferation of Weapons of Mass-Destruction, under the Department of Trade and Industry, does register "facilities holding dangerous agents and technologies". [1] There is no evidence of dual use research legislation or oversight by the National Health Research Ethics Council of South Africa (NHREC) or the Department of Health (DOH) guidelines. [2, 3] There is no additional information via the Department of Defence, the Department of Agriculture, Land Reform and Rural Development (DALRRD) or the Department of Science and Technology to suggest there is a national policy. [4, 5, 6] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [7] Although South Africa has submitted Confidence Building Measures in 2017 and 2018 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [8]

- [1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.
- [2] National Health Research Ethics Council of South Africa (NHREC). 2018. "Homepage". [<http://www.nhrec.org.za>]. Accessed 3 August 2020.
- [3] Department of Health. [<http://www.health.gov.za/>]. Accessed 3 August 2020.
- [4] Department of Defence. [<http://www.dod.mil.za/>]. Accessed 3 August 2020.
- [5] Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 3 August 2020.
- [6] Department of Science and Technology. [<https://www.dst.gov.za/>]. Accessed 3 August 2020.
- [7] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.
- [8] United Nations. 2018. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 3 August 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has any national legislation, regulations, policies, or other guidance requiring the screening of synthesised DNA before it is sold. The Department of Science and Technology (DST) is the agency responsible for developing strategies and legislation on biotechnology in South Africa. In the past 20 years this has predominantly focused on GMOs, which are also the focus of Biosafety South Africa, a public body under the DST which advises stakeholders on biosafety and risk analysis best practice. [1, 2] Risks related to synthesised DNA are neither addressed in a Bio-Economy Strategy published by the DST in 2014, nor is there any public evidence of requirements for screening of synthesised DNA before it is sold in the other legislation or policy documents published by the DST, Department of Health, the Ministry of Agriculture or the Ministry of Defence. [3, 4, 5, 6, 7] There is also no mention of such a policy in the Joint External Evaluation for South Africa, conducted in November-December 2017. [8] No further information could be found on the Verification Research, Training & Information Centre (Vertic) website. [9] Although South Africa has submitted Confidence Building Measures in 2017 and 2018 under the Biological Weapons Convention, access to the report is restricted, and the text is not publicly available. [10]

[1] Groenewald, Hennie. October 2017. "Status of biotechnology development in South Africa: Regulatory experiences," presentation by South Africa's Department for Science and Technology, Biosafety South Africa.

[<http://www.biosafetykenya.go.ke/images/download/conferencematerials/6thannualpresentations/SA-biotech--biosafety-regulation-Kenya-NBC-5Oct17.pdf>]. Accessed 3 August 2020.

[2] Biosafety South Africa. 2018. [<http://biosafety.org.za/>]. Accessed 3 August 2020.

[3] Department of Science and Technology. 2014. "The Bio-Economy Strategy."

[<http://www.dst.gov.za/images/ska/Bioeconomy%20Strategy.pdf>]. Accessed 3 August 2020.

[4] Department of Science and Technology. 2020. [<http://www.dst.gov.za/>]. Accessed 3 August 2020.

[5] Department of Health. 2020. [<http://www.health.gov.za/>]. Accessed 3 August 2020.

[6] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 3 August 2020.

[7] Ministry of Defence. 2020. "Homepage". [<http://www.dod.mil.za/>]. Accessed 3 August 2020.

[8] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 3 August 2020.

[9] The Verification Research, Training & Information Centre (Vertic). 2020. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/s/>]. Accessed 26 August 2020.

[10] United Nations. 2020. "South African Confidence Building Measures". [<https://bwc-ecbm.unog.ch/state/south-africa>]. Accessed 3 August 2020.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 0

2019

World Health Organization

1.6.1b

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

Yes = 1, No = 0

Current Year Score: 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

South Africa's national laboratory has the capacity to conduct five or more of the ten WHO-defined core tests, and these tests can be conducted for humans. The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, scores South Africa as a 5 for Indicator D.1.1 (Laboratory testing for detection of priority diseases) which indicates the country can conduct at least five of the ten WHO core tests (The first, 2005, edition of the JEE Tool was used). [1, 2] The JEE

does not note how many of the tests or which tests South Africa can conduct. [1] According to the JEE report, the National Health Laboratory Service (NHLS) is the largest diagnostic pathology service in South Africa, with the responsibility of supporting the national and provincial health departments in the delivery of healthcare. The NHLS can carry out tests including polymerase chain reaction (PCR) testing for influenza virus; virus culture for the polio virus; serology for HIV; microscopy for mycobacterium tuberculosis; rapid diagnostic testing for plasmodium spp.; and bacterial culture for salmonella enteritidis serotype typhi. [3] Neither the NHLS nor the JEE indicate which tests are the four country-defined core tests. [1,3]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 4 August 2020.

[2] World Health Organisation. "Joint External Evaluation Tool - International Health Regulations (2005)". [http://apps.who.int/iris/bitstream/handle/10665/204368/9789241510172_eng.pdf;jsessionid=E6458699B4219EE890C4D1AEBC793EB?sequence=1]. Accessed 4 August 2020.

[3] National Health Laboratory Service. 2018. "NHLS Handbook." [http://www.nhls.ac.za/?page=lists_of_tests&id=27]. Accessed 4 August 2020.

2.1.1b

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

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

Current Year Score: 1

There is evidence that there is a national plan for conducting testing during a public health emergency, which includes considerations for defining goals for testing. The Department of Health 2020 "National preparedness and response plan - Novel coronavirus" has a section titled "Goals and objectives" which includes testing, and another titled "Coordination of COVID-19 preparedness" in which details of national roles and responsibilities are clearly defined. This plan does not deal with novel pathogens. [1] The objectives in the plan include maintaining testing capacity, ensuring safe transport of specimens, training laboratory staff, and rapid testing of case contacts. [1]

[1] Department of Health. February 2020. National preparedness and response plan Novel coronavirus. [https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 20 March 2021.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence to show that the reference laboratories in South Africa, under the National Health Laboratory Service (NHLS), the National Institute for Communicable Diseases (NICD) and the Centre for Emerging and

Zoonotic Diseases (CEZD), are all accredited in accordance with ISO standards. NHLS laboratories are accredited by the South Africa National Accreditation System (SANAS) for compliance with international standards (ISO 15189:2007). [1] NICD laboratories, including the CEZD, have been SANAS accredited in accordance with ISO 15189:2012. [2]

[1] National Health Laboratory Service (NHLS). "QA Division." [http://www.nhls.ac.za/?page=qa_division&id=41]. Accessed 4 August 2020.

[2] National Institute for Communicable Diseases (NICD). "Quality Assurance." [<https://www.nicd.ac.za/centre-for-quality-assurance/>]. Accessed 4 August 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that the National Institute for Communicable Diseases (NICD), which serves as the reference laboratory is subject to external quality assurance review. Reference laboratories in South Africa, under the National Health Laboratory Service (NHLS), the NICD and the Centre for Emerging and Zoonotic Diseases (CEZD), are all accredited in accordance with ISO standards. NHLS laboratories are accredited by the South Africa National Accreditation System (SANAS) for compliance with international standards (ISO 15189:2007). [1] NICD laboratories, including the CEZD, have been SANAS accredited in accordance with ISO 15189:2012. [2,3] ISO 15189 certification requires external quality assurance reviews. [4] The NICD details that it oversees Proficiency Testing Schemes as external quality assessment (EQA) method for laboratories, but does not specify that the NICD itself undergoes them. [1,2,5] The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, does mention internal and external quality assurance for National Health Laboratory Service (NHLS) laboratories, but does not specifically mention EQAs for the NICD. [6] The NICD serves as an EQA provider for HIV and measles for SADC countries, and also collaborates with the WHO to conduct a long-running EQA programme in the Africa region. [7, 8,9]

[1] National Health Laboratory Service (NHLS). "QA Division." [http://www.nhls.ac.za/?page=qa_division&id=41]. Accessed 6 August 2020.

[2] National Institute for Communicable Diseases (NICD). "Quality Assurance." [<http://www.nicd.ac.za/index.php/services/quality-assurance/>]. Accessed 6 August 2020.

[3] National Institute for Communicable Diseases (NICD). 2017. "NICD annual overview 2016/17." [http://www.nicd.ac.za/wp-content/uploads/2017/03/NICD_AR_2016_17.pdf]. Accessed 6 August 2020.

[4] 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 6 August 2020.

[5] National Health Laboratory Service (NHLS). "Proficiency Testing." [http://www.nhls.ac.za/?page=proficiency_testing&id=42]. Accessed 6 August 2020.

[6] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 6 August 2020.

[7] National Institute for Communicable Diseases (NICD). "Who we work with." [<http://www.nicd.ac.za/index.php/about-us/our-partners>]. Accessed 6 August 2020.

[8] Frean, et al. "External quality assessment of national public health laboratories in Africa, 2002-2009". Bulletin of the World Health Organization. [<http://www.who.int/bulletin/volumes/90/3/11-091876/en/>]. Accessed 6 August 2020.

[9] Boeras, et al. 2016. "The WHO AFRO external quality assessment programme (EQAP): Linking laboratory networks through EQA programmes". African Journal of Laboratory Medicine 5

[2] : 560. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5433834>]. Accessed 6 August 2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

There is public evidence that South Africa's National Health Laboratory Service (NHLS) operates a nationwide specimen transport system. The Joint External Evaluation (JEE) for South Africa, conducted in November–December 2017, states that "the NHLS has developed a functional, nationwide specimen referral system which is delivered through a hybrid of service delivery models directly (by the NHLS systems) and indirectly (through the use of contracted couriers)." [1] NHLS is the largest diagnostic pathology service in South Africa, with the responsibility of supporting the national and provincial health departments in the delivery of healthcare. The NHLS provides laboratory and related public health services to over 80% of the population through a national network of laboratories. [2] The NHLS has a national network of pathology laboratories throughout the country that utilise common laboratory management systems and transport networks to facilitate transport of specimens, referral of tests to reference laboratories and delivery of results. [3] The National Institute for Communicable Diseases (NICD) is continuously analysing and interpreting data collected from laboratories and research and providing feedback to all relevant parties. The NICD supports the core capacity for surveillance in International Health Regulations (HR) by the 58th World Health Assembly held on 23 May 2005. [4]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 6 August 2020.

[2] National Health Laboratory Service. 2018. "About us." [http://www.nhls.ac.za/?page=about_us&id=16]. Accessed 6 August 2020.

[3] National Health Laboratory Service. 2018. "Scope of services." [http://www.nhls.ac.za/?page=scope_of_services&id=26]. Accessed 6 August 2020.

[4] National Institute for Communicable Diseases. 2020. 'Surveillance'. [<https://www.nicd.ac.za/our-services/surveillance/>]. Accessed 6 August 2020.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no publicly available evidence that there is 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 Department of Health has a 'Preparedness and Response Plan - Novel Coronavirus' in which one of the actions is to 'Strengthen/maintain NHLS laboratory capacity to support testing for SARS-CoV-2', but there is no mention of authorising or licensing laboratories.

[1] There is nothing about rapid authorisation or licensing of hospitals in any of the Department of Agriculture, Land Reform and Rural Development (DALRRD), the National Health Laboratory Service (NHLS) or the Public Health Institute of South Africa (PHISA) websites. [2,3,4] The South African Government News Agency stated, on 31 January 2020, that the Health Department had activated an emergency operations centre to deal with the global outbreak of the Coronavirus. This included the annexing of dedicated staff to work exclusively on the Coronavirus. The department also announced that hospitals in each of the 9 provinces were designated as centres for isolation and treatment. This does not, however, indicate that rapid authorisation or licensing is part of the process. [5]

[1] Department of Health. February 2020. 'Preparedness and Response Plan Novel Coronavirus' [https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 6 August 2020.

[2] Department of Agriculture, Land Reform and Rural Development. 2020. [https://www.dalrrd.gov.za/]. Accessed 6 August 2020.

[3] National Health Laboratory Service. 2018. "Scope of services." [http://www.nhls.ac.za/?page=scope_of_services&id=26]. Accessed 6 August 2020.

[4] Public Health Institute of South Africa (PHISA). 2020. [http://phisa.co.za/services/]. Accessed 6 August 2020.

[5] South African Government News Agency. 31 January 2020. 'SA activates Coronavirus emergency operations centre'. [https://www.sanews.gov.za/south-africa/sa-activates-coronavirus-emergency-operations-centre]. Accessed 6 August 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 1

There is evidence that South Africa is conducting ongoing event-based surveillance and analysis for infectious disease, but not that it is on a daily basis. South Africa has an event-based surveillance unit (EBS) within the National Emergency Operations Centre (EOC). The Joint External Evaluation for South Africa, conducted in November/December 2017, states that "event surveillance is also conducted at the National Emergency Operation Centre through media streaming and receiving of information through toll-free telephone lines". The report also mentions that the Public Health Emergency Operations Centre (PHEOC) specifically "also conducts regular event-based surveillance. The centre has an established hotline that is always available, however, it is for consultation of experts, not for reporting of incidents or alerts." [1] The National Institute for Communicable Diseases (NICD) website contains a COVID-19 Surveillance reports section, which includes a 'National COVID-19 Daily Report dashboard'. [2]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic of South Africa". [http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1]. Accessed 6 August 2020.

[2] National Institute for Communicable Diseases. 2020. [https://www.nicd.ac.za/diseases-a-z-index/covid-19/surveillance-reports/]. Accessed 6 August 2020.

2.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has reported a potential public health emergency of international concern (PHEIC) to the World Health Organisation (WHO) within the last two years including for Covid-19. There is no information on such reports through any of; the World Health Organisation Disease Outbreak News, the Ministry of Health or the South African National Travel Health Network (SaNTHNet). [1,2,3]

[1] WHO Disease Outbreak News page [<https://www.who.int/csr/don/archive/country/zaf/en/>]. Accessed 20 March 2021.

[2] Ministry of Health. [www.health.gov.za]. Accessed 20 March 2021.

[3] The South African National Travel Health Network (SaNTHNet). [<https://www.santhnet.co.za/index.php/resource-list/alerts-outbreaks/regional-outbreaks.html>]. Accessed 20 March 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence that South Africa has various electronic surveillance systems for potential epidemics, at both the national and sub-national level. The National Institute for Communicable Disease also has a compulsory system for reporting notifiable medical conditions (NMCs), for which electronic reporting capacity via a web and mobile app was launched in 2018. The site also notes that "Upon completion of data capture, save the data and the notification will automatically be sent to all relevant focal people" at the national and sub-national level. [1,2] In February 2018, the National Institute for Communicable Diseases (NICD) launched its web/mobile app for electronic reporting of notifiable medical conditions (NMCs). This provides real-time data on an ongoing basis. Category 1 NMCs (the most serious diseases) must be reported immediately using the fastest means necessary and must also be reported via the electronic system within 24 hours. [1,2] At the time of the Joint External Evaluation for South Africa, conducted in November/December 2017, the electronic real-time reporting mobile application was under development. [3] In 2012, South Africa introduced the 'National core standards for healthcare establishments', which requires electronic healthcare-associated infections surveillance through electronic reporting. [4] A disease-specific registry exists for tuberculosis. [5]

[1] National Institute for Communicable Diseases. "Notification process." [<https://www.nicd.ac.za/notification-process/>]. Accessed 6 August 2020.

[2] National Institute for Communicable Diseases. "NMC Electronic App." [<https://www.nicd.ac.za/notifiable-medical-conditions/>]. Accessed 6 August 2020.

[3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa." [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 6 August 2020.

[4] Dramowski, Angela. 2017. "Surveillance of HAIs." SAMJ Jan 2017, 107[1]. [www.scielo.org.za/pdf/samj/v107n1/25.pdf]. Accessed 6 August 2020.

[5] Podewils, Laura Jean, et al. 2015. "Completeness and reliability of the Republic of South Africa National Tuberculosis (TB) Surveillance System," In BMC Public Health 2015/15. [<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889->

015-2117-3]. Accessed 6 August 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

There is publicly available information to show that electronic surveillance systems in South Africa collect ongoing/real time data. In February 2018, the National Institute for Communicable Diseases (NICD) launched its web/mobile app for electronic reporting of notifiable medical conditions (NMCs). This provides real-time data on an ongoing basis. According to the NMC Information Pamphlet, laboratory data is reported to an email address or fax number on a daily basis. [1] At the time of the Joint External Evaluation for South Africa, conducted in November/December 2017, the electronic real-time reporting mobile application was still under development, though evidence from NICD indicates that this has been developed and is in use. [2]

[1] National Institute for Communicable Diseases. "Notifiable medical conditions." [<https://www.nicd.ac.za/notifiable-medical-conditions/>]. Accessed 6 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 6 August 2020.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 1

There is evidence that electronic health records are in use in South Africa, but systems have to be substantially upgraded and enlarged before they can be termed 'commonly in use'. The South African Department of Health (DOH) made the decision to introduce electronic health records in 2008 but implementation has been slow and is still in the development stages. The goal of the DOH is to allow patient tracking wherever patients present themselves and to address interoperability and fragmentation. [1] However, implementation has been slow due to weak ICT infrastructure. [2] The DOH reported in 2017 that roll-out of a health patient registration system (HPRS) had begun in 2013 and had been implemented in 1,854 primary health care facilities by the 2016-17 tax year. This appears to only cover basic registration information, not full health records. [3,4] In 2014, the NDoH collaborated with the South African Medical Research Council (SAMRC) and the Council for Scientific and Industrial Research (CSIR) on the development of the National Health Normative Standards Framework for Interoperability in eHealth in South Africa (HNSF). Although being a long way from perfect in its current version, the HNSF has formed the basis of new digital health systems being implemented by the NDoH. [5] A Department of Health article, dated May 2019, states that "the strategic challenges facing digital health over the years remain value for money on systems procured and implemented, as well as fragmented and poorly coordinated systems. The information systems assessments conducted by the CSIR in 2015 showed that several individual systems had been developed to address various aspects of the health system, but there needs to be further development of architecture and an integrated platform to make them interoperable. Furthermore, the department has implemented a Health Patient Registration System (HPRS) Project as an

initial prerequisite for the development of a patient electronic health record (EHR). The diagnostic, treatment and billing modules needed for an EHR in the context of NHI are yet to be developed. [6] Deputy Director-General of Health, Dr Yogan Pillay, says the problem of a unique identifier has been resolved both "conceptually and practically". He says there are currently around 26-million South Africans who are linked to the Health Patient Registration System (HPRS) via a Health Patient Registration Number (HPRN). [7]

- [1] Department of Health. 9 July 2012. "eHealth Strategy, South Africa, 2012." [https://ndoh.dhmis.org/owncloud/index.php/s/R5cmdp0gY4Fa43Z?path=%2FeHealth]. Accessed 6 August 2020.
- [2] Sikhondze, N. and Erasmus, Louwrence. 2016. "Electronic Medical Records: A Developing and Developed Country Analysis." International Association for Management of Technology, Iamot 2016 Conference Proceedings. [https://researchspace.csir.co.za/dspace/handle/10204/9204]. Accessed 6 August 2020.
- [3] Department of Health. 2017. "Annual Report 2016/17." [http://www.health.gov.za/index.php/2014-03-17-09-09-38/2014-03-17-09-24-31]. Accessed 6 August 2020.
- [4] Geldenhuys, Paul and Botha, Adele. 2015. "On the Design of An Electronic Health Patient Registration System for South Africa," In Steyn, J and Van Belle, Jp (Eds). 2015. Beyond Development: Time for A New ICT4D paradigm? Proceedings of the 9th IDIA Conference, IDIA2015, Nungwi, Zanzibar: 202-216. [https://pdfs.semanticscholar.org/b318/838fc7600a239349851293d6bdefe68b167a.pdf]. Accessed 6 August 2020.
- [5] Chowles, Terry. 19 September 2018. 'NDoH Spearheading Innovative eHealth Projects'. eHealth news. [https://ehealthnews.co.za/ndoh-ehealth-projects/]. Accessed 6 August 2020.
- [6] Department of Health. May 2019. 'National Digital Health Strategy for South Africa 2019 - 2024'. [http://www.health.gov.za/index.php/2014-08-15-12-54-26?download=3651:national-digital-health-strategy-for-south-africa-2019-2024]. Accessed 6 August 2020.
- [7] Gopal, Thania. 6th March 2019. 'In-depth: The problem of stopping or not starting HIV treatment'. Spotlight. [https://www.spotlightnsp.co.za/2019/03/06/in-depth-the-problem-of-stopping-or-not-starting-hiv-treatment/]. Accessed 6 August 2020.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

The South African national public health system does have access to electronic health records of individuals in the country, although this appears to be limited at present. The National Department of Health Annual Report 2018/19 states that the Department "is moving towards the development of an electronic health record, which began with development of the Health Patient Registration System. The stand-alone District Health Information System has been transformed to a web-District Health Information System. The main aim is to capture data for all fixed public healthcare facilities at the lowest level (N = 3 585) where internet connectivity is available. As at 31 March 2019, facility-level capturing for the country was 48%, with hospitals at 84% and PHC facilities at 44%, across eight provinces. The main challenge hampering implementation of facility-level data capturing at PHC level is the unavailability of internet connectivity." [1] There was no further information on the websites of the Ministry of Health, the Public Health Institute of South Africa (PHISA) or the National Health Laboratory Service (NHLS). [2,3,4]

- [1] Department of Health. 2019. "Annual Report 2018/19." [http://www.health.gov.za/index.php/2014-08-15-12-56-31?download=3688:annual-report-2018-2019]. Accessed 6 August 2020.
- [2] Ministry of Health. [www.health.gov.za]. Accessed 26 August 2020.
- [3] PHISA Public Health Institute of South Africa. [https://phisa.co.za/]. Accessed 26 August 2020.

[4] NHLS National Health Laboratory Service. [<http://www.nhls.ac.za>]. Accessed 26 August 2020.

2.4.1c

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

Yes = 1 , No = 0

Current Year Score: 1

There are data standards in South Africa to ensure that electronic health data is comparable. The Department of Health is intent to "Align the adoption of global standards with the South African Bureau of Standards (SABS)" in the 'National Digital Health Strategy for South Africa 2019 - 2024'. [1] The DOH annual report for 2018/19 outlines the continued progress in standardisation and interoperability of the various eHealth systems under development. [2] The country is a member of ISO/TC 215 Health Informatics and several standards are in use to promote interoperability and data interchange. South Africa has adopted ICD-10 as the national diagnosis coding standard. HL7 version 2.4 has been adopted as the national messaging standard in the public sector. [3]

[1] Department of Health. May 2019. 'National Digital Health Strategy for South Africa 2019 - 2024'.

[<http://www.health.gov.za/index.php/2014-08-15-12-54-26?download=3651:national-digital-health-strategy-for-south-africa-2019-2024>]. Accessed 7 August 2020.

[2] Department of Health. 2019. "Annual Report 2018/19." [<http://www.health.gov.za/index.php/2014-08-15-12-56-31?download=3688:annual-report-2018-2019>]. Accessed 6 August 2020.

[3] Mars, Maurice and Seebregts, Chris. 2008. "Country Case Study For e-health In South Africa".

[<https://www.k4health.org/sites/default/files/County%20Case%20Study%20for%20eHealth%20South%20Africa.pdf>]. Accessed 7 August 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

There is publicly accessible evidence of established mechanisms at the relevant ministries responsible for animal, human and wildlife surveillance to share data. The Joint External Evaluation for South Africa, conducted in November/December 2017, notes that "there is a well-established system for sharing information between the animal and human health sectors (though not currently in electronic format)". The JEE report notes that the Multi-Sectoral National Outbreak Response Team (MNORT) is a forum for information and that "updated zoonotic disease reporting is provided at monthly MNORT meetings by both human health and animal health staff, providing the opportunity for joint discussion and analysis of zoonotic risks and trends and related risk management and/or response measures". [1] There is no evidence that an electronic data sharing system has been developed since 2017 via the websites of the National Department of Health, the Department of Environmental Affairs or the National Laboratory Association South Africa. [2,3,4]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic Of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 7 August 2020.

[2] National Department of Health. "Homepage". [<http://www.health.gov.za/>]. Accessed 7 August 2020.

[3] Department of Environmental Affairs. "Homepage". [<https://www.environment.gov.za/>]. Accessed 7 August 2020.

[4] National Laboratory Association South Africa. "Homepage". [<http://www.nhls.ac.za/>]. Accessed 7 August 2020.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that South Africa publishes de-identified human and animal health surveillance data at least weekly, or that there is less than a month time lag before publication. The National Institute for Communicable Diseases (NICD), under the Department of Health (DOH), operates an online national notification system for reporting notifiable medical conditions (NMCs). Their website states that "Every doctor or nurse (health care provider) in both the public and private health sector who diagnoses a patient with any one of the NMC must report the case. Failure to report a NMC is a criminal offense." [1] and "The NICD work in close collaboration with the Provincial and National Departments of Health to detect and report timeously on communicable disease outbreaks." [2] But there is nothing specific about weekly reporting or time lags before publication. The Department of Agriculture, Land Reform and Rural Development (DALRRD) publishes data from animal disease surveillance monthly, but currently there is a three-month lag. [3] The 2018 Joint External Evaluation (JEE) states that "South Africa has developed capacity to report potential public health emergencies of national and international concern (PHEIC) to WHO and OIE through the established IHR national focal point (NFP) and OIE delegates, respectively." But there is no mention of weekly reporting or publication lag times. [4] There is no further information on these through the Ministry of Health, the Public Health Institute of South Africa (PHISA) or the National Health Laboratory Service (NHLS). [5,6,7]

[1] National Institute for Communicable Diseases (NICD). 2020. "NMC." [<https://www.nicd.ac.za/nmc-overview/notification-process/>]. Accessed 20 March 2021.

[2] NICD. [<https://www.nicd.ac.za/our-services/outbreak-response/>]. Accessed 20 March 2021.

[3] Department of Agriculture, Land Reform and Rural Development. 2020. "Animal Health: Disease Reporting Summaries." [<http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Animal-Health/Epidemiology/disease-reporting/Disease-Reporting-Summaries>]. Accessed 7 August 2020.

[4] World Health Organization (WHO). 2018. "Joint external evaluation (JEE) of IHR core capacities of the Republic of South Africa, Mission report: 27 November - 1 December 2017." [<https://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>].

[5] Ministry of Health. [<http://www.health.gov.za/press-statement/>]. Accessed 20 March 2021.

[6] Public Health Institute of South Africa PHISA. [<https://phisa.co.za/>]. Accessed 20 March 2021.

[7] National Health Laboratory Service (NHLS). [<https://nationalgovernment.co.za/units/view/251/national-health-laboratory-service-nhls>].

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that South Africa publishes de-identified health surveillance data on COVID-19, publicly available via daily reports on a government website. The National Institute for Communicable Diseases (NICD), under the Department of Health (DOH), operates an online national notification system for reporting notifiable medical conditions (NMCs). There is presently a National Covid-19 Daily report dashboard [1]

[1] National Institute for Communicable Diseases. 2020. "NMC." [<http://www.nicd.ac.za/index.php/nmc/>]. Accessed 7 August 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

South Africa does have laws and regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. The Protection of Personal Information Act, No 4 of 2013 requires the protection of personal information by public and private bodies. [1] All personal health information of persons treated in public or private health institutions (called health users) or held by medical schemes and managed healthcare organisations is confidential. [2]

[1] Government of South Africa. 2013. "Protection of Personal Information Act." [<http://www.gov.za/documents/protection-personal-information-act>]. Accessed 7 August 2020.

[2] Norton Rose Fulbright. 2014. "Protection of Personal Health Information in South Africa - Ten things to know." [<https://www.insurancegateway.co.za/download/9612>]. Accessed 7 August 2020.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of legislation, in South Africa, safeguarding the confidentiality of identifiable health information for individuals includes mention of protections from cyber attacks. The Protection of Personal Information Act 2013 includes a section on security safeguards. This requires responsible parties to take appropriate technical measures to prevent unauthorised destruction of, or access to, personal information. It requires a risk assessment and continual updating of safeguards in response to new risks or deficiencies in previous safeguards. The responsible party must have due regard for generally accepted information security practices which may apply to it. Section 32 of the Act relates to authorisation concerning data which includes a subject's health. [1]

[1] Government of South Africa. 2013. "Protection of Personal Information Act", [http://www.justice.gov.za/inforeg/docs/InfoRegSA-POPIA-act2013-004.pdf]. Accessed 7 August 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 0

There is insufficient publicly available evidence to show that South Africa has committed to sharing surveillance data, for more than one disease, with other African countries, including in a public health emergency.

Among the functions of the National Institute for Communicable Diseases (NICD) are to serve as "a resource of knowledge and expertise of communicable diseases to the South African Government, Southern African Development Community countries and the African continent", to "provide a reference function for communicable diseases laboratories in the public and private sectors, nationally, regionally and internationally." and to provide "the global health community with valuable communicable disease information". The Emergency Operations Center (EOC) supports the Government's International Health Regulations reporting responsibilities. However, public health emergency surveillance data is not specifically mentioned. [1] South Africa participates in the African Public Health Laboratories Network (APHLN), which provide lab assistance and information sharing during public health emergencies. [2]

The United Nations Office for Co-ordination of Humanitarian Affairs (OCHA) website states that South Africa has committed, via the African Union, to participate in the Southern Africa Regional Collaborating Centre (RCC) of the Africa Centres for Disease Control and Prevention (Africa CDC). Surveillance data is shared through a Regional Integrated Surveillance and Laboratory Network. "Africa CDC strengthens the capacity and capability of Africa's public health institutions as well as partnerships to detect and respond quickly and effectively to disease threats and outbreaks, based on data-driven interventions and programmes". The role of the RCCs is to improve surveillance, emergency response and prevention of infectious and non-communicable diseases. The Southern African RCC in Zambia aims to ensure that disease intelligence is shared regularly across borders. [3,4] South Africa is also committed to sharing surveillance data through the African Field Epidemiology Network (AFENET), though not specifically during a public health emergency. [5]

[1] National Institute for Communicable Diseases. 2020. [http://www.nicd.ac.za]. Accessed 7 August 2020.

[2] African Public Health Laboratories Network (APHLN). "What We Do." [http://www.aslm.org/what-we-do/aphln/]. Accessed 7 August 2020.

[3] United Nations Office for Co-ordination of Humanitarian Affairs (OCHA). "Southern Africa establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to Improve Surveillance, Emergency Response and Prevention of Infectious and Non-communicable Diseases". ReliefWeb. [https://reliefweb.int/report/world/southern-africa-establishes-africa-centres-disease-control-and-prevention-regional]. Accessed 7 August 2020.

[4] African Union/Africa CDC. "Regional Collaborating Centres." [https://africacdc.org/regional-collaborating-centres/]. Accessed 7 August 2020.

[5] African Field Epidemiology Network (AFENET). "About Us." [http://www.afenet.net/]. Accessed 7 August 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 no public evidence of a national system in place to provide support at the sub-national level to conduct contact tracing in the event of a public health emergency or to prepare for future public health emergencies. While contact tracing is included in contagious disease outbreak management, there is no specific mention of how this function will be scaled up or supported in that event. There are no references to this on any of the Department of Health, National Health Laboratory Service (NHLS) or the Public Health Institute of South Africa (PHISA) websites. [1,2,3]

[1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'.

[<https://sacoronavirus.co.za/2020/05/23/covid-19-testing-testing-isolation-quarantine-and-contact-tracing-are-key-tools-in-our-fight-against-covid-19/>]. Accessed 7 August 2020.

[2] National Health Laboratory Service (NHLS). 2020. [<http://www.nhls.ac.za>]. Accessed 7 August 2020.

[3] Public Health Institute of South Africa (PHISA). 2020. [<https://phisa.co.za/>]. Accessed 7 August 2020.

2.5.1b

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

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

Current Year Score: 0

There is no publicly available evidence that South Africa provides wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, particularly economic support (paycheck, job security) and medical attention. The Department of Employment and Labour has issued a Directive to the Compensation for Occupational Injuries and Diseases Act 1993, covering compensation for those who contracted the disease at work, but it only runs parallel to existing law, rather than providing extra benefits. [1] The National Institute for Communicable Diseases (NICD) 'Guidelines for Quarantine and Isolation in relation to COVID-19 exposure and infection' do not include any 'wraparound services'. Neither are these included in any of the websites of the Department of Health, National Health Laboratory Service (NHLS) or the Public Health Institute of South Africa (PHISA). [3,4,5]

[1] Department of Employment and Labour. 30 June 2020. Compensation for occupational injuries and diseases act 1993 Directive, Notice 387 of 2020. [https://www.gov.za/sites/default/files/gcis_document/202007/43540gen387.pdf]. Accessed 7 August 2020.

[2] National Institute for Communicable Diseases (NICD). 5 May 2020. 'Guidelines for Quarantine and Isolation in relation to COVID-19 exposure and infection'. [<https://www.nicd.ac.za/wp-content/uploads/2020/05/Guidelines-for-Quarantine-and->

Isolation-in-relation-to-COVID-19.pdf]. Accessed 7 August 2020.

[3] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'.

[https://sacoronavirus.co.za/2020/04/08/quarantine-information/]. Accessed 7 August 2020.

[4] National Health Laboratory Service (NHLS). 2020. [http://www.nhls.ac.za]. Accessed 7 August 2020.

[5] Public Health Institute of South Africa (PHISA). 2020. [https://phisa.co.za/]. Accessed 7 August 2020.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports (or other format) on government websites. Websites checked include those of the Department of Health, National Health Laboratory Service (NHLS), Public Health Institute of South Africa (PHISA) and National Institute for Communicable Diseases (NICD). [1,2,3,4]

[1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [https://sacoronavirus.co.za/information-about-the-virus-2/]. Accessed 7 August 2020.

[2] National Health Laboratory Service (NHLS). 2020. [http://www.nhls.ac.za]. Accessed 7 August 2020.

[3] Public Health Institute of South Africa (PHISA). 2020. [https://phisa.co.za/]. Accessed 7 August 2020.

[4] National Institute for Communicable Diseases (NICD). 5 May 2020. 'Guidelines for Quarantine and Isolation in relation to COVID-19 exposure and infection'. [https://www.nicd.ac.za/our-services/surveillance/]. Accessed 7 August 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no publicly available evidence of a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases for international travellers and trace and quarantine their contacts in the event of an active or future public health emergency. The Border Authority Management Act of 2020 only states that "there is a need for integrated and co-ordinated border management in accordance with the Constitution, international and domestic law, in order to protect the Republic from harmful and infectious diseases, pests and substances". It also states that there will be an Inter-Ministerial Consultative Committee including the Cabinet member responsible for Health. [1] The Department of Health in the 'Standard operating procedures for preparedness, detection and response to a coronavirus (2019-nCoV) outbreak in South Africa' document, states that for Detection and Reporting of suspected 2019-nCoV cases "Port of Entry (airport, land port, harbour): Port Health Official should consult with NICD (hotline) on whether case fits the case definition. EMS will be contacted for the management and transport of the passenger/patient to health

facility. Provincial Communicable Disease Control must be informed. Referral from Port Health (airport, land port, harbour) and public or private facility must be discussed with the Infectious Disease Specialist/NICD, EMS practitioner, local CDC Coordinator and Port Health." [2] There was no further evidence on the websites of the Department of Health, National Health Laboratory Service (NHLS) or Public Health Institute of South Africa (PHISA). [3,4,5]

[1] Border Authority Management Act No 2 of 2020. 21 July 2020. [<https://www.gov.za/documents/border-management-authority-act-2-2020-english-sepedi-21-jul-2020-0000>]. Accessed 7 August 2020.

[2] Department of Health. 30 January 2020. 'Standard operating procedures for preparedness, detection and response to a coronavirus (2019-nCoV) outbreak in South Africa'.

[https://www.hpcs.co.za/Uploads/Publications%202020/Resources/SOP_Coronavirus_29_Jan_2020.pdf]. Accessed 7 August 2020.

[3] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/information-about-the-virus-2/>]. Accessed 7 August 2020.

[4] National Health Laboratory Service (NHLS). 2020. [<http://www.nhls.ac.za>]. Accessed 7 August 2020.

[5] Public Health Institute of South Africa (PHISA). 2020. [<https://phisa.co.za/>]. Accessed 7 August 2020.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is an applied field epidemiology training program (such as FETP) available in country, but there is no evidence that the government provides resources to send citizens to another country to participate in applied epidemiology training programs. The South Africa Field Epidemiology Training Programme (SAFETP) was established in 2006 as a collaboration between the Department of Health, the National Institute of Communicable Diseases and the US Centers for Disease Control and Prevention (CDC). It leads to a Masters in Public Health degree from the University of Pretoria. [1] The University of Pretoria's Masters programme in Tropical Animal Health, under the Faculty of Veterinary Science, also includes a module in applied epidemiology. [2] The Joint External Evaluation report for South Africa, conducted in November-December 2017, notes that SAFETP offers both frontline and advanced field training and that in addition to the SAFETP offerings, there are also additional initiatives on field epidemiology training, including "a distance-based training programme on Health Information Management and Applied Epidemiology, started in 2016, which aims to increase the capacity of health personnel to generate and utilize facility-level data (for HIV, TB and sexually-transmitted infection indicators)". [3] There is no information via the websites of the Department of Health or the National Institute for Communicable Disease to suggest that the South African government provides resources to send citizens to another country to participate in applied epidemiology training programs [4,5].

- [1] African Field Epidemiology Network (AFENET). 2016. "AFENET Annual Report 2016." [http://www.afenet.net/index.php/resources/report/376-annual-report-2016]. Accessed 7 August 2020.
- [2] University of Pretoria. 2018. "Applied Epidemiology 804 (EPL804)". [http://www.up.ac.za/en/yearbooks/2018/pdf/module/EPL%20804]. Accessed 7 August 2020.
- [3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1]. Accessed 7 August 2020.
- [4] National Department of Health. "Homepage". [http://www.health.gov.za/]. Accessed 7 August 2020.
- [5] National Institute for Communicable Disease. "SAFETP". [http://www.nicd.ac.za/index.php/safetp/]. Accessed 7 August 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The available field epidemiology training programmes in South Africa are inclusive of animal health professionals. The South Africa Field Epidemiology Training Programme (SAFETP) was established in 2006 as a collaboration between the Department of Health, the National Institute of Communicable Diseases and the U.S. Centre for Disease Control and Prevention (CDC). It leads to a Masters in Public Health degree from the University of Pretoria. In 2016, the intake included both human and animal health professionals. [1] The University of Pretoria's Masters programme in Tropical Animal Health, under the Faculty of Veterinary Science, also includes a module in applied epidemiology. [2] The Joint External Evaluation for South Africa, conducted in November/December 2017, notes that "animal health staff were routinely involved in the cross-sectoral Field Epidemiology Training Program (FETP)." [3]

- [1] African Field Epidemiology Network (AFENET). 2016. "AFENET Annual Report 2016." [http://www.afenet.net/index.php/resources/report/376-annual-report-2016]. Accessed 7 August 2020.
- [2] University of Pretoria. 2018. "Applied Epidemiology 804 (EPL804)". [http://www.up.ac.za/en/yearbooks/2018/pdf/module/EPL%20804]. Accessed 7 August 2020.
- [3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1]. Accessed 7 August 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

South Africa has an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with epidemic or pandemic potential. The Department of Health published the "National guidelines on epidemic preparedness and response" in 2009 which serves as a multi-disease plan. [1] Examples of disease specific plans are the Departments 2020 'Standard Operating Procedure for preparation, detection and response to COVID 19' and the 2018 'National Public Health Emergency Response Plan Listeriosis'. [2,3] The Joint External Evaluation for South Africa, conducted in November/December 2017, notes that there are specific plans available for diseases including influenza and polio, and that "South Africa has myriad disease-specific national public health emergency and preparedness guidelines", such as for "viral haemorrhagic fevers, cholera, typhoid, food-borne illnesses and most recently plague".[4,5]

[1] Department of Health. 6 March 2009. 'National Guidelines on Epidemic Preparedness and Response'

[[https://www.knowledghehub.org.za/system/files/elibdownloads/2019-](https://www.knowledghehub.org.za/system/files/elibdownloads/2019-07/National%2520Guidelines%2520on%2520Epidemic%2520Preparedness%2520and%2520Response%2520.pdf)

[07/National%2520Guidelines%2520on%2520Epidemic%2520Preparedness%2520and%2520Response%2520.pdf](https://www.knowledghehub.org.za/system/files/elibdownloads/2019-07/National%2520Guidelines%2520on%2520Epidemic%2520Preparedness%2520and%2520Response%2520.pdf)]. Accessed 8 August 2020.

[2] Department of Health. 2020. 'Standard Operating Procedure for preparation, detection and response to COVID 19'

[https://www.hpcs.co.za/Uploads/Publications%202020/Resources/SOP_Coronavirus_29_Jan_2020.pdf]. Accessed 8 August 2020.

[3] Department of Health. 23 April 2018. National Public Health Emergency Response Plan Listeriosis 2017/18.

[<http://www.health.gov.za/index.php/component/phocadownload/category/439-listeriosis-minster-of-health-media-statement?download=2745:listeriosis-outbreak-emergency-response-plan>]. Accessed 8 August 2020.

[4] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[5] Department of Health. 2017. "National Influenza Policy and Strategic Plan."

[<http://www.health.gov.za/index.php/component/phocadownload/category/339-national-influenza-policy-and-strategy-plan?download=1900:national-influenza-policy-and-strategy-plan>]. Accessed 8 August 2020.

3.1.1b

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

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

Current Year Score: 0

There is no publicly available evidence that South Africa's overarching national public health emergency response plan has been updated in the last 3 years. The Department of Health published the "National guidelines on epidemic preparedness and response" in 2009 which serves as a multi-disease plan, but there is no evidence of updates. [1] There is no further information on the websites of the Ministry of Health or the National Disaster Management Centre (NDMC). [2,3] The Public Health Emergency Operations Centre (PHEOC) has no online presence.

[1] Department of Health. 6 March 2009. 'National Guidelines on Epidemic Preparedness and Response'.

[<https://www.idealhealthfacility.org.za/docs/Protocols/National%20Guidelines%20on%20Epidemic%20Preparedness%20and%20Response%20.pdf>]. Accessed 8 August 2020.

[2] Ministry of Health. [www.health.gov.za]. Accessed 26 August 2020.

[3] National Disaster Management Centre (NDMC). 2020. [<http://www.ndmc.gov.za/Pages/strategy.aspx#>]. Accessed 26 August 2020.

3.1.1c

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

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

Current Year Score: 0

There is no publicly available evidence that South Africa's overarching national public health emergency response plan includes considerations for paediatric and/or other vulnerable populations

The National guidelines on epidemic preparedness and response does mention target populations and populations at risk, but there are no specifics. [1]

[1] Department of Health. 6 March 2009. 'National Guidelines on Epidemic Preparedness and Response'.

[<https://www.idealhealthfacility.org.za/docs/Protocols/National%20Guidelines%20on%20Epidemic%20Preparedness%20and%20Response%20.pdf>]. Accessed 8 August 2020.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence to suggest that South Africa has a specific mechanism for engaging with the private sector to assist with outbreak emergency preparedness and response. The Disaster Management Act, 2002, requires the national disaster management framework to facilitate private sector involvement in disaster management. [1] Private sector involvement is reflected in general terms in the framework published by the National Disaster Management Centre (NDMC). However, neither the framework, nor any other resources on the NDMC website, provide evidence of linkage with the NICD's EOC, nor of mechanisms to include the private sector in disease outbreak preparedness or response. [2] Engaging with the private sector is mentioned in the Preparedness and Response Plan Novel Coronavirus, with one aim being to "Strengthen policy, governance and regulatory structures and mechanisms for IPC (Infection Prevention and Control); Engage with private sector and explore opportunities for 'Public Private Partnership Initiatives' in support of IPC. This is for a specific disease however and does not imply an overall mechanism on preparedness and response. [3] The Joint External Evaluation for South Africa, conducted in November/December 2017, makes no mention of a specific mechanism to engaging with the private sector to assist with outbreak emergency preparedness and response. There is no mention via the report of collaborations between the private sector and the Multi-sectoral National Outbreak Response Team (MNORT), the body responsible for coordinating surveillance, response and management of communicable disease outbreaks. [4] There is no evidence of a specific mechanism via the National Department of Health or the National Institute for Communicable Disease. [5,6]

[1] Government of South Africa. 2003. "Disaster Management Act No. 57 of 2002."

[<http://www.ifrc.org/docs/idrl/662EN.pdf>]. Accessed 8 August 2020.

[2] National Disaster Management Centre. N.d. "Introduction: A Policy Framework for Disaster Risk Management in South Africa." [<http://www.ndmc.gov.za/Frameworks/Disaster%20Management%20Framework.pdf>]. Accessed 8 August 2020.

[3] Department of Health. February 2020. 'Preparedness and Response Plan Novel Coronavirus'

[https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 8 August 2020.

[4] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[5] National Department of Health. 2020. [<http://www.health.gov.za/>]. Accessed 8 August 2020.

[6] National Institute for Communicable Disease. 2020. [<http://www.nicd.ac.za/>]. Accessed 8 August 2020.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 1

There is some evidence that South Africa has a policy, plan or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic for only one disease. The National Institute for Communicable Disease (NICD) website has a section dedicated to COVID-19 which contains advice on NPIs (although that title is never used). The advice is disease specific, however, and there are no specific criteria. [1] The Department of Health issued the 'National Infection Prevention and Control Strategic Framework' in March 2020. The document only refers to various Infection Prevention and Control (IPC) techniques, without procedure specifics or specific criteria for implementation of NPIs. [2] Likewise the Department of Health's 'National Guidelines on Epidemic Preparedness and Response', which only refers to generalised IPCs. [3] The Minister for Cooperative Governance and Traditional Affairs (CoGTA), in terms of section 3 of the Disaster Management Act, issued new regulations in response to the outbreak of COVID-19 virus on 19 March 2020. These included many NPIs, but all were COVID-19 specific. [4] The National Disaster Management Centre's Policy Framework for Disaster Risk Management makes no mention of NPIs. [5]

[1] National Institute for Communicable Disease. 2020. 'COVID-19 prevention'. [<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-prevention/>]. Accessed 8 August 2020.

[2] Department of Health. 26 March 2020. 'National Infection Prevention and Control Strategic Framework'. [<https://www.nicd.ac.za/wp-content/uploads/2020/04/National-Infection-Prevention-and-Control-Strategic-Framework-March-2020-1.pdf>]. Accessed 8 August 2020.

[3] Department of Health. 6 March 2009. 'National Guidelines on Epidemic Preparedness and Response'. [<https://www.idealhealthfacility.org.za/docs/Protocols/National%20Guidelines%20on%20Epidemic%20Preparedness%20and%20Response%20.pdf>]. Accessed 8 August 2020.

[4] National Disaster Management Centre. 19 March 2020. 'Regulations issued in terms of the Disaster Management Act, 2002' [<http://www.ndmc.gov.za/MediaStatements/Media%20Statement%20on%20Coronavirus.pdf>]. Accessed 8 August 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

South Africa activated their national emergency response plan for COVID-19 on 31 January 2020. [1] There is no publicly available evidence that a national-level biological threat-focused exercise (either with the World Health Organization (WHO) or separately) was completed in the last year. There was no information on this on the websites of the World Health Organisation, the Ministry of Health or the National Disaster Management Centre. [2,3,4]

[1] South African Government News Agency. 31 January 2020. 'SA activates Coronavirus emergency operations centre'. [<https://www.sanews.gov.za/south-africa/sa-activates-coronavirus-emergency-operations-centre>]. Accessed 8 August 2020.

[2] World Health Organization (WHO). 2020. 'Strategic Partnership for International Health Regulations (2005) and Health

Security (SPH)'. [<https://extranet.who.int/sph/simulation-exercise>]. or WHO Country page [<https://www.afro.who.int/countries/south-africa>]. Accessed 8 August 2020.

[3] Ministry of Health. 2020. [www.health.gov.za]. Accessed 26 August 2020.

[4] National Disaster Management Centre (NDMC). 2020. [<http://www.ndmc.gov.za/Pages/strategy.aspx#>]. Accessed 26 August 2020.

3.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence that South Africa has, in the past year, identified a list of gaps and best practices in response, either to an infectious disease or a biological-threat focused exercise, and developed a plan to improve response capabilities. A Centre for Strategic and International Studies (CSIS) article from May 2020 highlights learnings from the COVID-19 pandemic, but there is no mention of plans being made from these. [1] As of August 2020, World Health Organisation (WHO) lists South Africa as a country that does have an After-Action Review planned, but none have been completed. [2] The WHO country page for South Africa has nothing further, [3] There is no further evidence of other after-action reviews or best practice planning on the websites of the Department of Health, the National Institute of Communicable Diseases (NICD) or Department of Agriculture, Land Reform and Rural Development. [4,5,6]

[1] Devermont,J and Mukulu,T. 12 May 2020. 'South Africa's Bold Response to the Covid-19 Pandemic'. Centre for Strategic and International Studies (CSIS). [<https://www.csis.org/analysis/south-africas-bold-response-covid-19-pandemic>]. Accessed 8 August 2020.

[2] World Health Organisation (WHO). "Strategic Partnership Portal: After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 8 August 2020.

[3] WHO South Africa country page. 2020. [<https://www.afro.who.int/countries/south-africa>]. Accessed 8 August 2020. 4] Department of Health. [<http://www.health.gov.za>]. Accessed 8 August 2020.

[5] National Institute for Communicable Disease. [<http://www.nicd.ac.za>]. Accessed 8 August 2020.

[6] Department of Agriculture, Land Reform and Rural Development. 2020. [<https://www.dalrrd.gov.za/>]. Accessed 8 August 2020.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has, in the past year, undergone a national-level biological threat-focused exercise that has included private sector representatives. There is no information on the WHO International Health Regulations portal or Simulation Exercise page. [1, 2] The WHO country page for South Africa has nothing further. [3] There is

no further evidence of such an exercise on the websites of the Department of Health, the National Institute of Communicable Diseases (NICD) or the Department of Agriculture, Land Reform and Rural Development. [4,5,6]

[1] World Health Organisation (WHO). "Strategic Partnership Portal: Simulation Exercise".

[<https://extranet.who.int/sph/simulation-exercise>]. Accessed 8 August 2020.

[2] World Health Organization (WHO). 2020. 'International Health Regulations (IHR)'. [<https://www.who.int/ihr/about/en/>]. Accessed 8 August 2020.

[3] WHO South Africa country page. 2020. [<https://www.afro.who.int/countries/south-africa>]. Accessed 8 August 2020.

[4] Department of Health. [<http://www.health.gov.za>]. Accessed 8 August 2020.

[5] National Institute for Communicable Disease. [<http://www.nicd.ac.za>]. Accessed 8 August 2020.

[6] Department of Agriculture, Land Reform and Rural Development. 2020. [<https://www.dalrrd.gov.za/>]. Accessed 8 August 2020.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1, No = 0

Current Year Score: 1

South Africa does have an Emergency Operations Centre. The Joint External Evaluation for South Africa, conducted in November/December 2017, finds that the country established its Public Health Emergency Operations Centre (PHEOC) during the Ebola virus disease outbreak in West Africa to coordinate activities required for preparedness against that virus.

[1] The National Institute for Communicable Diseases (NICD) "Annual Overview 2015/16" states "During the past year, the division continued to expand significantly and now includes a Data Management Unit and an Emergency Operations Centre (EOC) to respond to public health emergencies." [2]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[2] National Institute for Communicable Diseases (NICD). 2016. 'Annual Overview 2015/16'.

[https://www.nicd.ac.za/assets/files/NICD_Annual_Report_2016.pdf]. Accessed 8 August 2020.

3.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that the Emergency Operation Centre (EOC) is required to conduct a drill at least once a year. The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, notes that an exercise of the Public Health Emergency Operations Centre (PHEOC) has never been conducted and there is no requirement to conduct a drill at least once per year. [1] There is no evidence via the National Institute for Communicable Disease (the centre where the PHEOC is located) or the Department of Health of a requirement for an annual drill. [2,3] There is no mention of drills in the

Department of Health Annual report for 2018-19. [4]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 8 August 2020.

[2] Department of Health. [<http://www.health.gov.za>]. Accessed 8 August 2020.

[3] National Institute for Communicable Disease. [<http://www.nicd.ac.za>]. Accessed 8 August 2020.

[4] Department of Health. March 2019. 'Annual report 2018-19'. [https://www.gov.za/sites/default/files/gcis_document/201911/health-annual-report.pdf]. Accessed 8 August 2020.

3.3.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient public evidence to show that the EOC can conduct, or has conducted within the last year, a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario. The Joint External Evaluation for South Africa, conducted in November/December 2017, states as a strength that the PHEOC has demonstrated its capacity by being activated in less than 120 minutes to support coordination of response to an emergency. [1] There is no further information available on the websites of the Department of Health or National Institute for Communicable Diseases (NICD) website. [2,3]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[2] Department of Health. [<http://www.health.gov.za>]. Accessed 8 August 2020.

[3] National Institute for Communicable Diseases (NICD). 2020. Public Health Surveillance and Response Division. [<https://www.nicd.ac.za/centres/division-of-public-health-surveillance-and-response/>]. Accessed 8 August 2020.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

South Africa does have publicly available standard operating procedures between the public health and security authorities to respond to a potential deliberate biological event, but there is no public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event. Per the Joint External Evaluation for South Africa, conducted in November/December 2017, the National Joint Operational and Intelligence Structure (NATJOINTS) is the national coordinating body responsible for responding to all major incidents in South Africa, including biological, chemical and radio-nuclear threats. NATJOINTS consists of the "South African Police Service, South African National Defence Force, Metro Police, intelligence agencies and representatives of various government departments including health." It plays a coordination role for different stakeholders in responding to incidents and has strong links with the Department of Health and the Department of Agriculture, Land Reform and Rural Development (DALRRD). The JEE report states that "there is a clearly defined collaboration, coordination and communication mechanism in place." and cites conducting exercises and simulations as a priority action. [1] Neither the Ministry of Health or the National Disaster Management Centre (within the Ministry of Co-operative government and Traditional Affairs) websites contain details of having carried out an exercise to respond to a potential deliberate biological event. [2,3]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[2] Ministry of Health. [www.health.gov.za]. Accessed 8 August 2020.

[3] Ministry of Co-operative government and Traditional Affairs. 2020. 'National Disaster Management Centre'. [<http://www.ndmc.gov.za/Pages/Home-Page.aspx>]. Accessed 8 August 2020.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The risk communication plan does outline how messages will reach populations and sectors with different communications needs. South Africa has a Government Communication Strategy on COVID19 document which contains all details necessary for the comprehensive dispersal of important public health news. [1] The Joint External Evaluation for South Africa, conducted in November/December 2017, states that there is proactive public outreach on a mix of platforms (newspapers, radio, TV, social media and the web), as appropriate, according to national and local preferences; and in relevant national and local languages and otherwise understandable to populations. Also stated is that "During outbreaks, there are meetings with village leaders to assist with public health risk communication to reach marginalized communities in their local language." [2] The National Institute for Communicable Diseases (NICD) website states that it "aims to give you access to important information tools relevant to the outbreak of COVID-19. The page will serve as an evolving resource center for communicators and others who wish to share with their communities' accurate and helpful information." [3]

[1] Government Communications. 28 April 2020. 'Government Communication Strategy on COVID19'.

[https://static.pmg.org.za/200508GClS_Final_Presentation.pdf]. Accessed 8 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[3] National Institute for Communicable Diseases (NICD). 2020. 'COVID-19 Communication Resources'.
[<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-communication-resources/>]. Accessed 8 August 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 1

South Africa does have in place a risk communication plan that is specifically intended for use during a public health emergency. The National Institute for Communicable Diseases (NICD) website states that it "aims to give you access to important information tools relevant to the outbreak of COVID-19. The page will serve as an evolving resource center for communicators and others who wish to share with their communities' accurate and helpful information." [1] According to the Joint External Evaluation for South Africa, conducted in November/December 2017, South Africa "has national response plans with specified risk communication sections, emergency risk communication plans, and shared agreements with response agencies." The report notes, however, that there is a need to develop a national-level risk communication plan. The report does not specify the names of the documents. [2]

[1] National Institute for Communicable Diseases (NICD). 2020. 'COVID-19 Communication Resources'.

[<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-communication-resources/>]. Accessed 8 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that South Africa designates a specific position within the government to serve as the primary spokesperson to the public during a public health emergency.

There is no mention of a specific position serving as primary spokesperson in any of the websites of the National Institute for Communicable Diseases (NICD), the Joint External Evaluation of IHR Core Capacities of the Republic of South Africa, 2017, the Department of Health dedicated coronavirus site or in a summary on the National Coronavirus Command Council in a News24 article, dated 13 May 2020. [1,2,3,4]

[1] National Institute for Communicable Diseases (NICD). 2020. 'COVID-19 Communication Resources'.

[<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-communication-resources/>]. Accessed 8 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of The Republic of South Africa".

[<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 8 August 2020.

[3] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'.

[<https://sacoronavirus.co.za/2020/04/08/quarantine-information/>]. Accessed 7 August 2020.

[4] Hunter,Quaanitah. 13 May 2020. 'What exactly is the National Coronavirus Command Council?'. News24.

[<https://www.news24.com/news24/southafrica/news/explainer-what-exactly-is-the-national-coronavirus-command-council-20200513>]. Accessed 8 August 2020.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 2

There is publicly available evidence that the public health system has, within the past year, actively shared messages via online media platforms (eg social media, website) to inform the public about ongoing public health concerns and/or dispel rumours, misinformation or disinformation. The government uses official websites and social media to inform the public about disease outbreaks including public health emergencies. The National Institute for Communicable Diseases (NICD) issues disease outbreak alerts via its website, Facebook page and Twitter account. [1,2,3] During the current COVID-19 pandemic, daily updates are issued via a dedicated Department of Health portal. [4] Twitter and Facebook were also used to update on the spread of listeriosis in the country in 2018. The Joint External Evaluation for South Africa, conducted in November/December 2017, finds that there is proactive public outreach on a mix of platforms. The report also notes that social media is also monitored for rumours, allowing authorities to be able to mitigate false public health information as soon as it is discovered. [5]

[1] National Institute for Communicable Diseases. 2020. "Media - Alerts." [<https://www.nicd.ac.za/media/alerts/>]. Accessed 9 August 2020.

[2] National Institute for Communicable Diseases. 2020. [<https://www.facebook.com/pages/category/Government-Organization/National-Institute-for-Communicable-Diseases-243556293124846/>]. Accessed 9 August 2020.

[3] National Institute for Communicable Diseases. 2018. "NICID". [https://twitter.com/nicd_sa]. Accessed 9 August 2020.

[4] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/>]. Accessed 7 August 2020.

[5] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 7 August 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 publicly available evidence that senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases within the past 2 years. The government introduced law that makes the spreading of misinformation or 'fake news' a prosecutable offence. [1] There is website and a Whatsapp number for reporting fake news. [2] There is no evidence in the media of the president or his ministers having shared misinformation or disinformation on diseases in the last 2 years. [3]

[1] South African Government. 15 April 2020. 'Government monitors and responds to misinformation and fake news during coronavirus covid-19 lockdown.' [<https://www.gov.za/speeches/government-monitors-and-responds-misinformation-and-fake-news-during-coronavirus-covid-19>]. Accessed 9 August 2020.

[2] South African Government. 2020. 'Fake news - Coronavirus COVID-19'. [<https://www.gov.za/coronavirus/fakenews>]. Accessed 9 August 2020.

[3] News24. 15 March 2020. 'CORONAVIRUS LIES Debunking the hoaxes around Covid-19'.

[<https://www.news24.com/news24/southafrica/news/dettol-garlic-and-fake-cases-in-north-west-cape-debunking-the-hoaxes-lies-around-coronavirus-20200306>]. Accessed 9 August 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: 56.17

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: 165.6

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: 15.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0, No = 1

Current Year Score: 1

There is insufficient publicly available evidence to indicate that South Africa issued a restriction, in the past year, without international/bilateral support, on the export/import of medical goods (eg: medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak. A Baker McKenzie report states that the Department of Trade and Industry (DTA) introduced new export control measures on Friday, 27 March 2020. These measures will remain in operation until further notice. "In terms of the COVID-19 Export Control Regulation (COVID-19 Regulation), goods listed in Schedule 4 shall not be exported from the Republic of South Africa except by virtue of an export permit issued by ITAC." There is, however, no evidence of refusal of international/bilateral support. [1] No further evidence of such restrictions, without international/bilateral support, could be found on the websites of the Ministries of Health, Agriculture, Land Reform and Rural Development (DALRRD), International Relations and Cooperation (DIRCO) or the National Institute for Communicable Diseases (NICD). [2,3,4,5]

[1] Baker McKenzie. 1 April 2020. 'New Export Control Regulations in South Africa (COVID-19)'.
[<https://www.bakermckenzie.com/en/insight/publications/2020/04/new-export-control-regulations-sa-covid19>]. Accessed 9 August 2020.

[2] Ministry of Health. 2020. [www.health.gov.za]. Accessed 9 August 2020.

[3] Ministry of Health. 2020. [www.health.gov.za]. Accessed 9 August 2020.

[3] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 9 August 2020.

[4] Ministry of International Relations and Cooperation (DIRCO). 2020. [<http://www.dirco.gov.za/>]. Accessed 9 August 2020.

[5] National Institute for Communicable Diseases. 2020. 'Media - News'. [<https://www.nicd.ac.za/media/news/>]. Accessed 9 August 2020.

August 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 publicly available evidence that South Africa 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. No further evidence of such restrictions, without international/bilateral support, could be found on the websites of the Ministries of Health, Agriculture, Land Reform and Rural Development (DALRRD), International Relations and Cooperation (DIRCO), Department of Trade, Industry and Competition or the National Institute for Communicable Diseases (NICD). [1,2,3,4] There is also no evidence on the World Health Organisation (WHO) Disease Outbreak News or the World Organisation for Animal Health (OIE) Weekly disease information. [5,6]

[1] Ministry of Health. 2020. [www.health.gov.za]. Accessed 9 August 2020.

[2] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [https://www.dalrrd.gov.za/]. Accessed 9 August 2020.

[3] Ministry of International Relations and Cooperation (DIRCO). 2020. [http://www.dirco.gov.za/]. Accessed 9 August 2020.

[4] Department of Trade, Industry and Competition. 2020. [https://www.gov.za/departments-trade-and-industry-dti]. Accessed 9 August 2020.

[5] World Health Organisation. 2020. "Disease Outbreak News (DONs)". [http://www.who.int/csr/don/en/]. Accessed 9 August 2020.

[6] World Organisation for Animal Health (OIE). 2020. "Weekly Disease Information". [https://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 9 August 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: 1

There is no publicly available evidence that South Africa has, in the past year, implemented a ban, without international/bilateral support, on travellers arriving from a specific country or countries due to an infectious disease outbreak. The South African government website has no record of such a ban. [1] The international travel group World Nomads has no information on bans that lack support. [2] The same is true for all of the Ministry of Health, the Ministry of Agriculture, Land Reform and Rural Development (DALRRD), the Ministry of International Relations and Cooperation (DIRCO) (previously Foreign Affairs) and the World Health Organisation Disease Outbreak News portal. [3,4,5,6]

[1] South African government. 2020. 'Travel - Coronavirus COVID-19'. [https://www.gov.za/Coronavirus/travel]. Accessed 9 August 2020.

[2] World Nomads. 4 August 2020. 'Coronavirus (COVID-19) travel restrictions in South Africa'.

[<https://www.worldnomads.com/travel-safety/southern-africa/south-africa/latest-south-africa-travel-warnings-alerts>]. Accessed 9 August 2020.

[3] Ministry of Health. 2020. [www.health.gov.za]. Accessed 9 August 2020.

[4] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 9 August 2020.

[5] Ministry of International Relations and Cooperation (DIRCO). 2020. [<http://www.dirco.gov.za/>]. Accessed 9 August 2020.

[5] World Health Organisation. 2020. "Disease Outbreak News (DONs)". [<http://www.who.int/csr/don/en/>]. Accessed 9 August 2020.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 90.54

2017

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 130.78

2017

WHO; national sources

4.1.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient publicly available evidence that South Africa has a public workforce strategy in place (which has been updated in the past five years) to identify fields where there is an insufficient workforce, and strategies to address these shortcomings. In 2012 South Africa developed a strategy for human resources for health to "implement a re-engineered primary healthcare service and ensure the service capacity for a health system with improved financing through national health insurance". The report states that "The ambitious plans launched in 2012 to expand the workforce in the Human Resources for Health (HRH) Strategy 2012-2017 is currently being evaluated and updated for implementation in the next five years." There is, however, no evidence of an update. [1,2] The Department of Health's annual reports include a section on human resources. The 2018/19 report (latest report) refers to an ongoing "Workforce Development and Planning Sub-Programme" which is responsible for effectively articulating human resource needs and optimising the performance of the health workforce to achieve the strategic goals of the National Health System. [3] A June 2019 article in the African Journal of Primary Health Care & Family Medicine states in its conclusion that "the latest HRH (Human Resources for Health) policies fall short in that there is disjuncture between them and that they are not translated into synchronised strategic plans to produce sufficient numbers and more equitable distribution of HCWs (Health Care Workers)." [4]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 9 August 2020.

[2] Department of Health. 11 October 2011. "Human Resources for Health South Africa: HRH Strategy for the Health Sector, 2012/13-2016/17." [<https://www.gov.za/documents/human-resources-health-south-africa-hrh-strategy-health-sector-201213-201617>]. Accessed 9 August 2020.

[3] Department of Health. 2017. "Annual Report 2018/19". [https://www.gov.za/sites/default/files/gcis_document/201911/health-annual-report.pdf]. Accessed 9 August 2020.

[4] African Journal of Primary Health Care & Family Medicine. 24 June 2019. 'Towards national health insurance: Alignment of strategic human resources in South Africa'. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6620557/>]. Accessed 9 August 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 230.0

2010

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that South Africa has the capacity to isolate patients with highly communicable diseases in a bio-containment patient care unit and/or patient isolation facility. The Department of Health (DOH) guidance on viral haemorrhagic fevers outlines the minimum requirements for patient isolation in hospitals. It states that "all nosocomial infections [in the country] occurred before the patients were placed under conditions of isolation precautions", implying that isolation facilities are adequate. However this capacity is severely limited. [1] The largest hospital in South Africa, the Chris Hani Baragwanath hospital, does have patient isolation facilities, which have been used in the past to control the spread of tuberculosis. [2,3] Tygerberg Hospital also has the capacity for isolation wards, which have been used in the past. [4] When questioned about how prepared the country was for an Ebola outbreak in 2014, the DOH said, however, that only central hospitals (there are ten designated central hospitals in South Africa. [5]) had state-of-the-art infection control equipment, including isolation wards, so any Ebola patients in other public or private health facilities would need to be transferred to a central hospital. [6] A study reported on in OpenUCT, 2016, to determine whether the isolation rooms (IRs) in emergency centres (in the Cape Town metropolitan area), for patients with diagnosed or suspected TB, complied with set National Core Standards with regards to air changes per hour (ACH), negative pressure ventilation. The study found that although none of the 19 evaluated complied with the National Core Standard's ideal requirements for IRs, 5 did comply with minimal requirements and 11 IRs were designed to have negative pressure. [7]

[1] Department of Health. 2015. "National Guidelines for Recognition and Management of Viral Haemorrhagic Fevers." [https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEWji0lyvy5HZAhUKLcAKHa5kBOUQFggpMAA&url=http%3A%2F%2Fwww.health.gov.za%2Findex.php%2Fcomponent%2Fphocadownload%2Fcategory%2F277-ebola%3Fdownload%3D1164%3Avhf-guideline-final-7-dec-2015&usg=AOvVaw27nzivX_z_dcnTLn0Gc3qC]. Accessed 9 August 2020.

[2] Chris Hani Baragwanath Hospital. "Homepage". [https://www.chrishanibaragwanathhospital.co.za/]. Accessed 9 August 2020.

[3] News24. 2008. "Bara patient A Medi-Clinic Worker". [https://www.news24.com/SouthAfrica/News/Bara-patient-a-Medi-Clinic-worker-20081007]. Accessed 9 August 2020.

[4] Western Cape Government. 2010. "Tygerberg Hospital Extends Measles Isolation Ward as Numbers Climb". [https://www.westerncape.gov.za/news/tygerberg-hospital-extends-measles-isolation-ward-numbers-climb]. Accessed 9 August 2020. Accessed 18 November 2018.

[5] Government of South Africa. 2012. "National Health Act 2003: Regulations Relation to Categories of Hospitals (No. R. 185)".

[https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEWj6297v0pHZAhUTSsAKHQhSCowQFggpMAA&url=http%3A%2F%2Fwww.health.gov.za%2Findex.php%2F2014-03-17-09-09-38%2Flegislation%2Fjoomla-split-menu%2Fcategory%2F84-2012r%3Fdownload%3D138%3Aregulations-relating-to-categories-of-hospitals-r185-2012&usg=AOvVaw3GspwLKgiR5anTj0A7bgFI]. Accessed 9 August 2020.

[6] Thelwell, E. 2014. "How Prepared is South Africa for an Ebola outbreak?", Health 24, 8 Aug 2014. [https://www.health24.com/Medical/infectious-diseases/Ebola/How-prepared-is-South-Africa-for-an-Ebola-outbreak-20140801]. Accessed 9 August 2020.

[7] OpenUCT theses, dissertations. 2016. 'An evaluation of the compliance to the ventilation aspects of airborne infectious disease control in Cape Town, South Africa'. [https://open.uct.ac.za/handle/11427/23398]. Accessed 9 August 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 publicly available evidence that South Africa has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years. The 2020 National preparedness and response plan - Novel coronavirus, contains much direction on increasing capacity of existing isolation facilities, setting up new units and even deployment of mobile isolation facilities to handle the massive increase in cases requiring isolation due to the Covid19 pandemic. [1] An example of rapid expansion of facilities is described in a Businessstech article, dated 18 January 2021. A new 300 bed unit for Covid-19 patients was handed over to the Gauteng Department of Health in November 2020, having been completed in only 5 months. [2]

[1] Department of Health. February 2020. National preparedness and response plan Novel coronavirus.

[https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 20 March 2021. [] Businessstech. 18 January 2021. "A look at South Africa's new Covid-19 'module' facility – which was built in just months". [<https://businessstech.co.za/news/business/461602/a-look-at-south-africas-new-covid-19-module-facility-which-was-built-in-just-months/>]. Accessed 20 March 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 1

South Africa has a national procurement protocol, in accordance with Treasury's procedures, which can be utilized by the Departments of Health (DOH) and Agriculture, Land Reform and Rural Development (DALRRD) for the acquisition of laboratory for routine needs. There are procurement portals on the websites for the DOH, DALRRD and the National Health Laboratory Service (NHLS). Procurement occurs through a public tender process and details on current and past tenders are available online. [1,2,3] There is evidence both via the DALRRD and NHLS of previous awarded tenders for the supply of laboratory needs. [2,3] The Joint External Evaluation for South Africa, conducted in November/December 2017, notes that this procurement system does need to be strengthened. [4]

[1] Department of Health. 2020. "Tenders". [<http://www.health.gov.za/index.php/2015-05-15-12-36-34>]. Accessed 9 August 2020.

[2] National Health Laboratory Service. 2020. "Supply chain". [<https://www.nhls.ac.za/supply-chain/>]. Accessed 9 August 2020.

[3] Department of Agriculture, Land Reform and Rural Development "Tenders". [<https://www.dalrrd.gov.za/Tenders>]. Accessed 9 August 2020.

[4] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 9 August 2020.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 2

South Africa does have a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. The Joint External Evaluation for South Africa (JEE), conducted in November/December 2017, notes as a strength that "A system is in place to ensure availability of stockpiles when required (e.g. personal protective equipment and vaccines are kept in strategic areas at national and provincial levels, including in the private sector)." The country has experience in importing pharmaceuticals using the Medicines and Related Substances Act 101 of 1965, Section 2. There is demonstrated capacity, an experienced workforce and functional systems in place to manage domestic distribution of medicine. Domestic capacity to produce antibiotics and medical supplies and equipment is also present. [1, 2, 3]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 9 August 2020.

[2] National Institute for Communicable Diseases. 2020. "Outbreak Response," [<https://www.nicd.ac.za/our-services/outbreak-response/>]. Accessed 9 August 2020.

[3] National Institute for Communicable Diseases. 2017. "Annual Review 2017/18." [https://www.nicd.ac.za/wp-content/uploads/2019/05/NICD_Annual-Review_2017-18.pdf]. Accessed 9 August 2020.

4.2.2b

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

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

Current Year Score: 0

There is insufficient evidence that South Africa has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The Joint External Evaluation of 2017 states that the country has capacity to produce vaccines and laboratory supplies and equipment for public emergencies, but there is no mention of these being stockpiled.

[1] South Africa was capable of testing for COVID-19 at the beginning of the current pandemic, but articles in News24 and Medical Brief do, however, highlight that demand for laboratory supplies outstripped supply. [2, 3,4] There was no further evidence of laboratory supply stockpiles on the websites of the ministries of Health or Defence, or National Disaster Management Centre (NDMC) or South African Health Products Regulatory Authority (SAHPRA). [5,6,7,8]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 12 September 2020.

[2] Reliefweb. 20 February 2020 [<https://reliefweb.int/report/world/more-20-african-countries-can-now-test-coronavirus-disease>]. Accessed 26 August 2020.

[3] Tomlinson, Catherine. 6 May 2020. 'Manufacturers behind SA's struggle to access adequate Covid-19 test materials.' News24. [<https://www.news24.com/citypress/news/manufacturers-behind-sas-struggle-to-access-adequate-covid-19-test>]

materials-20200505]. Accessed 26 August 2020.

[4] Medical Brief. 3 June 2020. 'Mkhize: SA faces a critical shortage of test kits and reagents'.

[<https://www.medicalbrief.co.za/archives/mkhize-sa-faces-a-critical-shortage-of-test-kits-and-reagents/>]. Accessed 26 August 2020.

[5] Ministry of Health. [www.health.gov.za]. Accessed 12 September 2020.

[6] Ministry of Defence and Military Veterans. [<http://www.dod.mil.za/>]. Accessed 12 September 2020.

[7] National Disaster Management Centre (NDMC). [<http://www.ndmc.gov.za/Pages/Home-Page.aspx>] Accessed 15 September 2020.

[8] South African Health Products Regulatory Authority (SAHPRA). [<https://www.sahpra.org.za/>] Accessed 15 September 2020.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available 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. No information on checking of stockpiles can be found through any of; the Ministry of Health, the Ministry of Defence and Military Veterans, the National Disaster Management Centre (NDMC), the South African Health Products Authority (SAHPRA) or in the 2018 Joint external evaluation (JEE). [1,2,3,4,5]

[1] Ministry of Health. [www.health.gov.za]. Accessed 20 March 2021.

[2] Ministry of Defence and Military Veterans. [<http://www.dod.mil.za/>]. Accessed 20 March 2021.

[3] National Disaster Management Centre (NDMC). [<http://www.ndmc.gov.za/Pages/Home-Page.aspx>]. Accessed 20 March 2021.

[4] South African Health Products Authority (SAHPRA). [<https://www.sahpra.org.za/>]. Accessed 20 March 2021.

[5] World Health Organization (WHO). 2018. "Joint external evaluation (JEE) of IHR core capacities of the Republic of South Africa, Mission report: 27 November - 1 December 2017. [<https://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 20 March 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 0

There is insufficient publicly available evidence of a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (eg: MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency or evidence of a plan/mechanism to procure these same supplies for national use during a public health emergency.

While there is evidence of companies within South Africa having manufacturing capacity, it is not clear that there are government protocols for leveraging this capacity during a response. One example of local manufacturing capacity is described in an Organisation for Economic Co-operation and Development (OECD) report, dated June 2020 [1] The African Union (AU) Chairperson, Cyril Ramaphosa, President of South Africa, launched the 'Africa Medical Supplies Platform' (AMSP), on 19 June 2020, "adopted as a single online marketplace to enable the supply of COVID-19-related critical medical equipment in Africa." "The AMSP unlocks immediate access to an African and global base of vetted manufacturers and procurement strategic partners and enables AU Member States to purchase certified medical equipment such as diagnostic kits, PPE and clinical management devices with increased cost effectiveness & transparency. The platform serves as a unique interface enabling volume aggregation, quota management, payment facilitation as well as logistics and transportation to ensure equitable and efficient access to critical supplies for African governments." [2] The Joint External Evaluation for South Africa, conducted in November/December 2017, states "With regard to medical countermeasures, South Africa has a legal framework to import and distribute medications using the Medicines and Related Substances Act 101 of 1965." and "The country also maintains a stockpile of medical countermeasures for national use during a public health emergency and capacity to produce vaccines and laboratory supplies and equipment." [3] No other evidence of these capacities could be found in the websites of the Ministries of Health or Defence or the South African Health Products Regulatory Authority (SAHPRA). [4,5,6]

[1] The Organisation for Economic Co-operation and Development (OECD). 23 June 2020. 'Africa's Response to COVID-19: What roles for trade, manufacturing and intellectual property?'. [<http://www.oecd.org/coronavirus/policy-responses/africa-s-response-to-covid-19-what-roles-for-trade-manufacturing-and-intellectual-property-73d0dfaf/>]. Accessed 26 August 2020.

[2] South African government. 19 June 2020. 'Speeches'. [<https://www.gov.za/speeches/president-ramaphosa-launches-africa-medical-supplies-platform-help-fight-covid-19>]. Accessed 10 August 2020.

[3] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 9 August 2020.

[4] Ministry of Health. [www.health.gov.za]. Accessed 23 August 2020.

[5] Ministry of Defence and Military Veterans. [<http://www.dod.mil.za/>]. 23 August 2020.

[6] The South African Health Products Regulatory Authority (SAHPRA). [<https://www.sahpra.org.za/>]. 23 August 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 publicly available evidence of either a capacity to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) or a mechanism to procure laboratory supplies for national use during a public health emergency. While the 2018 Joint External Evaluation states that South Africa does have capacity to produce vaccines and laboratory supplies and equipment, it does not confirm any plan/agreement to leverage this capacity in the case of a public health emergency. [1] An Investec article on South Africa's healthcare system and the COVID-19 pandemic quotes Minister of Health Zweli Mkhize as saying "As a country we are now facing a challenge with the global shortage of testing reagents. We understand it is becoming a challenge to many other countries. We are, however, continuing our efforts to

secure these reagents from different suppliers all over the world." Comments quoted from Dr Max Rath included "the government must continue to address other pressing issues that threaten to throttle supply. Open and clear communication between frontline workers and the administrators ordering PPE or other requirements is vital." [2] No further information on these could be found through any of; the Ministry of Health, the Ministry of Defence and Military Veterans, the National Disaster Management Centre (NDMC) or the South African Health Products Authority (SAHPRA). [3,4,5,6]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 9 August 2020.

[2] Investec. 13 Jul 2020. 'Is SA's healthcare system prepared for Covid-19?'. [https://www.investec.com/en_za/focus/beyond-wealth/is-south-africas-healthcare-system-prepared-for-covid-19.html]. Accessed 10 August 2020.

[3] Ministry of Health. [www.health.gov.za]. Accessed 20 March 2021.

[4] Ministry of Defence and Military Veterans. [<http://www.dod.mil.za/>]. Accessed 20 March 2021.

[5] National Disaster Management Centre (NDMC). [<http://www.ndmc.gov.za/Pages/Home-Page.aspx>]. Accessed 20 March 2021.

[6] South African Health Products Authority (SAHPRA). [<https://www.sahpra.org.za/>]. Accessed 20 March 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient publicly available evidence that South Africa has a plan and guidelines in place for dispensing medical countermeasures for national use during a public health emergency. No information on dispensing could be found on the Department of Health's 'COVID-19 Online Resource and News Portal' website, or those of the ministries of Health or Defence. [1,2,3] The Department of Health's "National guidelines on epidemic preparedness and response" addresses many issues but none specifically on dispensing medical counter measures. [4] There is a national plan on influenza, but this does not address dispensing of medical countermeasures in a public emergency. [5] The Joint External Evaluation for South Africa, conducted in November/December 2017, states "what is often lacking is the enabling national plan or legislation (for example with respect to medical countermeasures and personnel deployment)" and also that "South Africa has not yet finalized comprehensive plans for sending and receiving medical countermeasures or personnel." [6]

[1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/>]. Accessed 10 August 2020.

[2] National Department of Health. 2020. [<http://www.health.gov.za/>]. Accessed 10 August 2020.

[3] Ministry of Defence. 2020. [<http://www.dod.mil.za/>]. Accessed 10 August 2020.

[4] Department of Health. 2007. "The National Infection Prevention and Control Policy & Strategy." [<https://www.idealhealthfacility.org.za/docs/policies/IPC%20Policy.pdf>]. Accessed 10 August 2020.

[5] Department of Health. 2017. "National Influenza Policy and Strategic Plan."

[<http://www.health.gov.za/index.php/component/phocadownload/category/339-national-influenza-policy-and-strategy-plan?download=1900:national-influenza-policy-and-strategy-plan>]. Accessed 10 August 2020.

[6] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-REP-2018.10/en/>]. Accessed 10 August 2020.

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

4.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that South Africa has a plan in place to receive health personnel from other countries to respond to a public health emergency. The Joint External Evaluation for South Africa, conducted in November/December 2017, finds that there is no comprehensive plan for a system to send and receive health personnel. [1] There is no further evidence of a plan on the Department of Health 2020 National preparedness and response plan Novel coronavirus or the Annual Review 2018/19. [2,3] Neither is there on the websites of the National Institute for Communicable Diseases or the National Disaster Management Centre (NDMC). [4,5,6]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 10 August 2020.

[2] Department of Health. February 2020. 'National preparedness and response plan Novel coronavirus'. [https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 10 August 2020.

[3] Department of Health. 2018. "Annual report 2018/19." [<https://www.gov.za/documents/department-health-annual-report-20182019-11-nov-2019-0000>]. Accessed 10 August 2020.

[4] National Institute for Communicable Diseases. 2018. "Outbreak Response," [<http://www.nicd.ac.za/index.php/centres/division-of-public-health-surveillance-and-response/>]. Accessed 10 August 2020.

[5] National Institute for Communicable Diseases. 2018. 'Annual Overview 2018/19'. [https://www.nicd.ac.za/wp-content/uploads/2019/12/NICD_ANNUAL-OVERVIEW_-2018_2019.pdf]. Accessed 10 August 2020.

[6] NDMC. "Frameworks." [<http://www.ndmc.gov.za/Pages/Frameworks.aspx>]. Accessed 10 August 2020.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 3

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 96.7

2016

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: 85.27

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that the South African government has issued legislation, a policy or a public statement committing to the provision of prioritised health care services to healthcare workers who become sick as a result of responding to a public health emergency.

There is no information published regarding this by the Departments of Health, Cooperative Governance (which includes the National Disaster Management Centre) or by the National Institute for Communicable Diseases. [1,2,3,4,5] The National Influenza Policy and Strategic Plan states that any healthcare workers who fall into high risk groups are eligible for publicly available vaccines, though healthcare workers with no high-risk indications will not be targeted for publicly available vaccines because of limited supply. This group is encouraged to access vaccines through private facilities at their own expense. [6]

[1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/category/press-releases-and-notice/>]. Accessed 10 August 2020.

[2] Department of Health. "Regulations." [<http://www.health.gov.za/index.php/2014-03-17-09-09-38/legislation/joomla-split-menu>]. Accessed 10 August 2020.

[3] Department of Cooperative Governance. "Homepage". [http://www.cogta.gov.za/?page_id=253]. Accessed 10 August 2020.

[4] National Disaster Management Centre. "Frameworks." [<http://www.ndmc.gov.za/Pages/Frameworks.aspx>]. Accessed 10 August 2020.

[5] National Institute for Communicable Diseases. 2020. "Outbreak Response," [<https://www.nicd.ac.za/our-services/outbreak-response/>]. Accessed 10 August 2020.

[6] Department of Health. 2017. "National Influenza Policy and Strategic Plan, 2017-21." [<http://www.health.gov.za/index.php/component/phocadownload/category/339-national-influenza-policy-and-strategy-plan?download=1900:national-influenza-policy->]. Accessed 10 August 2020.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a system in place in South Africa specifically for public health officials and healthcare workers to communicate during a public health emergency. The Department of Health (DOH) has an online resource portal and the National Institute for Communicable Diseases (NICD) has a COVID-19 Communication resources facility, but neither of these describe a specific mechanism for communications between health officials and healthcare workers. [1,2] The Disaster Management Act of 2002 describes a framework for communication links with disaster management role players, but it does not give details about how this should work, either for a health emergency or otherwise. It only states that the National Disaster Management Centre (NDMC) must develop and maintain communication links and take steps to disseminate disaster management information. [3,4] The 2020 'National preparedness and response plan Novel coronavirus' makes no specific mention of two-way communication between public health officials and healthcare workers. [5] The NICD has both an Emergency Operations Centre, charged with coordinating responses to public health emergencies, and a Communications Unit, but there is no evidence either has a specific communications plan for communications between health officials and healthcare workers. [6] The Joint External Evaluation for South Africa, conducted in November–December 2017, states that "a formal communication mechanism is needed with the hospital and health care sector during an emergency". [7]

- [1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/category/press-releases-and-notice/>]. Accessed 10 August 2020.
- [2] National Institute for Communicable Diseases. 2020. "COVID-19 Communication resources". [<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-communication-resources/>]. Accessed 10 August 2020.
- [3] Government of South Africa. 2003. "Disaster Management Act, 2002." No. 57 of 2002. [<http://www.ifrc.org/docs/idrl/662EN.pdf>]. Accessed 10 August 2020.
- [4] National Disaster Management Centre. N.d. "Introduction: A policy framework for disaster risk management in South Africa." [<http://www.ndmc.gov.za/Frameworks/Disaster%20Management%20Framework.pdf>]. Accessed 10 August 2020.
- [5] Department of Health. February 2020. 'National preparedness and response plan Novel coronavirus'. [https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 20 March 2021.
- [6] National Institute for Communicable Diseases. 2018. "Annual Overview 2018/19." [https://www.nicd.ac.za/wp-content/uploads/2019/12/NICD_ANNUAL-OVERVIEW_-2018_2019.pdf]. Accessed 10 August 2020.
- [7] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 10 August 2020.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a system in place in South Africa specifically for public health officials and healthcare workers to communicate during a public health emergency, and hence none that includes private sector workers. The Department of Health (DOH) has an online resource portal and the National Institute for Communicable Diseases (NICD) has a COVID-19 Communication resources facility, but neither of these describe a specific mechanism for communications between health officials and healthcare workers. [1,2] The Disaster Management Act of 2002 describes a framework for communication links with disaster management role players, but it does not give details about how this should work, either for a health emergency or otherwise. It only states that the National Disaster Management Centre (NDMC) must develop and maintain communication links and take steps to disseminate disaster management information. [3,4] The 2020 'National preparedness and response plan Novel coronavirus' makes no specific mention of two-way communication between public health officials and healthcare workers. [5] The NICD has both an Emergency Operations Centre, charged with coordinating responses to public health emergencies, and a Communications Unit, but there is no evidence either has a specific communications plan for communications between health officials and healthcare workers. [6] The Joint External Evaluation for South Africa, conducted in November-December 2017, states that "a formal communication mechanism is needed with the hospital and health care sector during an emergency". [7]

- [1] Department of Health. 2020. 'COVID-19 Online Resource and News Portal'. [<https://sacoronavirus.co.za/category/press-releases-and-notice/>]. Accessed 10 August 2020.
- [2] National Institute for Communicable Diseases. 2020. "COVID-19 Communication resources". [<https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-communication-resources/>]. Accessed 10 August 2020.
- [3] Government of South Africa. 2003. "Disaster Management Act, 2002." No. 57 of 2002. [<http://www.ifrc.org/docs/idrl/662EN.pdf>]. Accessed 10 August 2020.
- [4] National Disaster Management Centre. N.d. "Introduction: A policy framework for disaster risk management in South Africa." [<http://www.ndmc.gov.za/Frameworks/Disaster%20Management%20Framework.pdf>]. Accessed 10 August 2020.

[5] Department of Health. February 2020. 'National preparedness and response plan Novel coronavirus'.

[https://www.westerncape.gov.za/assets/departments/health/FP/national_preparedness_plan_covid-19_draft.24.02.2020.pdf]. Accessed 20 March 2021.

[6] National Institute for Communicable Diseases. 2018. "Annual Overview 2018/19." [https://www.nicd.ac.za/wp-content/uploads/2019/12/NICD_ANNUAL-OVERVIEW_-2018_2019.pdf]. Accessed 10 August 2020.

[7] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 10 August 2020.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the national public health system of South Africa is monitoring for and tracking the number of healthcare-associated infections that take place in healthcare facilities. The Joint External Evaluation (JEE) for South Africa, conducted in November/December 2017, noted that there was an absence of a national multi-sectoral plan for HCAI/AMR prevention. The report finds that there "is a good level of ad hoc implementation in health care facilities in many provinces incorporating IPC policies, operational plans, SOPs, and audits at health facilities, with isolation units and trained IPC professionals at tertiary hospitals, guidelines to protect health care workers from HCAI, and surveillance targeting cluster detection in high risk groups". However, the report also notes areas which can be improved upon, such as how HCAI programmes have to be more consistent through a national plan covering all areas of activity that would be consulted, communicated, implemented and monitored nationally and within each province. [1] There is no publicly available evidence on the websites of the National Department of Health or the National Health Laboratory Service, [2,3] nor is there any evidence in the Antimicrobial Resistance National Strategy Framework 2014-2024. [4]

[1] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa".

[<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 10 August 2020.

[2] National Department of Health. 2020. [<http://www.health.gov.za/>]. Accessed 10 August 2020.

[3] National Health Laboratory Service. 2020. [<http://www.nhls.ac.za/>]. Accessed 10 August 2020.

[4] Department of Health. 2014. "Antimicrobial Resistance National Strategy Framework: 2014-2024".

[http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=197797]. Accessed 10 August 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 publicly available evidence that there is a national requirement for ethical review (from an ethics committee) before beginning a clinical trial in South Africa. Before any clinical trial can proceed in South Africa, approval must be granted by at least one officially registered research ethics committee (REC). The National Health Research Ethics Council of South Africa (NHREC) is the highest policy making body for research ethics and accredits RECs. [1,2] The Department of Health defines the primary role of a research ethics committee to "safeguard the dignity, rights, safety, and well-being of all trial participants". [2]

[1] Department of Health/South African National Clinical Trial Register. 2018. "Welcome to SANCTR." [http://www.sanctr.gov.za/]. Accessed 10 August 2020.

[2] Department of Health. 2019. "Research Ethics Committees". [http://www.sanctr.gov.za/YourRights/ResearchEthicsCommittees/tabid/178/Default.aspx]. Accessed 10 August 2020.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there is an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics in South Africa. There is no evidence on the websites of the Department of Science and Technology, the South African National Clinical Trial Registry, the National Health Research Ethics Council of South Africa (NHREC) or the South African Health Products Regulatory Authority (SAHPRA) (a statutory body that regulates the performance of clinical trials and registration of medicines and medical devices), that outline a process for expedited approval of clinical trials.[1,2,3,4]

[1] Department of Science and Technology. "Homepage". [https://www.dst.gov.za/]. Accessed 10 August 2020.

[2] Department of Health/South African National Clinical Trial Register. 2020. [http://www.sanctr.gov.za/]. Accessed 10 August 2020.

[3] Department of Health. 2019. "Research Ethics Committees". [http://www.sanctr.gov.za/YourRights/ResearchEthicsCommittees/tabid/178/Default.aspx]. Accessed 26 August 2020.

[4] The South African Health Products Regulatory Authority (SAHPRA). 2020. 'Clinical trials'. [https://www.sahpra.org.za/clinical-trials/]. Accessed 10 August 2020.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that South Africa does have a government agency responsible for approving new medical countermeasures for humans. The South African Health Products Regulatory Authority (SAHPRA) (which now incorporates the old Medicines Control Council [MCC]) "is tasked with regulating (monitoring, evaluating, investigating, inspecting and registering) all health products. This includes clinical trials, complementary medicines, medical devices and in vitro diagnostics (IVDs). SAHPRA's mandate is outlined in the Medicines and Related Substances Act (Act No 101 of 1965 as amended) as well as the Hazardous Substances Act (Act No 15 of 1973)." [1] The South African National Clinical Trial Register (SANCTR), within the Department of Health, provides the public with updated information on clinical trials on human participants being conducted in South Africa. [2] There is, however, no specific mention of medical countermeasures or interventions to be used during public health emergencies on either site.

[1] The South African Health Products Regulatory Authority (SAHPRA). 2020. [<https://www.sahpra.org.za/>]. Accessed 11 August 2020.

[2] Department of Health/South African National Clinical Trial Register. 2020. [<http://www.sanctr.gov.za/>]. Accessed 11 August 2020.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence to show that South Africa has an expedited process for approving unregistered medical countermeasures to treat ongoing pandemics. The South African Health Products Regulatory Authority (SAHPRA) (which now incorporates the old Medicines Control Council [MCC]) "is tasked with regulating (monitoring, evaluating, investigating, inspecting and registering) all health products. This includes clinical trials, complementary medicines, medical devices and in vitro diagnostics (IVDs). SAHPRA's mandate is outlined in the Medicines and Related Substances Act (Act No 101 of 1965 as amended) as well as the Hazardous Substances Act (Act No 15 of 1973)." Although there is no specific mention made of medical countermeasures or interventions to be used during public health emergencies, these same conditions can be assumed to apply if that was the case. [1] This is also true of the Joint External Evaluation report for South Africa, conducted November-December 2017, which states that Section 21 of the Medicines and Related Substances Act 101 of 1965 "allows for the authorized use of unregistered medicines" which could be utilised during a public health emergency. [2]

[1] The South African Health Products Regulatory Authority (SAHPRA). 2020. [<https://www.sahpra.org.za/>]. Accessed 11 August 2020.

[2] World Health Organisation. 2017. "Joint External Evaluation of IHR Core Capacities of the Republic of South Africa". [<http://apps.who.int/iris/bitstream/handle/10665/272361/WHO-WHE-CPI-REP-2018.10-eng.pdf?sequence=1>]. Accessed 11 August 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a risk reduction strategy which substantially mentions pandemics. Although South Africa's disaster risk reduction policy framework does mention pandemics, it is only mentioned briefly. There is no evidence of a standalone national disaster risk reduction strategy for pandemics. The disaster risk policy framework published by the National Disaster Management Centre (NDMC) briefly addresses pandemics, noting that these are one type of disaster that should be considered, and that training programmes on disaster risk reduction for officials must cover communicable diseases. [1] The National Guidelines on Epidemic Preparedness and Response, 2009, makes no mention of pandemics. [2] There is no further evidence of a strategy to reduce the risk of pandemics, either by the NDMC or the National Institute for Communicable Diseases (NICD), which is tasked with a leadership and coordination role in the event of a declared public health emergency. [3, 4] Some local authorities have integrated infectious disease risks into their disaster management plans, others have not. [5]

[1] National Disaster Management Centre. N.d. "Introduction: A policy framework for disaster risk management in South Africa." [<http://www.ndmc.gov.za/Frameworks/Disaster%20Management%20Framework.pdf>]. Accessed 11 August 2020.

[2] Department of Health. 6 March 2009. 'National Guidelines on Epidemic Preparedness and Response'. [<https://www.idealhealthfacility.org.za/docs/Protocols/National%20Guidelines%20on%20Epidemic%20Preparedness%20and%20Response%20.pdf>]. Accessed 11 August 2020.

[3] National Disaster Management Centre. Official website. [<http://www.ndmc.gov.za/Pages/Home-Page.aspx>]. Accessed 11 August 2020.

[4] National Institute for Communicable Diseases. 2018. "Annual Overview 2018/19." [https://www.nicd.ac.za/wp-content/uploads/2019/12/NICD_ANNUAL-OVERVIEW_-2018_2019.pdf]. Accessed 10 August 2020.

[5] Midvaal Local Municipality. 2017. "Integrated development plan 2017-2022." (Annexure C: Disaster management plan.) [<http://www.midvaal.gov.za/images/idp/FINAL%20IDP%202017-2022%2016%20MAY%202017.pdf>]. Accessed 11 August 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

There is publicly available evidence to show that South Africa participates in numerous cross-border commitments, with regards to public health emergencies. South Africa participates in the African Public Health Laboratories Network (APHLN), which can provide lab assistance and information sharing during public health emergencies. [1] Secondly, the country is committed via the African Union to participating in the Southern Africa Regional Collaborating Centre of the Africa CDC. [2, 3] According to the AMR strategy, the existing national surveillance system is to be strengthened to allow the sharing of data to improve the diagnosis of trends and resistance patterns. [4] Thirdly, as part of the Southern African Development Community (SADC), there is regional cooperation beyond security and economic matters, which emphasises the need for regional disaster risk management. [5] These SADC member states have all signed the Protocol on Health to coordinate regional efforts on epidemic preparedness mapping prevention, control and where possible the eradication of communicable and non-communicable diseases. [6] There also exists a Disaster Risk Reduction Unit (DRRU), which is responsible for coordinating regional preparedness and response programmes for trans-boundary hazards and disasters and a Regional Platform for Disaster Risk Reduction, although it does not refer specifically to public health. [5]

[1] African Public Health Laboratories Network (APHLN). 2018. "What we do." [<http://www.aslm.org/what-we-do/aphln/>]. Accessed 11 August 2020.

[2] African Union. 2017. "Southern Africa Establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to Improve Surveillance, Emergency Response And Prevention Of Infectious And Non-communicable Diseases." ReliefWeb, 21 Jul 2017. [<https://reliefweb.int/report/world/southern-africa-establishes-africa-centres-disease-control-and-prevention-regional>]. Accessed 11 August 2020.

[3] African Union/Africa CDC. 2018. "Regional Collaborating Centres." [<https://africacdc.org/regional-collaborating-centres/>]. Accessed 11 August 2020.

[4] Department of Health. 2015. "Antimicrobial Resistance National Strategy Framework 2014-2024." [<http://www.health.gov.za/index.php/component/phocadownload/category/199-antimicrobial-resistance>]. Accessed 11 August 2020.

[5] Southern African Development Community. 2018. "Disaster Risk Management". [<http://www.sadc.int/themes/disaster-risk-management/>]. Accessed 11 August 2020.

[6] Southern African Development Community. 1999. "Protocol on Health". [http://www.sadc.int/documents-publications/show/Protocol_on_Health1999.pdf]. Accessed 11 August 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: 0

There is no evidence that South Africa has any cross-border agreements, protocols or MOUs with neighbouring countries or regional groups with regard to animal health emergencies. There is no available information about this from the Department of Agriculture, Land Reform and Rural Development, which is responsible for animal health surveillance and control, the Centre for Emerging Zoonotic Diseases, or the US-based Centers for Disease Control and Prevention (CDC), which is involved in supporting work on zoonotic diseases in South Africa.[1,2,3]

[1] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 11 August 2020.

[2] National Institute for Communicable Diseases. "Centre for Emerging Zoonotic and Parasitic Diseases." [<http://www.nicd.ac.za/index.php/centres/centre-for-emerging-zoonotic-and-parasitic-diseases/>]. Accessed 11 August 2020.

[3] Centers for Disease Control and Prevention. 2015. "One health initiative." [https://www.cdc.gov/globalhealth/countries/southafrica/what/one_health.htm]. Accessed 11 August 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1, No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 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: 0

2021

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

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

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

5.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

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

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

5.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence to show that the South African government has allocated national funds to improve capacity to address epidemic threats within the past three years.

None of the websites of the Ministries of Health, Agriculture or Finance have details of such funding. [1,2,3] The Budget Review, 2020, by the National Treasury, has no dedicated fund details. [4] An article, by award winning journalist Laila Majiet in Power98.7, on the government response to the COVID-19 outbreak states that a Solidarity Fund was established, with R150 million rand of 'seed funding' from the government. There is no mention of any existing epidemic threat fund. [5]

[1] Ministry of Health. 2020. [www.health.gov.za]. Accessed 11 August 2020.

[2] Ministry of Agriculture, Land Reform and Rural Development (DALRRD). 2020. [<https://www.dalrrd.gov.za/>]. Accessed 11 August 2020.

[3] Ministry of Finance. 2020. [<http://www.treasury.gov.za/ministry/>]. Accessed 11 August 2020.

[4] National Treasury of South Africa. 26 February 2020. 'Budget Review 2020'.

[<http://www.treasury.gov.za/documents/national%20budget/2020/review/FullBR.pdf>]. Accessed 11 August 2020.

[5] Majiet, Laila. 23 March 2020. 'A breakdown of SA governments economic response to COVID-19 outbreak'. Power98.7.

[<https://www.power987.co.za/news/a-breakdown-of-sa-governments-economic-response-to-covid-19-outbreak/>]. Accessed 11 August 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

South Africa does not have a publicly identified special emergency public financing mechanism and funds which the country can access in the face of a public health emergency. There is no evidence of an established fund that South Africa can access to fund pandemic response. In the face of a public health emergency, South Africa theoretically has access to the African Public Health Emergency Fund, although there is no evidence that it has made any contributions to this fund. The fund was established in 2012 with the aim of providing resources for initiating timely responses to public health emergencies. However, the latest update from the fund in mid-2016 stated that South Africa had not yet made any contributions, despite being designated as one of the top contributors (owing to its economy size), and so in practice drawing on its resources could prove controversial. [1] South Africa is not eligible to receive IDA resources and thus not eligible for funding from the World Bank's Pandemic Emergency Financing Facility. [2, 3] There is no evidence on the website of the National Department of Health, or any media and academic studies, that South Africa has any special emergency public financing mechanism. [4]

[1] World Health Organisation (WHO). 2016. "The African Public Health Emergency Fund: The way forward (AFR/RC66/15)." ReliefWeb, 24 September 2018. [<https://reliefweb.int/report/world/african-public-health-emergency-fund-way-forward-afrrc6615>]. Accessed 25 June 2020.

[2] World Bank. 2018. "Borrowing Countries". [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 25 June 2020.

[3] World Bank. 2017. "Pandemic Emergency Financing Facility: Frequently Asked Questions".

[<http://www.worldbank.org/en/topic/pandemics/brief/pandemic-emergency-facility-frequently-asked-questions>]. Accessed 25 June 2020.

[4] National Department of Health. "Homepage". [<http://www.health.gov.za/>]. Accessed 25 June 2020.

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

5.5.4a

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

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

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

Current Year Score: 0

There is no publicly available evidence that senior leaders (president or ministers) in South Africa have made a public commitment to the listed points. No evidence could be found on the websites of the ministry of Health, the Public Health Institute of South Africa (PHISA) or the National Health Laboratory Service (NHLS). [1,2,3] South Africa has committed to support the African Public Health Emergency Fund, established in 2012, with the aim of providing resources for initiating timely responses to public health emergencies, including epidemic threats. [4] It has committed via the African Union to participating in the Southern Africa regional collaborating centre of the Africa CDC. [5,6] It committed to assist in responding to the Ebola outbreak in Liberia, Guinea and Sierra Leone in 2014. [7] Domestically, government departments collaborate with the US-based Centers for Disease Control and Prevention (CDC) to improve epidemiology training and surveillance for human and animal diseases. [8]

[1] Ministry of Health. [www.health.gov.za]. Accessed 11 August 2020.

[2] Public Health Institute of South Africa (PHISA). [https://phisa.co.za/]. Accessed 11 August 2020.

[3] National Health Laboratory Service (NHLS). [http://www.nhls.ac.za]. Accessed 11 August 2020. Accessed 22 March 2019

[4] World Health Organisation (WHO). 2016. "The African Public Health Emergency Fund: The way forward (AFR/RC66/15)." ReliefWeb, 27 Jul 2016. [https://reliefweb.int/report/world/african-public-health-emergency-fund-way-forward-afrrc6615]. Accessed 11 August 2020.

[5] African Union. 2017. "Southern Africa Establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to improve Surveillance, Emergency Response and Prevention of Infectious and Non-communicable Diseases." ReliefWeb, 21 Jul 2017. [https://reliefweb.int/report/world/southern-africa-establishes-africa-centres-disease-control-and-prevention-regional]. Accessed 11 August 2020.

[6] African Union/Africa CDC. 2020. "Regional Collaborating Centres." [https://africacdc.org/regional-collaborating-centres/]. Accessed 11 August 2020.

[7] United Nations. 2014. "South Africa's President pledges to support Ebola-affected nations, conflict-ridden countries." AfricaRenewal, 24 Sep 2014. [http://www.un.org/africarenewal/africaga/news/south-africa%E2%80%99s-president-pledges-support-ebola-affected-nations-conflict-ridden-countries]. Accessed 11 August 2020.

[8] Center for Disease Control and Prevention. 2018. "Global health - South Africa." [https://www.cdc.gov/globalhealth/countries/southafrica/default.htm] and "Global Disease Detection Program - South Africa." [https://www.cdc.gov/globalhealth/healthprotection/gdd/south-africa.html]. Accessed 11 August 2020.

5.5.4b

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

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

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

Current Year Score: 1

There is evidence that in the past three years South Africa has invested funding to improve domestic capacity but no evidence that it has previously provided support to other countries to improve capacity to address epidemic threats. The Global Health Security Funding Tracker indicates that from 2016-2018, Canada supported the strengthening of biosecurity and biosafety at South Africa's National Institute for Communicable Diseases (NICD). [1] Government agencies responsible for human and animal health collaborate with the US-based Centre for Disease Control and Prevention (CDC) to improve epidemiology training and surveillance. [2] There is no available evidence of government support for the Africa CDC Southern African Regional Collaborating Centre. [3,4] According to the latest status update on the African Public Health Emergency Fund, South Africa had not made any contributions. [5]

[1] Global Health Security Funding Tracker. [<https://tracking.ghscosting.org/#/data>]. Accessed 11 August 2020.

[2] Center for Disease Control and Prevention. 2018. "Global health - South Africa."

[<https://www.cdc.gov/globalhealth/countries/southafrica/default.htm>] and "Global Disease Detection Program - South Africa." [<https://www.cdc.gov/globalhealth/healthprotection/gdd/south-africa.html>]. Accessed 11 August 2020.

[3] African Union. 2017. "Southern Africa Establishes the Africa Centres for Disease Control and Prevention Regional Collaborating Centre to Improve Surveillance, Emergency Response and Prevention of Infectious and Non-communicable Diseases." ReliefWeb, 21 Jul 2017. [<https://reliefweb.int/report/world/southern-africa-establishes-africa-centres-disease-control-and-prevention-regional>]. Accessed 11 August 2020.

[4] African Union/Africa CDC. 2018. "Regional Collaborating Centres." [<https://africacdc.org/regional-collaborating-centres/>]. Accessed 11 August 2020.

[5] World Health Organisation (WHO). 2016. "The African Public Health Emergency Fund: The Way Forward (AFR/RC66/15)." ReliefWeb, 27 Jul 2016. [<https://reliefweb.int/report/world/african-public-health-emergency-fund-way-forward-afrrc6615>]. Accessed 11 August 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 that South Africa has a publicly available plan or policy for sharing genetic data, epidemiological data, clinical specimens, and/or isolated specimens with international organizations and/or other countries. However, there are examples where South Africa does participate in collaborative international efforts to combat key diseases, such as TB. According to the websites of numerous agencies and ministries, there is no publicly available evidence of a plan or policy for South Africa to share genetic data, clinical specimens or isolated specimens with international entities. These agencies and ministries include the Department of Health; the National Institute for Communicable Diseases (NICD) and the National Health Laboratory Service. [1,2,3] South Africa does however participate in collaborative international efforts to combat key diseases such as TB, which involve epidemiological data sharing. [5] There is no publicly available evidence of a plan or policy on the websites of the Department of Health or Department of Agriculture, Land Reform and Rural Development. [1,6]

[1] Department of Health. "Homepage". [<http://www.health.gov.za/>]. Accessed 11 August 2020.

[2] Government of South Africa. "Health." [<http://www.gov.za/issues/health>]. Accessed 11 August 2020.

[3] National Institute for Communicable Diseases. "Publications." [<http://www.nicd.ac.za/index.php/publications/>]. Accessed 11 August 2020.

[4] National Health Laboratory Service. "Publications." [<http://www.nhls.ac.za/?page=publications&id=44>]. Accessed 11 August 2020.

[5] World Health Organization. 2011. "South Africa's health minister unveils new TB diagnosis technology." [<https://www.afro.who.int/news/south-africas-health-minister-unveils-new-tb-diagnosis-technology>]. Accessed 11 August 2020.

[6] Department of Agriculture, Land Reform and Rural Development. [<https://www.dalrrd.gov.za/>]. Accessed 11 August 2020.

5.6.1b

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

Yes = 0, No = 1

Current Year Score: 1

There is no publicly available evidence that South Africa has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. The World Health Organisation has not reported any non-compliance in

the past year by South Africa, nor did a search for media articles on this produce any results. [1]

[1] World Health Organisation (WHO). 2018. "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 11 August 2020.

5.6.1c

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

Yes = 0, No = 1

Current Year Score: 1

There is no publicly available evidence that South Africa has not shared pandemic pathogen samples during an outbreak in the past two years. No evidence was found via the World Health Organisation (WHO). [1] A search for media articles on this topic produces no relevant results.

[1] World Health Organisation (WHO). 2020. "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 11 August 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 44

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 3

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 1

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 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: 4

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: 87.05

2017

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.58

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: 6.1

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 latest South African Quarterly Labour Force Surveys (QLFS) found about 3 million people were working in the informal sector. This is just under 20% of total employment. [1]

[1] TheConversation. September 12, 2019. 'South Africa's informal sector creates jobs, but shouldn't be romanticised'.

[<https://theconversation.com/south-africas-informal-sector-creates-jobs-but-shouldnt-be-romanticised-122745#:~:text=Statistics%20South%20Africa%20has%20two%20surveys%20which%20measure%20informal%20sector%20e>

[employment.&text=The%20latest%20QLFS%20found%20about,sector%20activities%20are%20not%20visible.\].](https://theconversation.com/south-africas-informal-sector-creates-jobs-but-shouldnt-be-romanticised-122745#:~:text=Statistics%20South%20Africa%20has%20two%20surveys%20which%20measure%20informal%20sector%20e) Accessed 11

August 2020.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 0

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 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: 0.63

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 1

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 66.86

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: -0.3

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 63.86

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: 618.4

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 5.42

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 31.4

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 28.3

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: 92.68

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 75.75

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: 610.43

2018

WHO Global Health Expenditure database

6.5.4 Trust in medical and health advice

6.5.4a

Trust medical and health advice from the government

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018