Tunisia

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

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: 0

There is no publicly available evidence of a national antimicrobial resistance (AMR) plan for the surveillance, detection, and reporting of priority AMR pathogens in Tunisia. There is neither a national AMR plan nor a legal framework with a clear policy for the surveillance, detection, and reporting of priority AMR pathogens in Tunisia, on the World Health Organization's (WHO) Library of National Action Plans website. [1] The WHO Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide evidence of a national AMR plan. [2] According to the Ministry of Agriculture, Water Resources and Fisheries's website, a workshop was held on 17 March 2017 in coordination with WHO to prepare a National Action Plan (NAP) for Tunisia combating the bacterial resistance of antibiotics. [3] The websites of the Ministry of Health (MoH) and the Pasteur Institute of Tunis (IPT) do not mention that there is a national AMR plan in place. [4, 5]

[1] World Health Organization (WHO). "Library of National Action Plans" [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 21 February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[3] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. 17 March 2017. "Prepare a National Action Plan to Combat Bacterial Resistance to Antibiotics." [http://www.agriculture.tn/?p=3301]. Accessed 21 February 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] The Pasteur Insitute of Tunis (IPT). "Public Health Programmes". [http://www.pasteur.tn/index.php?option=com_content&view=article&id=130&Itemid=182]. Accessed 21 February 2021.

1.1.1b

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

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

Current Year Score: 2

There is publicly available evidence suggesting that Tunisia's national laboratory system tests for all 7+1 priority antimicrobial resistance (AMR) pathogens.

The preliminary World Health Organization (WHO) Global Antimicrobial Resistance Surveillance System (GLASS) report, published in 2018, corroborates the existence of sentinel sites and states that Tunisia has seven surveillance sites and six

laboratories that test for all GLASS pathogens, including seven of the 7+1 resistant pathogens; namely: Escherichia coli, Klebsiella penumoniae, Staphylococcus aureus, Streptococcus pneumoniae, Salmonella spp., Shigella spp., and Neisseria gonorrhoeae. [1] The 2018 WHO Global Tuberculosis Report mentions that Tunisia monitors and conducts surveillance for resistant tuberculosis. [2] The Pasteur Institute of Tunis (IPT) website states that the Laboratory of Mycobacteria analyzes and monitors priority AMR pathogen of mycobacterium. [3]

According to the WHO Joint External Evaluation (JEE) for Tunisia, published in 2016, Tunisia's National Observatory for New and Emerging Diseases (ONMNE) established in 2005, "operates a system for international disease surveillance; sentinel surveillance based on private general practitioners and emergency departments (public and private hospitals," without elaborating if those are specific to AMR pathogens. The JEE also mentions that 12 university hospitals, 33 regional hospitals, and 40% of animal farms are all capable of serving as sentinel surveillance sites for priority AMR pathogens without clarifying if these facilities are used for such purposes. Furthermore, the JEE recommends designating specific AMR sentinel sites for all priority pathogens and creating a clear legally-established AMR surveillance system in both human and animal sectors. The report adds that culture and sensitivity testing are carried out for eight human pathogens, but does not specify which pathogens. [4]

[1] World Health Organization (WHO). January 2018. "Global Antimicrobial Resistance Surveillance System (GLASS) Report: Early Implementation 2016-2017." [https://apps.who.int/iris/bitstream/handle/10665/259744/9789241513449-eng.pdf?sequence=1]. Accessed 21February 2021.
[2] World Health Organization (WHO). 2018. "Global Tuberculosis Report." [http://apps.who.int/iris/bitstream/handle/10665/274453/9789241565646-eng.pdf?ua=1]. Accessed 21 February 2021.
[3] The Pasteur Institute of Tunis (IPT). " Laboratory of Mycobacteria." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=186&Itemid=546]. Accessed 21 February 2021.
[4] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Government of Tunisia conducts environmental detection or surveillance activities for antimicrobial residues or antimicrobial resistant (AMR) organisms. The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not mention such detection or surveillance activities in the country. [1] Tunisia's environmental and biodiversity strategy document, the 'National Strategy and Action Plan for Biodiversity 2018-2030,' does not suggest that the country conducts detection or surveillance activities for antimicrobial residues or AMR organisms. [2] There is no publicly available information on environmental detection or surveillance ofantimicrobial residues or AMR organisms through the websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), or the Ministry of Agriculture, Water Resources or Fisheries websites. [3, 4, 5] There is no evidence of an AMR National Action Plan on the WHO Library of National Action Plans. [6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.

[2] Convention on Biological Diversity. 2017. "National Strategy and Action Plan for Biodiversity 2018-2030 of the Republic of Tunisia." [https://www.cbd.int/doc/world/tn/tn-nbsap-oth-fr.pdf]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] World Health Organization (WHO). "Library of National Action Plans" [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 21 February 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 1

There is publicly available evidence of a national legislation or regulation requiring prescriptions for antibiotic use for humans in Tunisia, however, there are gaps in enforcement. According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, there is a national legislation requiring prescriptions for antibiotic use for humans; however, the antibiotic use law is not enforced and there is no national plan for the use and management of antibiotics. [1] However, the law is not publicly available. An article published in 2017, mentions that 61% of Tunisians buy medicines such as antibiotics,without prescriptions. [2] Neither the Ministry of Health's website nor the website of the Pasteur Institute of Tunis (IPT) do not provide evidence of a national legislation or regulation that requires prescriptions for antibiotic use for humans. [3, 4] There is no evidence of a national AMR plan for Tunisia. [5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[2] Gmati, Abdelhamid. La Presse de Tunisie. 23 November 2017. "Stop self medication (Stopper l'automedication)". [http://www.santemaghreb.com/actus.asp?id=24090]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 21 February 2021.
[5] World Health Organization (WHO). "Library of National Action Plans" [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 21 February 2021.

1.1.2b

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

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

Current Year Score: 0

There is no publicly available evidence of a national legislation or regulation requiring prescriptions for antibiotic use for animals in Tunisia. TheJoint External Evaluation (JEE) for Tunisia, published in 2016 does not provide information on a national legislation or regulation requiring prescriptions for antibiotic use for animals. [1] There is no evidence of such a law

or regulation through the websites of the Ministry of Health or the Ministry of Agriculture, Water Resources and Fisheries. [2, 3] There is no evidence suggesting that Tunisia has a national action plan for antimicrobial resistance (AMR). [4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[3] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[4] World Health Organization (WHO). "Library of National Action Plans" [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 21 February 2021.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of a national legislation, plans, or equivalent strategy document on zoonotic disease. The Joint External Evaluation (JEE) for Tunisia, published in 2016, describes a number of regular and ad hoc activities related to zoonotic diseases. The JEE refers to Decree 2009-2200 of 14 July 2009 that addresses zoonotic diseases and includes a list of specific diseases that should be monitored and reported on due to the speed of infection and economic loss caused by them in addition to the possibility of their transmission to humans. [1, 2] The JEE further recommends the development of a plan for preparedness and response for zoonotic diseases and the integration of this plan in the public health plan for emergency preparedness and response. However, as a founding member of the World Organization for Animal Health (OIE), Tunisia annually reports human cases of major zoonotic diseases including rabies, bovine tuberculosis, brucellosis, hydatidosis, and visceral leishmaniosis to the OIE World Animal Health Information Database (WAHIS Interface). [1] The Ministry of Health index of the legislative and regulatory texts does not mention such a law. [3] Neither the Ministry of Agriculture, Water Resources and Fisheries website nor on the Institute of Veterinary Research of Tunisia website or the Pasteur Institute of Tunis (IPT) website mention such a law or strategy. [4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. Decree 2009-2200 of 14 July 2009. "Decree 2009-2200: Fixing the Nomenclature of Controlled Animal Diseases and Decreeing the General Measures Applicable to These Diseases." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2009-2200-du----jort-2009-059__2009059022003?shorten=NBrD]. Accessed 21February 2021.
[3] Ministry of Health. "Access and Download Legislative Texts." [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

[6] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 21 February 2021.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Tunisia has 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.

Tunisia's Decree 2009-2200 of 14 July 2009, addresses zoonotic diseases and includes a list of specific diseases that should be monitored and reported on due to the speed of infection and economic loss caused by them in addition to the possibility of their transmission to humans. However, the Decree does not include at least one type of specific risk/reduction plan. [1]

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country has an active epidemiological surveillance system for many zoonotic diseases including avian influenza, Zika virus, and Middle East respiratory syndrome coronavirus; the system is functional at the national, regional and local level. There are regular and ad hoc control programs aiming at "helping communities control leishmaniosis in rural Tunisia." However, the JEE does not include an indication of national legislation, plans, or strategies in place that include measures for risk identification and reduction for zoonotic disease spillover from animals to humans [2]

Surveillance of some zoonotic pathogens at the national level listed on The Pasteur Institute of Tunis (IPT) website including public health programs on Newcastle disease, malaria, tuberculosis, rabies, spongiform encephalopathies, and sheep pox. However, there is no evidence of legislation, plans, or guidelines for their control or measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. [3]

The 'Basic Health Care' section of Tunisia's Ministry of Health website discusses monitoring epidemiological situations, resistance to, and ability to respond to epidemics; however, there is no information or any reference to national health programs that include multiple health programs on zoonotic pathogens and measures for risk identification and reduction of their spillover events from animals to humans. [4] The website of the Ministry of Agriculture, Water Resources and Fisheries website does not provide information on such national legislation, plans or equivalent strategy document(s). [5] The website of the Institute of Veterinary Research of Tunisia was unfunctional during the time of writing this report. [6]

[1] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. Decree 2009-2200 of 14 July 2009. "Decree 2009-2200: Fixing the Nomenclature of Controlled Animal Diseases and Decreeing the General Measures Applicable to These Diseases." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2009-2200-du----jort-2009-059__2009059022003?shorten=NBrD]. Accessed 21February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[3] The Pasteur Institute of Tunis (IPT). "Public Health Programs." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=130&Itemid=182]. Accessed 21 February 2021.
[4] Ministry of Health of the Republic of Tunisia. "National Health Programs" [http://www.santetunisie.rns.tn/ar/2016-07-27-

18-21-04/%D8%A7%D9%84%D8%B1%D8%B9%D8%A7%D9%8A%D8%A9-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A%D8%A9-%D8%A7%D9%84%D8%A3%D8%B3%D8%A7%D8%B3%D9%8A%D8%A9?id=85]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21February 2021.
[6] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence suggesting that Tunisia has national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern.

Tunisia's Decree 2009-2200 of 14 July 2009, addresses zoonotic diseases and includes a list of specific diseases that should be monitored and reported on due to the speed of infection and economic loss caused by them in addition to the possibility of their transmission to humans. It includes control measures for a long list of diseases that affect different animals and can be transmitted to human hosts. [1]

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country has an active epidemiological surveillance system for many zoonotic diseases including avian influenza, Zika virus, and Middle East respiratory syndrome coronavirus; the system is functional at the national, regional and local level. There is regular and ad hoc control programs aiming at "helping communities control leishmaniosis in rural Tunisia." [2]

Surveillance of some zoonotic pathogens at the national level listed on The Pasteur Institute of Tunis (IPT) website including public health programs on Newcastle disease, malaria, tuberculosis, rabies, spongiform encephalopathies, and sheep pox. However, there is no evidence of legislation, plans, or guidelines for their control. [3]

The 'Basic Health Care' section of Tunisia's Ministry of Health website discusses monitoring epidemiological situations, resistance to, and ability to respond to epidemics; however, there is no information or any reference to national health programs that include multiple health programs on zoonotic pathogens such as bilharzia and schistosomiasis, rabies, malaria, and leishmaniasis. [4]

The website of the Ministry of Agriculture, Water Resources and Fisheries website does not provide information on such national law or legislation. [5] The website of the Institute of Veterinary Research of Tunisia was unfunctional during the time of writing this report. [6]

[1] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. Decree 2009-2200 of 14 July 2009. "Decree 2009-2200: Fixing the Nomenclature of Controlled Animal Diseases and Decreeing the General Measures Applicable to These Diseases." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2009-2200-du----jort-2009-059__2009059022003?shorten=NBrD]. Accessed 21February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.

[3] The Pasteur Institute of Tunis (IPT). "Public Health Programs." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=130&Itemid=182]. Accessed 21 February 2021.
[4] Ministry of Health of the Republic of Tunisia. "National Health Programs" [http://www.santetunisie.rns.tn/ar/2016-07-27-18-21-04/%D8%A7%D9%84%D8%B1%D8%B9%D8%A7%D9%8A%D8%A9-%D8%A7%D9%84%D8%B5%D8%AD%D9%8A%D8%A9-%D8%A7%D9%84%D8%A3%D8%B3%D8%A7%D8%B3%D9%8A%D8%A9?id=85]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21February 2021.
[6] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries. The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that "coordination is weak between different ministries, departments and sectors in routine situations for certain zoonoses (especially brucellosis);" without further elaboration on the coordination mechanism in place. [1] There is, however, some ad hoc mechanisms of cross-ministry collaboration and cooperation on the control of zoonoses in Tunisia. For example, the National Commission Against Rabies is an entity within the Ministry of Health and a subcommittee of the National Committee of Anthropozoonoses, that was created to prevent and control zoonoses as per decree 19 May 1994. Additionally, regional committees for the Control of Rabies, chaired by governors, were established by Circular No. 23 the Minister of State and Minister of the Interior 04 December 1993. [2] The European Union funded a two-day workshop in September 2017 on "the Rabies National Control Programme of the Tunisian Ministry of Agriculture: Feedback from the field, state, and ways of improvement," organized by the World Organization for Animal Health (OIE) Sub-Regional Representation for North Africa in collaboration with the Ministry of Agriculture, Water Resources and Fisheries, and the Tunisian Veterinary Services. [3] The Ministry of Health index of the legislative and regulatory texts does not mention such cross-ministry collaboration. [4] The Institute of Veterinary Research of Tunisia website was unfunctional during the time of writing this report. [5]

[1] World Health Organisation (WHO). 28 November - 2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.45-eng.pdf]. Accessed 21 February 2021.
[2] The National Commission Against Rabies. "The National Program Against Rabies." [http://www.rage.tn/Fr/la-commission-nationale-de-lutte-antirabique_11_264]. Accessed 21 February 2021.
[3] World Organisation for Animal Health (OIE), Africa. 26 September 2017. "In the Spotlight: The National Rabies Control Programme of the Ministry of Agriculture in Tunisia." [https://rr-africa.oie.int/en/news/improving-the-rabies-national-control-plan-in-tunisia/]. Accessed 21 February 2021.
[4] Ministry of Health of the Republic of Tunisia. "Access and Download Legislative Texts," [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency in Tunisia.

According to Article 3 of Decree 2009-2200, enacted in July 2009, animal owners must take an animal infected or suspected of being infected with listed animal diseases to a regional veterinarian for observation. Article 5 then describes how the regional authority is subsequently responsible for quarantine and disposal of the body of an infected animal, while Article 7 describes how regional authorities then report to the Ministry of Agriculture, Water Resources and Fisheries. The decree, nonetheless, does not elaborate on the actual reporting mechanism through which owners of livestock conduct and report on disease surveillance. [2]

There is no further evidence of a national reporting mechanism through the websites of the Ministry of Health, or Ministry of Agriculture, Water Resources and Fisheries website of this system. [2, 3] The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide evidence of such reporting mechanism in the country. [4] The websites of the National Zoosanitary Watch Centre (CNVZ), a zoonotic disease watchdog under the Ministry of Agriculture, Water Resources and Fisheries, and the Institute of Veterinary Research were both unfunctional during the time of writing this report. [5, 6]

[1] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. Decree 2009-2200 of 14 July 2009. "Decree 2009-2200: Fixing the Nomenclature of Controlled Animal Diseases and Decreeing the General Measures Applicable to These Diseases." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2009-2200-du----jort-2009-059__2009059022003?shorten=NBrD]. Accessed 21February 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[3] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[4] World Health Organisation (WHO). 28 November - 2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://extranet.who.int/sph/sites/default/files/jeeta/WHO-WHE-CPI-REP-2017.45-eng.pdf]. Accessed 21 February 2021.
[5] The National Zoosanitary Watch Center (Centre National de Veille Zoosanitaire). [http://cnvz.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.
[6] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulations that safeguard the confidentiality of information generated through surveillance activities for animals (for owners). Decree 2009-2200 of 14 July 2009 touches upon animal

diseases and states that animal owners must report instances of infected animals to relevant government authorities, but makes no mention of the confidentiality of the owners' information. [1] There is no information provided on legislation and/or regulations that safeguard the confidentiality of information generated through surveillance activities for animals (for owners) through the Joint External Evaluation (JEE) for Tunisia, published in 2016, the websites of the Ministry of Health, or the Ministry of Agriculture, Water Resources and Fisheries. [2, 3, 4] The websites of the National Zoosanitary Watch Centre (CNVZ), a zoonotic disease watch dog under the Ministry of Agriculture, Water Resources and Fisheries, and the Institute of Veterinary Research were both unfunctional during the time of writing this report. [5, 6]

[1] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. Decree 2009-2200 of 14 July 2009. "Decree 2009-2200: Fixing the Nomenclature of Controlled Animal Diseases and Decreeing the General Measures Applicable to These Diseases." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2009-2200-du----jort-2009-059__2009059022003?shorten=NBrD]. Accessed 21February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] The National Zoosanitary Watch Center (Centre National de Veille Zoosanitaire). [http://cnvz.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.
[6] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.2c

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

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Tunisia conducts surveillance of zoonotic disease in wildlife (e.g., wild animals, insects, other disease vectors). According to the Official Journal of Tunisia, published in 2009, the country conducts surveillance of zoonotic diseases, such as avian influenza, in wildlife. [1] However, there is no more recent evidence suggesting that such surveillance in wildlife is still ongoing. Tunisia is associated with the Mediterranean Zoonoses Control Programme (MZCP) of the World Health Organization (WHO); however, the website does not mention surveillance in wildlife specifically. [2] There is no further evidence suggesting that the country conducts surveillance of zoonotic disease in wildlife through the Joint External Evaluation (JEE) for Tunisia, published in 2016, the websites of the Ministry of Health or the Ministry of Agriculture, Water Resources and Fisheries websites. [3, 4, 5] The websites of the National Zoosanitary Watch Centre (CNVZ), a zoonotic disease watch dog under the Ministry of Agriculture, Water Resources and Fisheries, and the Institute of Veterinary Research were both unfunctional during the time of writing this report. [6, 7]

[1] Official Journal of Tunisia. 2009. [http://www.legislation.tn/sites/default/files/fraction-journal-officiel/2009/2009F/024/TF20094244.pdf]. Accessed 21 February 2021.
[2] World Health Organisation (WHO). "Mediterranean Zoonoses Control Programme (MZCP) of the World Health Organisation." [https://www.who.int/zoonoses/institutions/mzcp/en/]. Accessed 21 February 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.

[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] The National Zoosanitary Watch Center (Centre National de Veille Zoosanitaire). [http://cnvz.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.
[7] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 12.99

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 4.37

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 insufficient evidence of 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. The Joint External Evaluation (JEE) for Tunisia, published in 2016, discusses work plans and 'zoonotic committees' of cooperation between human and animal health entities at both the regional and national levels. However, it is unclear how the private sector of either human or animal health agencies/actors are included in these entities. The JEE also adds that "the involvement of the (substantial and increasing) private veterinarian and medical sectors in active zoonosis surveillance and reporting should be improved (review the health delegation procedure for private veterinarians in order to increase the size of the field network)." [1] Further details on the content of these committees and forms of cooperation are not available. There is no World Organisation for Animal Health (OIE) PVS Evaluation Report for Tunisia. [2] There is no evidence of such an entity on either the Ministry of Health or the Ministry of Agriculture, Water Resources and Fisheries websites. [3, 4] The websites of the National Zoosanitary Watch Centre (CNVZ), a zoonotic disease watch dog under the Ministry of Agriculture, Water Resources and Fisheries, and the Institute of Veterinary Research were both unfunctional during the time of writing this report. [5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] World Organisation for Animal Health (OIE). 2 August 2018. "OIE PVS Evaluation Report. [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] The National Zoosanitary Watch Center (Centre National de Veille Zoosanitaire). [http://cnvz.agrinet.tn/index.php/fr/]. Accessed 21 February2021.
[6] The Institute of Veterinary Research. [http://www.irvt.agrinet.tn/index.php/fr/]. Accessed 21 February 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has a record in place, that is 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.

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [1]

The mission of the National Agency for Sanitary and Environmental Product Control (ANCSEP), a subsidiary of the Tunisian Ministry of Health and created by decree 99-769 15 April 1999, is to prevent risks related to products and environmental factors and coordinate and consolidate the health and environmental control activities in Tunisia, including regularly maintaining and updating databases of such toxic materials. However, this section of the website is not functional. [2]

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, institutes with pathogens and toxins do not have in place mapping at the national level, and there is no documentation of inventory available other than the institutional knowledge held by specific personnel. The JEE also refers to multiple laws and entities including the 1999 ad hoc technical committee on biosecurity established in 2013, which is focused on the legal framework and a national committee that was planned to be finalized in 2017. The Pasteur Institute of Tunis (IPT) outlines this law in detail, but it is unclear if it was ever passed into law. [3]

The website of the Ministry of Defence, including the General Direction of the Military Health page that handles epidemiological monitoring in collaboration with the Ministry of Health, does not provide evidence of a record in place of facilities in which especially dangerous pathogens and toxins are stored or processed. [4] The website of the Ministry of Health, the website of the Ministry of Agriculture, Water Resources and Fisheries website, and the VERTIC database for Tunisia do not provide information on such facilities records. [5, 6, 7]

[1] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[2] National Agency for Sanitary and Environmental Product Control (ANCSEP). [http://www.ancsep.rns.tn/]. Accessed 21 February 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[4] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[7] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that Tunisia has in place legislation and/or regulations related to biosecurity that address requirements such as physical containment, operation practices, failure reporting systems, and/or cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, discusses multiple laws and entities including the 1999 ad

hoc technical committee on biosecurity that was established in 2013 to focus on the legal framework, in addition to a national committee that was planned to be finalized in 2017. None of these discuss requirements and/or cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed. [1]

The Pasteur Institute published a slide deck in 2016 entitled 'Current Regulation on Biosafety and Biosecurity in Tunisia,' that includes references to the development of a National Legal Framework for Biosafety beginning in 1999, in accordance with the Cartagena protocol. However, there is no evidence this was ratified into law. This document also outlines the structure of the National Technical Commission on Biosafety including a legal framework commission, network laboratories (for GMO detection & quantification and monitoring pathogens), and communication and public relations. [2]

There is no relevant legislation or regulation listed on the VERTIC database for Tunisia. [3] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [4]

The websites of the Ministry of Health and the Ministry of Agriculture, Water Resources and Fisheries do not provide evidence on legislation or regulation related to biosecurity; [5, 6] neither does the website of the Ministry of Defence, including the General Direction of the Military Health page that handles epidemiological monitoring in collaboration with the Ministry of Health. [7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February2021.
[3] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.
[4] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[7] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February 2021.

1.3.1c

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

Current Year Score: 0

There is insufficient publicly available evidence of an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations.

In 2016, the Tunisian Association for Biosafety and Environmental Education, along with other committees, were established

to raise awareness on sustainable development, the importance of biosafety awareness, bio-risk management, and environmental education. [1] However, it is unclear if they play any role in the enforcement of biosecurity legislation and regulations.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, numerous ministries, institutes, and agencies are involved in biosafety and biosecurity management and enforcement, including but not limited to the Ministry of Health, Ministry of Agriculture, the Ministry of Local Affairs and Environment, the Ministry of Education, and the Tunisian Association of Biosecurity. However, the management and enforcement role of each ministry and agency is unclear. [2]

According to a document shared by the Pasteur Institute of Tunis (IPT) in 2016, there is a policy in place for establishing an inclusive, cross-ministry National Technical Commission on Biosafety that provides a mechanism for collaboration across government, private sector, and other entities. However, it is unclear if the policy creating the commission was ratified and what role each ministry plays in its implementation. [3]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [4]

The websites of the Ministry of Health and the Ministry of Agriculture, Water Resources and Fisheries do not provide evidence on legislation or regulation related to an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations; [5, 6] neither does the website of the Ministry of Defence, including the General Direction of the Military Health page that handles epidemiological monitoring in collaboration with the Ministry of Health. [7] The VERTIC database for Tunisia do not provide information on such agency in Tunisia. [8]

[1] Ben Belgasem, H. 2019. "Good Practices and Tools for Promoting Public Participation regarding LMOs: Experience and Challenges: Tunisian Case." [https://unece.org/fileadmin/DAM/env/pp/gmo/GMO_Round_table_2019/Presentations/2019_GRT_LMO_GMO_Session_V_Public_Participation_Tunisia_rev_1512.pdf]. Accessed 21 February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[3] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February 2021.
[4] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[7] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February 2021.
[8] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence suggesting that Tunisia has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the locations and institutes holding pathogens and toxins are not mapped in Tunisia, and knowledge of inventories is known by personnel of specific institutes or laboratories. The JEE further mentions multiple laws and entities including the the1999 ad hoc committee on biosecurity, the technical committee on biosecurity established in 2013 which is focused on the legal framework, and the national committee that was planned to be finalized in 2017. There is no mention, however, of any actions to consolidate inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [1]

A document shared by the Pasteur Institute of Tunis (IPT) in 2016, states that there is a policy in place for establishing an inclusive, cross-ministry National Technical Commission on Biosafety that provides a mechanism for collaboration across government, private sector, and other entities. However, it is unclear if the policy creating the commission was ratified, or if this commission will be responsible for consolidating inventories of especially dangerous pathogens and toxins. [2]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [3]

The websites of the Ministry of Health and the Ministry of Agriculture, Water Resources and Fisheries do not provide evidence on action taken to consolidate inventories of especially dangerous pathogens and toxins; [4, 5] neither does the website of the Ministry of Defence, including the General Direction of the Military Health page that handles epidemiological monitoring in collaboration with the Ministry of Health. [6] The VERTIC database for Tunisia does not provide information on this issue. [7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February2021.
[3] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February 2021.
[7] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-

database/t/]. Accessed 21 February 2021.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 1

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

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that Tunisian laboratories have a demonstrated capacity for conducting PCR, culturing of bacteria and viruses, serology, and high-performance liquid chromatography (HPLC). [1] The JEE, nonetheless, does not elaborate on whether PCR is conducted specifically for anthrax and/or Ebola.

An article published in 2018 by the National Center for Biotechnology Information states that the laboratory of hygiene of Sfax in southeast Tunisia uses PCR techniques in detecting Bacillus anthracis (anthrax). Samples are subsequently tested again in laboratories in the United Kingdom and France. [2]

The Pasteur Institute of Tunis (IPT) website does not provide information on the use of PCR in the monitoring activities for anthrax or Ebola. [3] The Ministry of Defence, the Ministry of Agriculture, Water Resources and Fisheries, and the Ministry of Health websites do not include any information on this topic. [4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Front Microbiol. 12 March 2018. "Isolation, Identification, Prevalence, and Genetic Diversity of Bacillus cereus Group Bacteria From Different Foodstuffs in Tunisia." [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5858518/]. Accessed 21 February2021.
[3] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[4] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

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

The Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia (JEE), published in 2016, states that Tunisia identified gaps in training and lacks a comprehensive training curriculum for institutions working with pathogens and toxins. Tunisia partnered with the German Robert Koch Institute to implement a train-the-trainer program in some laboratories and medical facilities; however, it neither a standardized program nor a national requirement. Also, the JEE discusses biosafety and biosecurity together; therefore, it is unclear if such training programs are for biosafety, biosecurity, or both. [1]

There is an elaboration on the collaboration between the Tunisian government and the Robert Koch Institute. [2] A document shared by the Pasteur Institute of Tunis (IPT) in 2016, states that addressed trainings within the broader context of biosafety and biosecurity legislation draft and initiatives; however, the document does not provide information on the training details per se. [3] The websites of the Ministry of Agriculture, Water Resources and Fisheries, the Ministry of Health, the Pasteur Institute of Tunis (IPT), and the Ministry of Defence do not provide information on biosecurity training. [4, 5, 6, 7]

The VERTIC database for Tunisia does not provide evidence of a biosecurity training requirement in the country. [8] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [9]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Robert Koch Institute. 6 April 2018. "Collaborating Centres Annual Report." [https://www.rki.de/EN/Content/Institute/WHOCC/report_2018.pdf?__blob=publicationFile]. Accessed 21 February2021.
[3] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[7] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21February 2021.
[8] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.
[9] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/?field_form_year_tid=548]. Accessed 21 February 2021.
[9] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is insufficient publicly available evidence of regulations or licensing conditions in Tunisia specifying 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.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information on background checks of any kind for personnel handling dangerous pathogens and toxins. None of the laws described in the JEE including the 1999 ad hoc committee on biosecurity, the technical committee on biosecurity established in 2013 which is focused on the legal framework, and the national committee that was planned to be finalized in 2017, include background checks. [1]

Law 54-2002 of 2002 on laboratories of medical analysis of Tunisia, published on the VERTIC database for Tunisia, although includes qualification requirements for laboratory staff, it makes no mention of background checks. [2] There is no information relevant to regulations or licensing conditions specifying that security and other personnel with access to especially dangerous pathogens are subject to drug testing, background checks, and psychological or mental fitness checks through the VERTIC database for Tunisia, or the websites of the Ministry of Agriculture, Water Resources and Fisheries, the Ministry of Health, the Pasteur Institute of Tunis (IPT), and the Ministry of Defense. [3, 4, 5, 6, 7]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [8]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Ministry of Health of the Republic of Tunisia. Law 54-2002 of 11 June 2002. [http://www.vertic.org/media/National%20Legislation/Tunisia/TN_Loi_Laboratoires_Medicales.pdf]. Accessed 21 February 2021.
[3] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[7] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21February 2021.
[8] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence suggesting that Tunisia has national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B).

Article 3 of Law 97-37, defines what constitutes hazardous substances and includes infectious substances as Class 6-2, the law, nonetheless, does not explicitly mention "Category A" and "Category B". [1] The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that while Tunisian legislation addressed the transportation of dangerous goods, they do not meet international standards and regulations. The report further recommends developing standard operating procedures (SOPs) for the transportation of infectious substances, specifically those listed in the International Health Regulations (IHR). [2]

The Ministry of Interior website discusses two decrees which reference Law 97-37, decree No.2002-2015 of 4 September 2002, and decree No. 2005-3079 of 29 November 2005, but neither discusses infectious substances directly. [3, 4, 5] There is no information relevant to national regulations on the safe and secure transport of infectious substances (specifically including Categories A and B) through the VERTIC database for Tunisia, or the websites of the Ministry of Agriculture, Water Resources and Fisheries, the Ministry of Health, the Pasteur Institute of Tunis (IPT), and the Ministry of Defense. [6, 7, 8, 9, 10]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [11]

[1] Government of the Republic of Tunisia. Law 97-37 of 2 June 1997. "On the Transport of Dangerous Goods by Road." [http://www.vertic.org/media/National%20Legislation/Tunisia/TN_97_37_Transport_Matieres_Dangereuses.pdf]. Accessed 21 February2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[3] Ministry of Interior of the Republic of Tunisia. "Reference Texts." [https://www.interieur.gov.tn/article/textes-de-references]. Accessed 21 February2021.
[4] Government of the Republic of Tunisia. Decree 2002-2015 of 4 September 2002. "On the proposal of the Minister of Transport; Considering the law n ° 89-113 of December 30, 1989." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2002-2015-du----jort-2002-074__2002074020153?shorten=R3mi] Accessed 21 February2021.
[5] Government of the Republic of Tunisia. Decree 2005-3079 of 29 November 2005. "On the proposal of the Minister of Transport, Having regard to the law n ° 97-37 of June 2, 1997, relating to the transport by road of the dangerous substances and in particular its article 11." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2005-3079-du----jort-2005-097__2005097030793?shorten=R3PI]. Accessed 21 February2021.
[6] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

[7] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[8] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[9] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[10] Ministry of Defense of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[11] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of legislation and/or regulations in Tunisia to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the Border Health Control Units, the Civil Aviation Authority at Airports (OACA), and the Ports and Merchant Navy Authority (OMMP) are in charge of addressing the security and health needs at Points of Entry (PoE); however, the JEE does not discuss transportation of pathogens or toxins explicitly. [1]

Law 97-37 of 2 June 1997 on transportation of hazardous materials does not address transportation of dangerous pathogens, toxins, and pathogens with pandemic potential. [2] Decree No.2002-2015 of 4 September 2002 and decree No. 2005-3079 of 29 November 2005, both on the transportation of hazardous materials, do not specifically mention or address transportation of pathogens or toxins with pandemic potential. [3, 4, 5] The 'Safety, Security, and Environment' section of the Ports and Merchant Navy Authority (OMMP)/Ministry of Transport website, updated 25 August 2016, provides information on the followed safety measures to mitigate the risk of transporting oil, chemical, and other dangerous products, however, there is no information on the transportation of dangerous pathogens or toxins. [6] The Tunisian Civil Aviation Authority at Airports has international aviation and transportation agreements and safety measures in place; however, there is no information on the transportation of pathogens or toxins. [7]

The websites of the Ministry of Industry and Trade, the Ministry of Health, and the Ministry of Agriculture, Water Resources and Fisheries websites do not provide evidence of legislation and/or regulations to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential. [8, 9, 10] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [11] No further evidence is provided on this matter through the VERTIC database for Tunisia. [12]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.

[2] Government of the Republic of Tunisia. Law 97-37 of 2 June 1997. "On the Transport of Dangerous Goods by Road." [http://www.vertic.org/media/National%20Legislation/Tunisia/TN_97_37_Transport_Matieres_Dangereuses.pdf]. Accessed 21 February2021.
[3] Ministry of Interior of the Republic of Tunisia. "Reference Texts." [https://www.interieur.gov.tn/article/textes-de-references]. Accessed 21 February2021.
[4] Government of the Republic of Tunisia. Decree 2002-2015 of 4 September 2002. "On the proposal of the Minister of Transport; Considering the law n ° 89-113 of December 30, 1989." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2002-2015-du----jort-2002-074__2002074020153?shorten=R3mi]. Accessed 21 February2021.
[5] Government of the Republic of Tunisia. Decree 2005-3079 of 29 November 2005. "On the proposal of the Minister of Transport, Having regard to the law n ° 97-37 of June 2, 1997, relating to the transport by road of the dangerous substances and in particular its article 11." [http://www.legislation.tn/en/detailtexte/D%C3%A9cret-num-2005-3079-du----jort-2005-097__2005097030793?shorten=R3PI]. Accessed 21 February2021.
[6] Ports and Merchant Navy Authority (OMMP), The Ministry of Transport of Republic of Tunisia. 25 August 2016. "Safety, security, and environment." [http://www.ommp.nat.tn/safety-security-and-environment/?lang=en]. Accessed 21 February2021.
[7] Civil Aviation Authority at Airports (OACA), The Ministry of Transport of the Republic of Tunisia. [http://www.oaca.nat.tn/index.php?id=673&L=2]. Accessed 21 February2021.
[8] Ministry of Industry and Trade of the Republic of Tunisia. [http://www.tunisieindustrie.nat.tn/en/home.asp]. Accessed 21 February2021.
[9] Ministry of Health of the Republic of Tunisia. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February2021.
[10] Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia. [http://www.agriculture.tn/]. Accessed 21 February2021.
[11] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence that Tunisia has in place national biosafety legislation and/or regulations.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, refers to multiple committees and entities on biosecurity including the 1999 ad hoc committee on biosecurity, a technical committee on biosecurity established in 2013 which is focused on the legal framework, and a national committee that was planned to be finalized in 2017. [1] However, the specific role of such committees is not outlined, and it is unclear if the biosecurity legal framework is finalized and passed into law.

The Pasteur Institute of Tunis (IPT) slide deck published in 2016 and entitled 'Current Regulation on Biosafety and Biosecurity in Tunisia' mentions the development of a National Legal Framework for Biosafety beginning in 1999, in accordance with the Cartagena protocol; [2] however, it is unclear if this framework is ratified into law.

The VERTIC database for Tunisia does not provide evidence of national biosafety legislation and/or regulations; [3] neither

does the websites of the Ministry of Health, Ministry of Agriculture, Water Resources and Fisheries websites, or the IPT. [4, 5, 6] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[2] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February2021.
[3] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[7] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/?field_form_year_tid=548]. Accessed 21 February 2021.
[7] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

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

In 2016, the Tunisian Association for Biosafety and Environmental Education, along with other committees, were established to raise awareness on sustainable development, the importance of biosafety awareness, bio-risk management, and environmental education. [1] However, it is unclear if they play any role in the enforcement of biosafety legislation and regulations.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, numerous ministries, institutes, and agencies are involved in biosafety and biosecurity management and enforcement, including but not limited to the Ministry of Health, Ministry of Agriculture, the Ministry of Local Affairs and Environment, the Ministry of Education, and the Tunisian Association of Biosecurity. However, the management and enforcement role of each ministry and agency is unclear. [2]

According to a document shared by the Pasteur Institute of Tunis (IPT) in 2016, there is a policy in place for establishing an inclusive, cross-ministry National Technical Commission on Biosafety that provides a mechanism for collaboration across government, private sector, and other entities. However, it is unclear if the policy creating the commission was ratified and what role each ministry plays in its implementation. [3]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [4] The websites of the Ministry of Health and the Ministry of Agriculture, Water Resources and Fisheries do not provide evidence on legislation or regulation related to an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations; [5, 6] neither does the website of the Ministry of Defence, including the General Direction of the Military Health page that handles epidemiological monitoring in collaboration with the Ministry of Health. [7] The VERTIC database for Tunisia do not provide information on such agency in Tunisia. [8]

[1] Ben Belgasem, H. 2019. "Good Practices and Tools for Promoting Public Participation regarding LMOs: Experience and Challenges: Tunisian Case." [https://unece.org/fileadmin/DAM/env/pp/gmo/GMO_Round_table_2019/Presentations/2019_GRT_LMO_GMO_Session_V_Public_Participation_Tunisia_rev_1512.pdf]. Accessed 21 February 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February 2021.
[3] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21 February 2021.
[4] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[7] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 21 February 2021.
[8] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

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

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that "initiatives to introduce biosafety and biosecurity practices in Tunisian laboratories include the train-the-trainers approach. However, laboratories and hospitals still lack some basic operations or culture related to biosafety." The JEE further highlights the supportive role of the Robert Koch

Institute in Germany in implementing a train-the-trainers approach. Nonetheless, the caveat that there is a lack of a comprehensive training curriculum for institutions with pathogens and toxins. Also, biosafety and biosecurity are not discussed separately from one another. [1]

The Ministry of Agriculture, Water Resources and Fisheries, Ministry of Health, the Pasteur Institute of Tunis (IPT), and the Ministry of Defence websites do not provide information on trainings relevant to working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. [2, 3, 4, 5] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [6] There is no further evidence on the VERTIC database for Tunisia. [7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[5] Ministry of Defense of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[6] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[7] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Current Year Score: 0

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

The Joint External Evaluation (JEE) for Tunisia, published in 2016, although states that the country has begun a process of developing and monitoring a storage system for toxins and pathogens, the report does not provide information on assessments conducted on the research that is occurring on dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research. [1]

The Pasteur Institute of Tunis (IPT) website and the portal of their publications include numerous research publications about

pathogens and toxins; however, there is no mention of assessments of research that is occurring on dangerous pathogens, toxins, or other dual-use research. [2, 3] The Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia and the Ministry of Defense websites contain no information on this matter. [4, 5, 6]

The National Agency for Sanitary and Environmental Control of Products (ANCSEP), an entity of the Ministry of Health, published a document entitled the 'State of play of the analysis and testing laboratories of the Ministry of Health and the Ministry of Agriculture and Water Resources,' to understand the current system and create a plan of action to improve the system. This was the only assessment of research capabilities available, however, the assessment does not specifically address dangerous pathogens, toxins, pathogens with pandemic potential. [7]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [8] Therefore, the CBM does not provide evidence of this matter; and neither does the VERTIC database for Tunisia. [9]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February2021.
[3] The Pasteur Institute of Tunis. "Publication Platform." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=562&Itemid=562] Accessed 11 December 2018.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] Ministry of Defense of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[7] National Agency for Sanitary and Environmental Control of Products (ANCSEP). "State of play of the analysis and testing laboratories of the Ministry of Public Health and the Ministry of Agriculture and Water Resources." [http://www.ancsep.rns.tn/etat-des-lieux-des-laboratoires-danalyses-et-dessais-du-ministere-de-la-sante-publique-du-ministere-de-lagriculture-et-des-ressources-hydrauliques/]. Accessed 21 February 2021.
[8] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[9] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research in Tunisia.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that a national policy on biosafety and biosecurity along with pathogen control measures are being developed. [1]

There is no evidence to date, however, suggesting that neither the policy nor the control measures have been finalized and published. The Pasteur Institute of Tunis (IPT) published a slide deck in 2016 entitled the 'Current Regulation on Biosafety and Biosecurity in Tunisia,' that discusses the National Strategy and Action Plan on Biosafety and the proposed requirements on the use of pathogens. However, the document does not discuss the use of pathogens in research and it is unclear if this plan has been implemented or whether the proposed biosecurity law and related policies have officially been approved and passed into law. [2]

The Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia and the Ministry of Defense websites contain no information on this matter. [3, 4, 5] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [6] Therefore, the CBM does not provide evidence of legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential, and/or other dual-use research; and neither does the VERTIC database for Tunisia. [7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[6] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[7] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

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

The Joint External Evaluation (JEE) for Tunisia, published in 2016, although states that a national policy on biosafety and biosecurity along with pathogen control measures are being developed, does not provide information on an agency responsible for oversight of research with especially dangerous pathogens or pathogens and/or other dual-use research. [1]

The Pasteur Institute of Tunis (IPT) published a slide deck in 2016 entitled the 'Current Regulation on Biosafety and

Biosecurity in Tunisia,' which discusses the National Strategy and Action Plan on Biosafety. Although the slides mention the Ministry of the Environment and Sustainable Development and other relevant agencies are part of the framework, there is no mention of research on dangerous pathogens or dual-use research. [2]

The National Agency for Sanitary and Environmental Control of Products, the Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia, and the Ministry of Defense websites contain no information on this matter. [3, 4, 5, 6] Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [7] Therefore, the CBM does not provide evidence of an agency responsible for oversight of research with especially dangerous pathogens, and/or other dual-use research; neither does the VERTIC database for Tunisia. [8]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute Linkedin SlideShare. 19 October 2016. "Current Regulation on Biosafety and Biosecurity in Tunisia." [https://www.slideshare.net/Pasteur_Tunis/current-regulation-on-biosafety-and-bisecurity-in-tunisia?from_action=save]. Accessed 21February 2021.
[3] National Agency for Sanitary and Environmental Control of Products. [http://www.ancsep.rns.tn/]. Accessed 21 February2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[7] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[8] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulation requiring the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that the Cartagena Protocol on the prevention of biotechnological risks, which was ratified in 2002 by the Tunisian government but does not provide information on legislation or regulation that requires the screening of synthesized DNA before it is sold. [1] Tunisia is a party of the Convention on Biological Diversity since December 1993. The Cartagena Protocol, "is an international agreement that aims to ensure the safe handling, transport, and use of living modified organisms (LMOs) resulting from modern biotechnology that may have

adverse effects on biological diversity, taking also into account risks to human health." However, the protocol does not mention regulations requiring screenings of synthesized DNA before its sold. [2]

The Draft Law on Biosecurity in Tunisia, which is meant to ratify and implement the National Biosafety Framework to fulfill Tunisia's obligations as a party to the Cartagena Protocol, discusses genetically modified organisms, pathogens, and invasive alien species, but does not mention synthetic DNA specifically. [3] The Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia and the Ministry of Defense websites contain no information on this matter. [4, 5, 6]

Tunisia is a State Party to the Biological Weapons Commission (BWC), which has an annual reporting mechanism called the "Confidence Building Measure Return (CBM)." The CBM includes the level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of Biosafety Level (BSL) facilities. Tunisia has submitted a CBM report most recently in 2019 although the report is locked and cannot be accessed. [7] Therefore, the CBM does not provide evidence of a screening requirement for the synthesized DNA against lists of known pathogens and toxins before it is sold; neither does the VERTIC database for Tunisia. [8]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Convention on Biological Diversity. "Tunisia-Country Profile." [https://www.cbd.int/countries/default.shtml?country=tn]. Accessed 21 February 2021.
[3] Biosafety Clearing-House. 4 November 2015. "The Draft Law on Biosecurity in Tunisia." [http://bch.cbd.int/database/attachment/?id=15826]. Accessed 11 December 2018.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21February 2021.
[6] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[7] United Nations Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Submissions Made by States Parties by Year." [https://bwc-ecbm.unog.ch/state/tunisia]. Accessed 21 February 2021.
[8] The VERTIC Database. "Tunisia." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 21 February 2021.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 1

2019

World Health Organization

1.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 1

There is publicly available evidence that Tunisia's national laboratory system has the capacity to conduct diagnostic tests for at least 5 of the 10 core tests defined by the World Health Organization (WHO) although the exact tests are not explicitly named.

According to the Joint External Evaluation (JEE), published in 2016, the national laboratory system has the capacity to conduct diagnostic tests for HIV, influenza, polio, tuberculosis, and typhoid fever as well as four country-specific priority diseases of epidemic potential, namely, leishmaniosis, measles, rubella, and West Nile fever. The JEE also states that Tunisia has "a general capacity for diagnostic laboratory methods such as culturing of bacteria and viruses, serology, polymerase chain reaction (PCR), high-performance liquid chromatography (HPLC)," and Sanger sequencing, but does not discuss which tests are utilized for which diseases. [1]

The Pasteur Institute of Tunisia (IPT) website outlines the national testing capabilities of the laboratory unit and public health program. Specifically, the Laboratory of Parasitology-Mycology, which includes 4 sub-units including a) Direct Parasitological Diagnosis, which is able to conduct a variety of tests including skin and bone marrow tests for Leishmania, b) Unit of Mycology, which samples skin and danger for yeasts or filaments, c) Unit of Serology, which conducts serology examinations for a number of parasitic diseases including Leishmania, d) Unit of Molecular Biology, where they conduct Quantitative PCR for diagnosis of toxoplasmosis and visceral leishmaniosis. [2]

The Laboratory of Clinical Virology of IPT, which includes the WHO Regional Reference Laboratory for Poliomyelitis and

Measles, utilizes serological and molecular techniques to analyse measles, rubella, and polioviruses. [3] The Laboratory of Mycobacteria of IPT utilizes PCR techniques for sequencing mycobacteria genes, including tuberculosis. [4] The Laboratory of Clinical Immunology of IPT monitors the T-cells of HIV-infected patients and utilizes serology techniques. [5] No further information on this matter is provided through the websites of the Ministry of Health or the Ministry of Agriculture, Water Resources, and Fisheries of Tunisia. [6, 7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute of Tunisia. "Laboratory of Parasitology-Mycology." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=187&Itemid=547]. Accessed 21 February 2021.
[3] The Pasteur Institute of Tunisia. "Laboratory of Clinical Virology." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=184&Itemid=544]. Accessed 21 February 2021.
[4] The Pasteur Institute of Tunisia. "Laboratory of Mycobacteria." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=186&Itemid=546]. Accessed 21 February 2021.
[5] The Pasteur Institute of Tunisia. "Laboratory of Clinical Immunology." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=193&Itemid=553]. Accessed 21 February 2021.
[6] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[7] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.

2.1.1b

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

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

Current Year Score: 0

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

The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not mention that the country has in place a national plan or strategy for testing during public health emergencies including testing for novel pathogens, scaling capacity, and defining goals for testing. [1] Based on the JEE findings, the World Health Organization Regional Office in 2019, organized a workshop to finalize the first draft of the national action plan to improve health security and response to public health threats in Tunisia. The workshop was attended by representatives from the Ministry of Health and the World Organization for Animal Health. [2] However, neither the plan nor the draft is publicly available.

The Tunisian Health Policies in Disaster Policies, presented in 2011 at the Global Platform for Disaster Risk Reduction, include mitigation policies and measures adopted during disasters including public health emergencies. However, the document does not refer to existing policies or plans on testing during health emergencies including testing for novel pathogens, and scaling capacity. [3]

No further evidence of a national plan or strategy for conducting testing during a public health emergency, which includes

considerations for testing for novel pathogens and scaling capacity is provided through the websites of the Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia, the Ministry of Defense, or the Pasteur Institute of Tunisia. [4, 5, 6, 7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] World Health Organization Regional Office for Eastern Mediterranean. 2019. "Tunisia Finalizes Draft National Action Plan to Improve Health Security." [http://www.emro.who.int/international-health-regulations/ihr-news/tunisia-finalizes-draft-national-action-plan-to-improve-health-security.html]. Accessed 21 February 2021.
[3] Ministry of Health. 2011. "Tunisian Health Policies in Disaster Policies." [https://www.preventionweb.net/files/globalplatform/entry_presentation~tunisianhealthpolicyindisasterpreparedness.pdf]. Accessed 21 February 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[5] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[6] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21 February 2021.
[7] The Pasteur Institute of Tunis (IPT). [http://www.cjc.pasteur.tn/]. Accessed 21 February 2021.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence suggesting that Tunisia's national laboratory that serves as a reference facility that is accredited (e.g., International Organization for Standardization [ISO] 15189:2003, U.S. Clinical Laboratory Improvement Amendments [CLIA]).

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that most laboratories lack accreditation, although "accreditation to International Organisation for Standardization (ISO) is available through the Tunisian Accreditation Council (TUNAC)." The JEE notes that "a [World Health Organization] WHO regional reference laboratory or national reference laboratory has been appointed for HIV, influenza, measles, polio, rubella, tuberculosis and West Nile fever" and that these laboratories include the Rabta hospital and laboratory, Veterinary Research Institute, Centre Technique de l'Agro-Alimentaire, and the Pasteur Institute. [1] However, there is no evidence suggesting that these laboratories are accredited.

The Quality Committee of the Pasteur Institute of Tunis was established in 2015 to work on the laboratory accreditation process in the country; however, it is unclear if this accreditation is for reference facilities. [2] According to an academic report completed in 2016 at the University of Tunisia Al Manar, the Pasteur Institute of Tunis (IPT) is working towards being accredited according to ISO17025 and ISO15189 for important tests. [3] There is no evidence, nonetheless that IPT is accredited. [4] There is no further information on laboratory accreditation through the websites of the Ministry of Health, and the Ministry of Agriculture, Water Resources and Fisheries. [5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute of Tunis (IPT). "Quality Committee of the Pasteur Institute of Tunis". [http://www.pasteur.tn/index.php?option=com_content&view=article&id=513&Itemid=806]. Accessed 21 February 2021.
[3] University of Tunisia Al Manar and The Pasteur Institute of Tunis. Dr. Sonia Damak. 8 July 2016. "Quality Committee of the Pasteur Institute of Tunis". [https://fr.slideshare.net/Pasteur_Tunis/le-comit-qualit-de-linstitut-pasteur-de-tunis]. Accessed 21 February2021.
[4] The Pasteur Institute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 21 February2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[6] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21February 2021.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a national laboratory that serves as a reference facility which is subject to external quality assurance review.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that both internal and external quality assurance are conducted in Tunisia, including the annual evaluation of the Tunisian Unit of Clinical Laboratories and the World Health Organization (WHO) evaluations; however, it is unclear which facilities are subject to these quality assurance reviews. The JEE also notes that "a WHO regional reference laboratory or national reference laboratory has been appointed for HIV, influenza, measles, polio, rubella, tuberculosis and West Nile fever" and that these laboratories include the Rabta hospital and laboratory, Veterinary Research Institute, Centre Technique de l'Agro-Alimentaire, and the Pasteur Institute. [1] There is no evidence, nonetheless, that these laboratories are accredited or subject to external quality assurance review.

According to The Pasteur Institute of Tunis, there is an internal mechanism for quality assurance; external mechanisms are not mentioned. [2] No further information relevant to internal and external quality assurance review is provided through the Ministry of Health or the Ministry of Agriculture, Water Resources and Fisheries websites. [3, 4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] The Pasteur Institute of Tunis (IPT). "Quality Committee of the Pasteur Institute of Tunis". [http://www.pasteur.tn/index.php?option=com_content&view=article&id=513&Itemid=806]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21February 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

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

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country has a specimen transportation mechanism for measles, rubella, influenza, and polio. The JEE states that the "sample transportation seems to function even without a systematic procedure, and covers more than 80% of the country." Hospitals in Tunisia assure the transport of samples of other diseases, even those without a specified transportation mechanism. The JEE does not include further details. [1]

The Ministry of Health's 'Guide for Good Laboratory Practice' provides procedures that laboratories must take for transporting samples. The document states that "the laboratory must ensure that the specimens have been transported: a) in a time appropriate to the nature of the analyses requested and the discipline concerned, (b) at a temperature specified in the specimen collection manual and with the stabilizers recommended for the integrity of specimens, and (c) in a manner which ensures the safety of the carrier, persons in their together and the recipient laboratory. All specimens received must be recorded in an admission register, on a worksheet, in a computer or other comparable system." [2]

No further evidence of a national specimen transport system is provided through the websites of the Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries of the Republic of Tunisia, the Ministry of Defense, or the Pasteur Institute of Tunisia. [3, 4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 21 February2021.
[2] Ministry of Health of the Republic of Tunisia. 2010. "Guide for Good Laboratory Practice." (Guide de bonne pratique de laboratoire). [http://www.santetunisie.rns.tn/images/docs/anis/Guide-de-Bonne-Pratique-de-Laboratoire.pdf]. Accessed 21 February 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 21 February 2021.
[4] Ministry of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 21 February 2021.
[5] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 21February 2021.
[6] The Pasteur Institute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158].Accessed 21 February2021.

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

The Tunisian National Council of Accreditation (TUNAC) is a public institute tasked with evaluating and accrediting laboratories, inspection, and certification bodies according to the relevant national and international standards. TUNAC's website does not provide information on a plan to rapidly authorize and license laboratories during health outbreaks. [1] The regulations regarding the authorization and licensing of private laboratories, published on the official website of the Tunisian Administration, do not include information on plans to expedite licensing laboratories during health outbreaks. [2] The websites of the Ministry of Health, the Ministry of Agriculture, Water Resources and Fisheries websites or the Pasteur Institute of Tunis (IPT) do not provide information on this matter [3, 4, 5]

[1] Tunisian National Council of Accreditation. [http://www.tunac.tn/en/index.html]. Accessed 1 March 2021.
[2] Tunisian Administration. "Private Medical Laboratory Licensing." [http://www.sicad.gov.tn/Ar/الخدمات_57_3_D2059]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 0

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

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country has an event-based surveillance system (EBS) to detect public threats, but it is limited mostly to the private sector due to resource limitations. The JEE also notes that the National Observatory for New and Emerging Diseases (ONMNE), has piloted an EBS system including a platform for regular exchange of information between the 24 regions and a weekly epidemiological teleconference (EpiTEC). However, the JEE does not elaborate if this pilot program has been expanded to include ongoing monitoring or made permanent. [1] There is no information about the EBS on the websites of the Ministry of Health, Ministry of Agriculture, Water Resources and Fisheries, or the Pasteur Institute of Tunis (IPT). [2, 3, 4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has reported a potential public health emergency of international concern (PHEIC) to the WHO within the last two years, including Covid-19. According to the World Health Organization (WHO) Disease Outbreak News website, the last time Tunisia reported a PHEIC was in 2013 for the Middle East respiratory syndrome coronavirus (MERS-CoV). [1] Neither the website of the Ministry of Health nor the Pasteur Insitute of Tunis (IPT) provides further evidence on this matter. [2, 3]

[1] World Health Organization (WHO). "Emergencies preparedness, response: Tunisia".
http://www.who.int/csr/don/archive/country/tun/en/. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 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: 0

There is no evidence suggesting that the Tunisian government operates an electronic reporting surveillance system at both the national and the sub-national level. According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, Tunisia's entire reporting surveillance data is in paper format. The JEE adds that the country with the assistance of the Robert Koch Institute and the German Agency for International Cooperation (GIZ), the National Observatory for New and Emerging Diseases (ONMNE), piloted an event-based surveillance system in five regions, with a plan to scale up the pilot to nationwide by 2017. [1] However, there is no evidence of the scale up so far. There is no informationon an electronic reporting surveillance system in Tunisia through the websites of the Ministry of Health, Ministry of Agriculture, Water Resources and Fisheries or the Pasteur Institute of Tunis (IPT). [2, 3, 4]

[1] World Health Organization (WHO). "Emergencies preparedness, response: Tunisia".
http://www.who.int/csr/don/archive/country/tun/en/. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

[3] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence suggesting that there is an electronic reporting surveillance system that collects ongoing or real-time laboratory data in Tunisia. According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, Tunisia's entire reporting surveillance data is in paper format. The JEE adds that the country with the assistance of the Robert Koch Institute and the German Agency for International Cooperation (GIZ), the National Observatory for New and Emerging Diseases (ONMNE), piloted an event-based surveillance system in five regions, with a plan to scale up the pilot to nationwide by 2017. [1] However, there is no evidence of the scale up so far. There is no information on an electronic reporting surveillance system in Tunisia through the websites of the Ministry of Health, Ministry of Agriculture, Water Resources and Fisheries or the Pasteur Institute of Tunis (IPT). [2, 3, 4]

[1] World Health Organization (WHO). "Emergencies preparedness, response: Tunisia".
http://www.who.int/csr/don/archive/country/tun/en/. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 0

There is no publicly available evidence suggesting that electronic health records (EHR) commonly in use in Tunisia. Tunisian healthcare system profile by the World Health Organization (WHO), published in 2015, indicates that there was no action taken for a National EHR system or any legislation for the use of such system in the country. [1] The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions a distinct lack of common use of electronic reporting systems for medical records and for health systems generally, and highlighting that implementing electronic systems would increase productivity. [2] The Ministry of Health website provides information on Health Information System (SIS) to be completed by 2020. [3] The Pasteur Institute of Tunis (IPT) website does not provide information on HER. [4]

[1] World Health Organisation (WHO). 2015. "Tunisia."
[https://apps.who.int/iris/bitstream/handle/10665/254904/EMROPUB_2017_EN_19615.pdf?sequence=1&isAllowed=y].
Accessed 1 March 2021.
[2] World Health Organization (WHO). "Emergencies preparedness, response: Tunisia".

http://www.who.int/csr/don/archive/country/tun/en/. Accessed 1 March 2021.
[3] Ministry of Health of the Republic of Tunisia (MoH). "Program of Development of "Digital Health" in Tunisia. [http://www.santetunisie.rns.tn/fr/prestations/programme-de-d%C3%A9veloppement-de-la-%C2%ABsant%C3%A9-num%C3%A9rique%C2%BB-en-tunisie]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia's public health system has access to electronic health records (HER) of individuals in the country. Tunisian healthcare system profile by the World Health Organization (WHO), published in 2015, indicates that there was no action taken for a National EHR system or any legislation for the use of such system in the country. [1] The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions a distinct lack of common use of electronic reporting systems for medical records and for health systems generally, and highlighting that implementing electronic systems would increase productivity. [2] The Ministry of Health website provides information on Health Information System (SIS) to be completed by 2020. [3] The Pasteur Institute of Tunis (IPT) website does not provide information on HER. [4]

[1] World Health Organisation (WHO). 2015. "Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/254904/EMROPUB_2017_EN_19615.pdf?sequence=1&isAllowed=y]. Accessed 1 March 2021.
[2] World Health Organization (WHO). "Emergencies preparedness, response: Tunisia". http://www.who.int/csr/don/archive/country/tun/en/. Accessed 1 March 2021.
[3] Ministry of Health of the Republic of Tunisia (MoH). "Program of Development of "Digital Health" in Tunisia. [http://www.santetunisie.rns.tn/fr/prestations/programme-de-d%C3%A9veloppement-de-la-%C2%ABsant%C3%A9-num%C3%A9rique%C2%BB-en-tunisie]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that there are data standards in Tunisia to ensure data is comparable (e.g., ISO standards). According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, Tunisia is accredited to the International Organization for Standardization (ISO) through the Tunisian Accreditation Council (TUNAC). However, the same source mentions a distinct lack of common use of electronic reporting systems for medical records and for health systems generally, and highlighting that implementing electronic systems would increase productivity. [1] Although the ISO website notes that Tunisia has had standardization codes for the representation of names of countries and their subdivisions (3166-2) for 24 governorates since 1988; [2] there is no evidence of health electronic records (HER) in Tunisia. Tunisian healthcare system profile by the World Health Organization (WHO), published in 2015, indicates that there was no action taken for a

National EHR system or any legislation for the use of such system in the country. [3] Neither the website of the Ministry of Health nor the Pasteur Insitute of Tunis (IPT) provide further evidence on data standards in Tunis. [4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] International Standardization Organisation. "Online Browsing Platform (OBP) Tunisia ISO 3166- Codes for the representation of names of countries and their subdivisions." [https://www.iso.org/obp/ui/#iso:code:3166:TN]. Accessed 1 March 2021.
[3] World Health Organisation (WHO). 2015. "Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/254904/EMROPUB_2017_EN_19615.pdf?sequence=1&isAllowed=y]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

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

2.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available 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) in Tunisia. The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that the event-based surveillance system (EBS) and surveillance data are shared between human health and animal health sectors, although it is unclear if the EBS system has been expanded past its original pilot implementation. [1] The Laboratory of Animal Pathology of The Pasteur Institute of Tunis (IPT), was established in 1989 to surveil infectious animal diseases and works under the Directorate General of Veterinary Services of the Ministry of Agriculture, Hydraulic Resources, and Fisheries. This laboratory is designated for surveilling key diseases including Newcastle Disease, Avian Influenza, and sheep pox domestically and participates in meeting regional and international standard. There is no information, nonetheless, on whether data sharing mechanisms are in place. [2] There is no relevant information on the websites of the Ministry of Environment and Sustainable Development, the Ministry of Health, or the Pasteur Insitute of Tunis(IPT). [3, 4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis. "Laboratory of Animal Pathology." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=189&Itemid=549]. Accessed 1 March 2021.
[3] Ministry of Environment and Sustainable Development of the Republic of Tunisia. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT).

[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia makes de-identified health surveillance data on infectious diseases publicly available via reports (or other format) on government websites (such as the Ministry of Health, Ministry of Agriculture, or similar). While the Joint External Evaluation (JEE) for Tunisia, published in 2016, states that Tunisia has a data collection and dissemination system for health information about communicable diseases, [1] there is no evidence of such system through the websites of the Ministry of Health or the Pasteur Institute of Tunis (IPT). [2, 3] The only publicly available de-identified health surveillance data is for rabies and is last updated in 2016 on the National Commission Against Rabies website. [4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[4] The National Commission Against Rabies, Ministry of Health of the Republic of Tunisia. "The Epidemiological Situation of Rabies in Tunisia." [http://www.rage.tn/Fr/situation-en-tunisie_11_269]. Accessed 1 March 2021.

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of de-identified COVID-19 surveillance data (including details such as daily case count, mortality rate, etc) available via daily reports (or other formats) on government websites (such as the Ministry of Health, or similar) in Tunisia. There is no evidence of COVID-19 statistics in Tunisia through the website of the Ministry of Health, including the COVID-19 portal. [1, 2] The National Observatory of New and Emerging Diseases (Observatoire national des maladies nouvelles et émergentes) website provides some updates on COVID-19 statics, but there is no evidence rthat data is published on daily basis. [3] No further evidence is provided through the website of the Pasteur Insitute of Tunis (IPT). [4]

[1] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[2] Ministry of Health. "COVID-19 Portal." [http://coronavirus.rns.tn/publications/]. Accessed 1 March 2021.
[3] National Observatory of New and Emerging Diseases. [https://www.onmne.tn/?p=10636]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT).

[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of legislation and/or regulations that safeguard the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities in Tunisia. Articles 14 as well as Chapter V, Articles 53 through 74 ofLaw no. 2004-63 passed 27 July 2004 on Protection of Personal Data, discuss regulations of health information, particularly utilized by public authorities, such as local government, federal government, public security, and public health institutions. Article 14 states that "the processing of personal data that reveals, directly or indirectly, the racial and genetic origins, religious beliefs, political, philosophical and trade union belonging or health is prohibited. However, the prohibition provided for the above shall not apply to the processing for which the data has given his explicit consent by any means that leave a written trace or if the processing relates to personal data which have become obviously public or if the processing is necessary for historical or scientific purposes or if the processing is necessary for the protection of the data subject's vital interests." Article 53 specifies Chapter V applies to personal data carried out by public health institutions and public institutions "whenever they use prerogatives of public power in order to accomplish their mission."[1, 2] The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information on health data privacy; [3] neither do the websites of the Pasteur Institute of Tunis (IPT) and Ministry of Health websites. [4, 5]

[1] Ministry of Justice. 2004. "Tunisian Law on Protection of Personal Data No. 2004-63." [https://media2.mofo.com/documents/The+Organic+Act+2004-63.pdf]. Accessed 1 March 2021.
[2] Advox Global Voices. 21 February 2017. "Privacy is Hard to Protect in Tunisia, Thanks to Politics." [https://advox.globalvoices.org/2017/02/21/privacy-is-hard-to-protect-in-tunisia-thanks-to-politics/]. Accessed 1 March 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of legislation and/or regulations safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, and protections from cyber attacks

(e.g., ransomware). Law No. 63-2004 on the Protection of Personal Data does not include cybersecurity. [1] Although Tunisia has numerous laws specifically relating to cybersecurity challenges including Law No. 2004-5 of 3 February 2004 that sets the general rules for the protection of computer systems and networks, and Circular No. 19 of 11 April 2007 on cybersecurity measures in public institutions which mandates that public entities must prevent cybersecurity incidents; however, none of them address the privacy of personal health data. [2] Law 2000-83 on Electronic Commerce and Exchanges listed on the United Nations Conference on Trade and Development website, does not address personal health data; [3] neither does the Joint External Evaluation (JEE) for Tunisia, published in 2016. [4] The websites of the Ministry of Health and the Pasteur Institute of Tunis (IPT) websites do not mention cybersecurity or protection of health data. [5, 6]

[1] Ministry of Justice. 2004. "Law on the Protection of Personal Data No. 63-2004." [https://media2.mofo.com/documents/The+Organic+Act+2004-63.pdf]. Accessed 1 March 2021.
[2] International Comparative Legal Guides. 2018. "Applicable Laws, Cybersecurity 2019, Tunisia." [https://iclg.com/practice-areas/cybersecurity-laws-and-regulations/tunisia#chaptercontent2]. Accessed 1 March 2021.
[3] United Nations Conference on Trade and Development. "Tunisia: Consumer Protection Laws." [https://unctad.org/en/Pages/DTL/STI_and_ICTs/ICT4D-Legislation/CountryDetail.aspx?country=tn]. Accessed 1 March 2021.
[4] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[6] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.4.5 International data sharing

2.4.5a

Has the government made a commitment via public statements, legislation and/or a cooperative agreement to share surveillance data during a public health emergency with other countries in the region?
Yes, commitments have been made to share data for more than one disease, Yes, commitments have been made to share data only for one disease = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Tunisian government made a commitment via public statements, legislation and/or a cooperative agreement to share surveillance data during a public health emergency with other countries in the region for one or more diseases.

In 2018, the Ministry of Health made a commitment during the African seminar on communication in public health emergency, with the participation of 25 countries from all sub-regions of the continent, to set a communication strategy as a preventive measure during a public health emergency and that Tunisia's commitment is to fully assume this role within the International Health Regulations. However, there are no details on whether this includes sharing of data during public health emergency. [1] Additionally, the Ministry of Health shares data with the public via their website including a scrolling newsfeed with up to date public health information. For example, on 18 October 2018, the MoH published a bulletin about the number of West Nile virus cases in the country, but it is unclear if the data is updated regularly and is shared with other countries in the region. [2] No relevant information is provided through the websites of the Ministry of Health or the Pasteur Insitute of Tunis (IPT). [3, 4]

[1] Espace Manager. 4 April 2018. "25 African countries debate in Tunis on the prevention and health risks management". [https://www.espacemanager.com/25-pays-dafrique-en-debat-tunis-sur-la-prevention-et-la-gestion-des-risques-sante.html]. Accessed 1 March 2021.
[2] Ministry of Health of the Republic of Tunisia.18 October 2018. "Bulletin No. 2 Response to West Nile infections in Tunisia." [http://www.santetunisie.rns.tn/ar/%D8%A3%D8%AE%D8%A8%D8%A7%D8%B1-%D9%88-%D9%85%D8%B3%D8%AA%D8%AC%D8%AF%D8%A7%D8%AA/799-bulletin-n%C2%B02-de-veille-et-de-riposte-aux-infections-a-virus-west-nile-en-tunisie]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no publicly available evidence of a national system in place to provide support at the sub-national level (e.g. training, metrics standardization and/or financial resources) to conduct contact tracing in the event of an active or future public health emergency. There is no evidence of such a national system through the websites of the Ministry of Health, or the Pasteur Insitute of Tunis (IPT). [1, 2]. The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information relevant to contact tracing during health emergencies. [3]

[1] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[2] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.

2.5.1b

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia 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. In response to COVID-19, the Ministry of Health published multiple quarantine manuals that provide details about the isolation space and duration; however, none of the manuals provide information on economic support and medical attention provided to suspected cases. [1, 2] The websites of the Ministry of Health, including the COVID-19 portal, the Pasteur Insitute of Tunis (IPT), and the Ministry of Defence do not provide information on wraparound services that enable cases and suspected cases to self-isolate as recommended. [3, 4, 5, 6]

[1] Ministry of Health. "Manual for Health Isolation Centers - COVID-19." [http://www.santetunisie.rns.tn/images/guide-confinement.pdf]. Accessed 1 March 2021.
[2] Ministry of Health. "Health Isolation for COVID-19 Patients." [http://www.santetunisie.rns.tn/images/document-technique-isolement-covid.pdf]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] Ministry of Health. "COVID-19 Portal." [http://coronavirus.rns.tn/publications/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[6] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Tunisia makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports (or other format) on government websites (such as the Ministry of Health, or similar). There is no evidence of COVID-19 statistics in Tunisia through the website of the Ministry of Health, including the COVID-19 portal. [1, 2] The National Observatory of New and Emerging Diseases (Observatoire national des maladies nouvelles et émergentes) website provides some updates on COVID-19 statics, but there is no evidence of contact tracing or that data is published on daily basis. [3] No further evidence is provided through the website of the Pasteur Insitute of Tunis (IPT). [4]

[1] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[2] Ministry of Health. "COVID-19 Portal." [http://coronavirus.rns.tn/publications/]. Accessed 1 March 2021.
[3] National Observatory of New and Emerging Diseases. [https://www.onmne.tn/?p=10636]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

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

Although according to local news agencies, Tunisia introduced restrictions on travelers to the country in response to COVID-19, such as negative PCR test in addition to quarantine; there is no evidence that this comes as part of a joint plan or agreement between the public health system and border control authorities to respond to the COVID-19 outbreak. [1, 2] 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 and contact tracing during public health emergency through the websites of the Ministry of Health, the Pasteur Insitute of Tunis(IPT), the Ministry of Defense, and the Transportation Gate. [3, 4, 5, 6]

[1] Ultra Tunis. "New Restrictions on Travelers to Tunis." [https://ultratunisia.ultrasawt.com/كورونا-إجراءات-جديدة-خاصة-بالوافدين-إلى-تونس/الترا-تونس/مجتمع/أخبار]. Accessed 1 March 2021.
[2] Assabah News. "To Travelers to Tunisia: COVID-19 Preventive Measures and Restrictions." [http://www.assabahnews.tn/article/253996/تهم-جميع-الوافدين-الى-تونس-كل-التفاصيل-حول-الإجراءات-الجديدة-للتوقي-من-فيروس-كورونا]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[5] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[6] Transportation Gate. [http://www.transport.tn]. Accessed 1 March 2021.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

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

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

Current Year Score: 1

There is evidence that Tunisia has applied epidemiology training program (such as FETP) and that there are resources provided by the government to send citizens to another country to participate in applied epidemiology training programs (such as FETP). According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country was in the process

of establishing an FETP with the Eastern Mediterranean Public Health Network (EMPHNET) and previously sent trainees to FETPs run by MediPIET, FETP Morocco, and to universities in some countries including Belgium, France, and the United Kingdom. [1] As of September 2017, the Ministry of Health and the National Observatory for Emerging and Re-emerging Diseases (ONMNE) launched the Tunisia Field Epidemiology Training Program (T-FETP). The program is a one-year program of five modules for medical residents (the first cohort included 14 physicians and 1 veterinarian) to learn about "surveillance of public health, epidemics investigation, priority diseases, complex emergencies, and biosecurity issues, and research methodology." [2] The Ministry of Health website and the Pasteur Insitute of Tunis (IPT) website do not provide further information on the T-FETP. [3, 4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Eastern Mediterranean Public Health Network (EMPHNET). 2017. "Tunisia Ministry of Health Launches Field Epidemiology Training Program." [http://emphnet.net/en/media-center/news/2017/tunisia-ministry-of-health-launches-field-epidemiology-training-program/]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence that the Tunisian Field Epidemiology Training Program (T-FETP) are explicitly inclusive of animal health professionals or is there a specific animal health field epidemiology training program offered (such as FETPV). The first cohort of T-FETP through The Eastern Mediterranean Public Health Network (EMPHNET) and the Centre for Disease Control and Prevention (CDC), which graduated in September 2017 included 14 physicians and 1 veterinarian. [1] The Ministry of Health website and the Pasteur Insitute of Tunis (IPT) website do not provide further information on the T-FETP. [2, 3]

[1] The Eastern Mediterranean Public Health Network (EMPHNET). 2017. "Tunisia Ministry of Health Launches Field Epidemiology Training Program." [http://emphnet.net/en/media-center/news/2017/tunisia-ministry-of-health-launches-field-epidemiology-training-program/]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 0

There is insufficiently available evidence of an overarching national public health emergency response plan in place in Tunisia which addresses planning for multiple communicable diseases with epidemic or pandemic potential.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that the National Plan for Preparedness, Response, and Resilience for Diseases with Epidemic Potential is in place; [1] however, the plan per se is not publicly available, therefore, it is unclear if it addresses multiple diseases with epidemic potential and can be considered an overarching national public health emergency response plan.

The JEE further references legislation and policy documents on emergency response including circular 50-2002 (hospital plans for mass influx management), the Handbook of Coordination of Relief Operations between the Ministry of the Interior and the Ministry of Health (MoH), 2000, and Note 236/2010 of 27 February 2010, Creation of Strategic Health Operation Centre (SHOC room). The JEE includes most detail on the SHOC room, initially created in response to H5N1 influenza, but is meant to address any public health emergency and is used to create contingency plans for other pandemic diseases such as Ebola. [1] However, none of these are overarching national plans.

According to a Pasteur Institute of Tunis (IPT) document, published in 2016, there is in place an "Early Warning System in Tunisia: Evolution, Challenges, and Place of Environment and Modelling," specifically for MERS-CoV [2] The school and university medicine section of the MoH website addresses contingency plans on diseases related emergencies and accidents. [3] However, these plans are not overarching response plans that include planning for multiple communicable diseases with epidemic or pandemic potential.

There are no completed World Organisation for Animal Health (OIE) PVS Evaluation Reports for Tunisia. [4] No further evidence is found through the website of the Ministry of Health. [5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis (IPT), Linkedin Slideshare. 19 October 2016. "Early Warning System in Tunisia: Evolution, Challenges and Place of Environment and Modeling." [https://www.slideshare.net/Pasteur_Tunis/early-warning-system-in-tunisia-evolution-challenges-and-place-of-environment-and-modeling]. Accessed 1 March 2021.
[3] Ministry of Health of the Republic of Tunisia. "Management of School and University Medicine." [http://www.santetunisie.rns.tn/ar/2016-07-27-18-21-04/%D8%A7%D9%84%D8%B5%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%AC%D8%A7%D9%85%D8%B9%D9%8A%D8%A9. Accessed 1 March 2021.
[4] World Organisation for Animal Health (OIE). 27 February 2019. "PVS Evaluation Reports." [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

3.1.1b

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

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

Current Year Score: 0

There is no publicly available evidence that an overarching plan has it been updated in the last 3 years in Tunisia; there is insufficiently available evidence of an overarching national public health emergency response plan in place.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that the National Plan for Preparedness, Response and Resilience for Diseases with Epidemic Potential is in place; [1] however, the plan per se is not publicly available, therefore, it is unclear if it addresses multiple diseases with epidemic potential and can be considered an overarching national public health emergency response plan.

The JEE further references legislation and policy documents on emergency response including circular 50-2002 (hospital plans for mass influx management), the Handbook of Coordination of Relief Operations between the Ministry of the Interior and the Ministry of Health (MoH), 2000, and Note 236/2010 of 27 February 2010, Creation of Strategic Health Operation Centre (SHOC room). The JEE includes most detail on the SHOC room, initially created in response to H5N1 influenza, but is meant to address any public health emergency and is used to create contingency plans for other pandemic diseases such as Ebola. [1] However, none of these are overarching national plans.

According to a Pasteur Institute of Tunis (IPT) document, published in 2016, there is in place an "Early Warning System in Tunisia: Evolution, Challenges and Place of Environment and Modelling," specifically for MERS-CoV; but does not include activities or policy changes after 2014. [2] The school and university medicine section of the MoH website addresses contingency plans on diseases related emergencies and accidents. [3] However, these plans are not overarching response plans that include planning for multiple communicable diseases with epidemic or pandemic potential.

There are no completed World Organisation for Animal Health (OIE) PVS Evaluation Reports for Tunisia. [4] No further evidence is found through the website of the Ministry of Health. [5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis (IPT), Linkedin Slideshare. 19 October 2016. "Early Warning System in Tunisia: Evolution, Challenges and Place of Environment and Modeling." [https://www.slideshare.net/Pasteur_Tunis/early-warning-system-in-tunisia-evolution-challenges-and-place-of-environment-and-modeling]. Accessed 1 March 2021.
[3] Ministry of Health of the Republic of Tunisia. "Management of School and University Medicine." [http://www.santetunisie.rns.tn/ar/2016-07-27-18-21-04/%D8%A7%D9%84%D8%B5%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%AC%D8%A7%D9%85%D8%B9%D9%8A%D8%A9. Accessed 1 March 2021.
[4] World Organisation for Animal Health (OIE). 27 February 2019. "PVS Evaluation Reports." [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

3.1.1c

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

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

Current Year Score: 0

There is no publicly available evidence that Tunisia has an overarching plan that includes considerations for pediatric and/or other vulnerable populations; there is insufficiently available evidence of an overarching national public health emergency response plan in place.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that the National Plan for Preparedness, Response and Resilience for Diseases with Epidemic Potential is in place; [1] however, the plan per se is not publicly available, therefore, it is unclear if it addresses multiple diseases with epidemic potential or if it includes considerations for pediatric and/or other vulnerable populations.

The JEE further references legislation and policy documents on emergency response including: circular 50-2002 (hospital plans for mass influx management), the Handbook of Coordination of Relief Operations between the Ministry of the Interior and the Ministry of Health (MoH), 2000, and Note 236/2010 of 27 February 2010, Creation of Strategic Health Operation Centre (SHOC room). The JEE includes most detail on the SHOC room, initially created in response to H5N1 influenza, but is meant to address any public health emergency and is used to create contingency plans for other pandemic diseases such as Ebola. [1] However, none of these are overarching national plans and it is unclear whether they include considerations for pediatric and/or other vulnerable populations.

According to a Pasteur Institute of Tunis (IPT) document, published in 2016, there is in place an "Early Warning System in Tunisia: Evolution, Challenges and Place of Environment and Modelling," specifically for MERS-CoV; however, it does not include activities or policy changes after 2014 and there is no evidence that it includes considerations for vulnerable populations. [2] The school and university medicine section of the MoH website addresses contingency plans on diseases related emergencies and accidents. [3] However, these plans are not overarching response plans that include planning for multiple communicable diseases with epidemic or pandemic potential.

There are no completed World Organisation for Animal Health (OIE) PVS Evaluation Reports for Tunisia. [4] No further evidence is found through the website of the Ministry of Health. [5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis (IPT), Linkedin Slideshare. 19 October 2016. "Early Warning System in Tunisia: Evolution, Challenges and Place of Environment and Modeling." [https://www.slideshare.net/Pasteur_Tunis/early-warning-system-in-tunisia-evolution-challenges-and-place-of-environment-and-modeling]. Accessed 1 March 2021.
[3] Ministry of Health of the Republic of Tunisia. "Management of School and University Medicine." [http://www.santetunisie.rns.tn/ar/2016-07-27-18-21-04/%D8%A7%D9%84%D8%B5%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%AF%D8%B1%D8%B3%D9%8A%D8%A9-%D9%88%D8%A7%D9%84%D8%AC%D8%A7%D9%85%D8%B9%D9%8A%D8%A9. Accessed 1 March 2021.
[4] World Organisation for Animal Health (OIE). 27 February 2019. "PVS Evaluation Reports." [http://www.oie.int/solidarity/pvs-evaluations/pvs-evaluation-reports/]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Tunisia has specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response. There is no evidence of a specific mechanism for this purpose in the Joint External Evaluation (JEE) for Tunisia, published in 2016, despite the general discussion of the private sector collaboration and a 2015 ministerial order on communicable diseases. [1] The "Roles and Functions" section of the Ministry of Health website discusses their role in coordinating with the private sector, but does not mention emergency management specifically. [2] The "Legislative and Institutional Framework" page of the Ministry of Environment and Sustainable development website discuss its role in developing policies with public and private stakeholders, but does not discuss emergency management. [3]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health of the Republic of Tunisia. "The Roles and Functions of the Ministry."

[http://www.santetunisie.rns.tn/ar/2016-07-27-18-20-27/2016-07-31-17-59-00]. Accessed 1 March 2021.
[3] Ministry of Environment and Sustainable Development of the Republic of Tunisia. "Legislative and Institutional Framework." [http://www.environnement.gov.tn/index.php?id=29&L=1#.XCZdJ89Kg0o]. Accessed 1 March 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 0

There is no publicly available evidence of a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic in Tunisia for one or more diseases. There is no mention of NPIs in the COVID-19 Manual for Health Isolation Centers, or the Health Isolation for COVID-19 Patients. [1, 2] The website of the Ministry of Health, including the COVID-19 Portal, the Ministry of Defense and the Pasteur Institute of Tunis (IPT) website do not provide information on this matter. [3, 4, 5, 6]

[1] Ministry of Health. "Manual for Health Isolation Centers - COVID-19." [http://www.santetunisie.rns.tn/images/guide-confinement.pdf]. Accessed 1 March 2021.
[2] Ministry of Health. "Health Isolation for COVID-19 Patients." [http://www.santetunisie.rns.tn/images/document-technique-isolement-covid.pdf]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] Ministry of Health. "COVID-19 Portal." [http://coronavirus.rns.tn/publications/]. Accessed 1 March 2021.
[5] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[6] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia activated their national emergency response plan for an infectious disease outbreak in the past year; neither there is evidence that Tunisia completed a national-level biological

threat-focused exercise (either with WHO or separately) in the past year.

According to the World Health Organization (WHO) Disease Outbreak News page, Tunisia did not report a disease outbreak in 2020, 2019 or 2018. [1, 2, 3] Tunisia's country profile on the WHO Regional Office for Eastern Mediterranean does not provide evidence suggesting that the country activated their national emergency response plan for an infectious disease outbreak in the past year. [4] The WHO Simulation Exercise page states that Tunisia last completed a national-level biological threat-focused exercise in 2017. [5] No further evidence is provided neither on the activation of the national response plan nor a biological threat-focused exercise through the websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), and the Ministry of Defense. [6, 7, 8]

[1] World Health Organization Disease Outbreak News. 2020. [https://www.who.int/csr/don/archive/year/2020/en/]. Accessed 1 March 2021.
[2] World Health Organization Disease Outbreak News. 2019. [https://www.who.int/csr/don/archive/year/2019/en/]. Accessed 1 March 2021.
[3] World Health Organization Disease Outbreak News. 2018. [https://www.who.int/csr/don/archive/year/2018/en/]. Accessed 1 March 2021.
[4] World Health Organization Regional Office for Eastern Mediterranean. "Tunisia." [http://www.emro.who.int/fr/countries/tun/index.html]. Accessed 1 March 2021.
[5] World Health Organization Simulation Exercise. "Tunisia." [http://www.emro.who.int/fr/countries/tun/index.html]. Accessed 1 March 2021.
[6] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[7] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[8] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.

3.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence that Tunisia in the past year identified a list of gaps and best practices in response (either through an infectious disease response or a biological-threat focused exercise) and developed a plan to improve response capabilities. Although there is an After-Action Review through the World Health Organization (WHO) conducted in April 2019; [1] there is no evidence of a review that identified a list of gaps and best practices through the regional or the Tunisia country pages of the WHO website. [2, 3] There is no evidence of such a review on the Ministry of Health or Ministry of Environment and Sustainable Development websites. [4, 5]

[1] World Health Organization (WHO). 2019. "After Action Review, Tunisia." [https://extranet.who.int/sph/calendar]. Accessed 1 March 2021.
[2] World Health Organization (WHO), Regional Office for the Eastern Mediterranean. 2019. [http://www.emro.who.int/index.html]. Accessed 1 March 2021.
[3] World Health Organisation (WHO), Regional Office for the Eastern Mediterranean. 2019. "Tunisia".

[http://www.emro.who.int/fr/countries/tun/index.html]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] Ministry of Environment and Sustainable Development of the Republic of Tunisia. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has undergone a national-level biological threat-focused exercise that has included private sector representatives. The World Health Organization (WHO) Simulation Exercise page states that Tunisia last completed a national-level biological threat-focused exercise in 2017. [1] No further evidence is provided on a biological threat-focused exercise through the websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), and the Ministry of Defense. [2, 3, 4]

[1] World Health Organization Simulation Exercise. "Tunisia." [http://www.emro.who.int/fr/countries/tun/index.html]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[4] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of an Emergency Operations Center (EOC) in Tunisia. According to the Joint External Evaluation (JEE) for Tunisia,published in 2016, there is an EOC in place "for functions including public health science (epidemiology, medical and other subject-matter expertise), public communications and partner liaison." [1] Additionally, the Ministry of Health set up the Strategic Health Operations Centre (SHOC room) in 2009 to respond to the pandemic influenza A (H1N1). The JEE mentions that the SHOC's role was in the contingency plans for handling the influx of refugees and migrants in southern Tunisia (2014-2016) as well as to handle Ebola (2014). Simulations and tests have been conducted, but the regularity of their occurrence is unclear. [1] The contact information for the SHOC is on the Ministry of Health website, but no additional information is available. [2]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health of the Republic of Tunisia. "Contact Us." [http://www.santetunisie.rns.tn/ar/%D8%A5%D8%AA%D8%B5%D9%84-%D8%A8%D9%86%D8%A7]. Accessed 1 March 2021.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Emergency Operations Center (EOC) in Tunisia is required to conduct a drill for a public health emergency scenario at least once per year or that the EOC conducts a drill at least once per year.

The Ministry of Health initially set up the Strategic Health Operations Centre (SHOC) room in 2009 to respond to the pandemic influenza A (H1N1). The Joint External Evaluation (JEE)for Tunisia, published in 2016, discusses the SHOC room's role in contingency plans for handling the influx of refugees and migrants in southern Tunisia (2014-2016) as well as to handle Ebola (2014). The JEE notes that simulations and tests have been conducted, but the regularity of their occurrence is unclear. [1]

Tunisia participated in and hosted the first Africa-Arab Platform on Disaster Risk Reduction 9-13 October 2018 as part of their commitment to the Sendai framework; however, it is unclear if the SHOC room specifically participated or if such meetings are annual. [2, 3] No further information relevant to EOC is available on the Ministry of Health or Ministry of Environment and Sustainable Development websites. [4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] United Nations Office for Disaster Risk Reduction (UNISDR). 2018. "Africa-Arab Platform on Disaster Risk Reduction." [https://www.undrr.org/arab-states-0#Countries]. Accessed 1 March 2021.
[3] United Nations Office for Disaster Risk Reduction (UNISDR). 14 October 2018. "Africa, Arab States to deliver on Sendai." [https://www.unisdr.org/archive/61210]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the Emergency Operations Center (EOC) in Tunisia conducted within the last year a coordinated emergency response or emergency response exercise was activated within 120 minutes of the identification of the public health emergency/scenario. The Ministry of Health initially set up the Strategic Health Operations Centre (SHOC) room in 2009 to respond to the pandemic influenza A (H1N1). The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that simulations and tests have been conducted, but the regularity of their occurrence is not mentioned. [1] No further information relevant to EOC or the SHOC is available on the Ministry of Health or Ministry of Environment and Sustainable Development websites. [2, 3]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

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

Current Year Score: 1

There is publicly available evidence suggesting that public health and national security authorities in Tunisia have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack); however, there is insufficient evidence of standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack).

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, "several drills have taken place to test the preparedness level to respond to chemical, biological, and radiation threats in a coordinated manner." [1]

Tunisia participated in bio-threat reduction exercises with the World Organization for Animal Health (OIE) in July 2017 at the Regional Table Top Exercise for Countries of the Middle East and North Africa Region to increase collaboration between veterinary health and security sectors. The event focused on agroterrorism and the exercises explored "the different aspects of the surveillance, the link between animal health and law enforcement sectors and their collaborative work, the implementation of a common framework on security, the preparedness and response, the biosecurity, the communication, the capacity building". Additionally, "one scenario was about the intentional release of a pathogen, the Rinderpest Virus, which is only stored in laboratories since the disease has been eradicated." [2]

According to the JEE, "coordination and collaboration between the public health and security sectors to respond to public health events also exists at points of entry and is also supported by laws and decrees. Protocols and SOPs are in place setting out the responsibilities of each ministry." [1] Nonetheless, such protocols and SOPs are not publicly available. There is no further information on this matter through the Ministry of Defence, Ministry of Health, and Ministry of Environment and Sustainable Development websites. [3, 4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] World Organisation for Animal Health (OIE). 13 July 2017. "Regional Table Top Exercise for Countries of the Middle East and North Africa Region." [https://rr-africa.oie.int/en/news/regional-table-top-exercise/]. Accessed 1 March 2021.
[3] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence of a risk communication plan (or other legislation, regulation or strategy document used to guide national public health response) that outlines how messages will reach populations and sectors with different communications needs (eg different languages, location within the country, media reach) in Tunisia.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that there is a draft National Risk Communications Strategy that has yet to be implemented, without providing further details about its content. Risk communications and general media relations are managed by a media team in the cabinet of the Minister of Health. Communications within the healthcare community are mentioned, but outreach to the public is not discussed. The JEE also states that ministries use social media as well as national newspapers and television to reach multiple audiences. [1]

There is no information on a risk communication plan or strategy through the National Agency for Sanitary and Environmental Products (ANCSEP), Ministry of Health, Ministry of Environment and Sustainable Development websites. [2, 3, 4]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.

[2] National Agency for Sanitary and Environmental Products (ANCSEP). [http://www.ancsep.rns.tn/]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has 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.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that there is a draft National Risk Communication Strategy and a draft Emergency Preparedness Plan for public health and humanitarian emergencies; however, both need to be operationalized across the Ministry of Health and other partners. The National Risk Communication Strategy utilizes a communication staff across national, regional, and local levels including a media team at the Ministry of Health, and Observatoire National des Maladies Nouvelles et Emergentes (ONMNE), the Pasteur Institute of Tunis, and the National Agency for Sanitary and Environmental Products (ANCSEP). [1]

The draft National Risk Communication Strategy is part of a BMZ-funded project implemented by GIZ, Robert-Koch Institute, Bernard Nocht Institute for Tropical Medicine, Friedrich Loeffler Institute, Bundeswehr Institute of Microbiology. The Initial phase began in November 2015 and the latest phase conducted from September 2017 to September 2018. Subsequent to its completion the strategy will be integrated into the broader National Epidemic Preparedness plan, but it is unclear if this draft is the aforementioned draft emergency preparedness plan or another document. The content of the National Risk Communication Strategy is not publicly available. [2]

The Ministry of Health, National Agency for Sanitary and Environmental Products (ANCSEP), Ministry of Environment and Sustainable Development, and the Pasteur Institute of Tunis (IPT) websites do not provide information on this draft strategy or other relevant documents. [3, 4, 5,6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. "Development of a national strategy in risk and crisis communication in Tunisia and support of the implementation of the strategy in Tunisia and Morocco." [http://www.santetunisie.rns.tn/images/docs/anis/tdr1342017.pdf]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] National Agency for Sanitary and Environmental Product Control (ANCSEP). [http://www.ancsep.rns.tn/]. Accessed 21 February 2021.

[5] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.
[6] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that the risk communication plan (or other legislation, regulation, or strategy document used to guide national public health response) designates a specific position within the Tunisian government to serve as the primary spokesperson to the public during a public health emergency.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that there is a draft National Risk Communication Strategy and a draft Emergency Preparedness Plan for public health and humanitarian emergencies; however, both need to be operationalized across the Ministry of Health and other partners. The National Risk Communication Strategy utilizes a communication staff across national, regional, and local levels including a media team at the Ministry of Health, and Observatoire National des Maladies Nouvelles et Emergentes (ONMNE), the Pasteur Institute of Tunis, and National Agency for Sanitary and Environmental Products (ANCSEP). However, the JEE does not mention that there a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. [1]

The draft National Risk Communication Strategy is part of a BMZ-funded project implemented by GIZ, Robert-Koch Institute, Bernard Nocht Institute for Tropical Medicine, Friedrich Loeffler Institute, Bundeswehr Institute of Microbiology. The Initial phase began in November 2015 and the latest phase conducted from September 2017 to September 2018. Subsequent to its completion the strategy will be integrated into the broader National Epidemic Preparedness plan, but it is unclear if this draft is the aforementioned draft emergency preparedness plan or another document. The content of the National Risk Communication Strategy is not publicly available and it remains unknown if there is a specific position within the government designated as the primary spokesperson to the public during health emergencies. [2]

The Ministry of Health, National Agency for Sanitary and Environmental Products (ANCSEP), Ministry of Environment and Sustainable Development, and the Pasteur Institute of Tunis (IPT) websites do not provide information on the primary spokesperson to the public during health emergencies. [3, 4, 5 ,6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. "Development of a national strategy in risk and crisis communication in Tunisia and support of the implementation of the strategy in Tunisia and Morocco." [http://www.santetunisie.rns.tn/images/docs/anis/tdr1342017.pdf]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] National Agency for Sanitary and Environmental Product Control (ANCSEP). [http://www.ancsep.rns.tn/]. Accessed 21 February 2021.
[5] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1].

Accessed 1 March 2021.
[6] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 1

There is publicly available evidence suggesting that the public health system in Tunisia 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. However, there is insufficient evidence that it regularly utilizes online media platforms to inform the public about public health concerns beyond active emergencies.

The Ministry of Health created a Facebook page in 2011 and has been actively sharing updates about the ministry's activities and active public health concerns. For example, the Ministry publishes on daily basis statistics on COVID-19; also, the Ministry posted in March 2021 on their Facebook page announcements about blood filtering requests and posted updates on the development of clinical research working sessions in the country. [2, 3] The website of the Ministry of Health publishes announcements about such as positions open for recruitment. However, there is no evidence that the ministry's website provides updates and statistics about ongoing public health concerns and/or dispels rumors, misinformation, or disinformation. [4]

[1] Ministry of Health. "Facebook Page." [https://www.facebook.com/santetunisie.rns.tn/]. Accessed 1 March 2021.
[2] Ministry of Health. "Facebook Page."
[https://www.facebook.com/santetunisie.rns.tn/photos/a.724855064220267/3925992340773174/]. Accessed 15 March 2021.
[3] Ministry of Health. "Facebook Page." [https://www.facebook.com/santetunisie.rns.tn/posts/3919231948115880]. Accessed 15 March 2021.
[4] Ministry of Health. "News and Updates." [http://www.santetunisie.rns.tn/ar/أخبار-و-مستجدات]. Accessed 1 March 2021.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no publicly available evidence suggesting that Tunisian senior leaders (president or ministers) have shared misinformation or disinformation on infectious diseases in the past two years. A review of national and international news

agencies including Agence Tunis Afrique Presse, Kapitalis, BBC, CNN and France 24 do not provide information senior leaders shared misinformation or disinformation on infectious diseases in the past two years. [1, 2, 3, 4, 5]

[1] Agence Tunis Afrique Presse. [https://www.tap.info.tn/en]. Accessed 1 March 2021.
[2] Kapitalis. [http://www.kapitalis.com/anbaa-tounes/]. Accessed March 2021.
[3] BBC. [https://www.bbc.com]. Accessed March 2021.
[4] CNN. [https://edition.cnn.com]. Accessed March 2021.
[5] France 24. [https://www.france24.com/en/]. Accessed March 2021.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 66.7

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: 126.31

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: 7.0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 5.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that Tunisia 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. The websites of the Ministry of Health, Ministry of Defense, Ministry of Environment and Sustainable Development and the Tunisian Industry Portal do not provide information on a restriction on the export/import of medical goods due to an infectious disease outbreak. [1, 2, 3, 4] A review of national and international news agencies including Agence Tunis Afrique Presse, Kapitalis, BBC, CNN and France 24 do not provide information relevant to this matter. [5, 6, 7, 8, 9]

[1] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[2] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[3] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.
[4] Tunisian Industry Portal. [http://www.tunisieindustrie.nat.tn/en/home.asp]. Accessed 1 March 2021.
[5] Agence Tunis Afrique Presse. [https://www.tap.info.tn/en]. Accessed 1 March 2021.
[6] Kapitalis. [http://www.kapitalis.com/anbaa-tounes/]. Accessed March 2021.
[7] BBC. [https://www.bbc.com]. Accessed March 2021.
[8] CNN. [https://edition.cnn.com]. Accessed March 2021.
[9] France 24. [https://www.france24.com/en/]. Accessed March 2021.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that Tunisia 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. The websites of the Ministry of Health, Ministry of Defense, Ministry of Environment and Sustainable Development and the Tunisian Industry Portal do not provide information on a restriction on the export/import of non-medical goods due to an infectious disease outbreak. [1, 2, 3, 4] A review of national and international news agencies including Agence Tunis Afrique Presse, Kapitalis, BBC, CNN and France 24 do not provide information relevant to this matter. [5, 6, 7, 8, 9]

[1] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[2] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[3] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.
[4] Tunisian Industry Portal. [http://www.tunisieindustrie.nat.tn/en/home.asp]. Accessed 1 March 2021.
[5] Agence Tunis Afrique Presse. [https://www.tap.info.tn/en]. Accessed 1 March 2021.
[6] Kapitalis. [http://www.kapitalis.com/anbaa-tounes/]. Accessed March 2021.
[7] BBC. [https://www.bbc.com]. Accessed March 2021.
[8] CNN. [https://edition.cnn.com]. Accessed March 2021.
[9] France 24. [https://www.france24.com/en/]. Accessed March 2021.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0 , No = 1

Current Year Score: 0

There is publicly available evidence suggesting that Tunisia implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. The World Health Organization (WHO) Disease Outbreak News does not include an outbreak in Tunisia from 2020, 2019 or 2018. [1, 2, 3] However, according to news agencies, Tunisia in March 2020 closed borders with some countries to prevent the spread of COVID-19, this includes Libya, Algeria, Italy and France. [1, 2] Also, in December 2020, all flights were suspended from Denmark, the United Kingdom, Australia and South Africa. [3] There is no evidence of a ban implemented on travelers arriving from a specific country or countries due to an infectious disease outbreak through the websites of the Ministry of Health, Ministry of Defense, Ministry of Environment and Sustainable Development and the Transportation Gate. [4, 5, 6, 7]

[1] Sky News Arabia. "Tunisia Closes Borders and Reduces Flights due to COVID-19." [https://www.skynewsarabia.com/middle-east/1328090-تونس-تغلق-حدودها-البحرية-وتقلص-الرحلات-الجوية-بسبب-كورونا]. Accessed 1 March 2021.
[2] Al Arabiya.net. "Tunisia Closes their Borders In Response to COVID-19." [https://www.alarabiya.net/north-africa/2020/03/17/تونس-تغلق-حدودها-جواً-وبراً-في-مواجهة-كورونا]. Accessed 1 March 2021.
[3] RT Online. "Tunisia Includes Denmark to the Restricted Countries Due to COVID-19." [https://arabic.rt.com/middle_east/1186549-تونس-تضيف-الدنمارك-إلى-قائمة-حظر-السفر-بسبب-مخاوف-من-كورونا-المتحور/]. Accessed 1 March 2021.

[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] Ministry of Defence of the Republic of Tunisia. "General Direction of the Military Health." [http://www.defense.tn]. Accessed 1 March 2021.
[6] Ministry of Environment and Sustainable Development. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.
[7] Transportation Gate. [http://www.transport.tn]. Accessed 1 March 2021.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 130.25

2017

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 251.36

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 no publicly available evidence suggesting that Tunisia updated its 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.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, states that Tunisia has a multidisciplinary strategy across ministries including the Ministry of Defense and the Ministry of Health. The JEE also notes a long-standing and relatively robust workforce development program at the national level, with gaps in coverage of specialties (veterinary health, field epidemiology, and information systems) primarily occurring at the governorate and district levels. Such gaps are addressed on an ad hoc basis by governors mobilizing and deploying health and non-health sector as well as public and private sector entities. The JEE adds that the workforce strategy "has not been evaluated or updated to suit the evolving country, regional and global context, or country needs and priorities in IHR, for some time." [1] Publicly available information on active workforce development efforts is primarily about the Field Epidemiology Training Program (FETP) through the Eastern Mediterranean Public Health Network (EMPHNET) as the first cohort graduated 30 September 2018. [1, 2]

The Ministry of Health website discusses a workforce and staff development agreement between Tunisia and the European Union, The Support Project for the Reduction of Social Inequalities and Health Care Services of Premiere Line (PAZD II), to be executed between October 2012 and October 2019, but addressing shortages is not discussed in the context of a coherent strategy. [3] There is no evidence of a public workforce strategy on the Ministry of Vocational Training and Employment website and the Ministry of Education website. [4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Eastern Mediterranean Public Health Network (EMPHNET). 2017. "Tunisia Ministry of Health Launches Field Epidemiology Training Program." [http://emphnet.net/en/media-center/news/2017/tunisia-ministry-of-health-launches-field-epidemiology-training-program/]. Accessed 1 March 2021.
[3] Ministry of Health of Republic of Tunisia. "Program to support the development of disadvantaged areas." [http://www.santetunisie.rns.tn/fr/toutes-les-actualites/669-programme-d-appui-au-d%C3%A9veloppement-des-zones-d%C3%A9favoris%C3%A9es-2]. Accessed 1 March 2021.
[4] Ministry of Vocational Training and Employment of the Republic of Tunisia. [http://www.emploi.gov.tn/en/]. Accessed 1 March 2021.
[5] Ministry of Education of the Republic of Tunisia. [http://www.education.gov.tn/?lang=en]. Accessed 1 March 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 218.0

2017

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit and/or patient isolation room/unit located within the country. The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information on the isolation or biocontainment capacity in the country. [1] There is no information available on the isolation or biocontainment capacity through the Ministry of Health or the Pasteur Institute of Tunisia (IPT) websites. [2, 3]. Additionally, an article published by the EuroNHID Working Group in August 2018 mentions that there is no data available for Tunisia about isolation or biocontainment abilities. [4] No information is publicly available on the websites of three of the top hospital and clinic facilities in Tunisiaincluding Clinique Avicenne de Tunis, Clinique Saint Augustin, and Taoufik Hospitals Group. [5, 6, 7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[4] Fusco, F.M., Brouqui, P., Ippolito, G., and the EuroNHID Working Group. 2018. "Highly Infectious DIseases in the Mediterranean Sea Area: Inventory of Isolation Capabilities and Recommendations for Appropriate Isolation." New Microbes and New Infections Volume 26, Supplement 1, S65-S73. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205579/]. Accessed 1 March 2021.
[5] Clinique Avicenne de Tunis. [https://www.cliniqueavicenne.com/en/les-specialites/?categ=16]. Accessed 1 March 2021.
[6] Clinique Saint Augustin. [http://clinique-saint-augustin.com/en/specialists/]. Accessed 1 March 2021.
[7] Taoufik Hopsitals Group. [http://taoufikhospitalsgroup.com/]. Accessed 1 March 2021.

4.1.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years; neither there is evidence that Tunisia developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information on the isolation or biocontainment capacity, expansion or planned expansion in the country. [1] There is no information available on the isolation or biocontainment capacity through the Ministry of Health or the Pasteur Institute of Tunisia (IPT) websites. [2, 3].

Additionally, an article published by the EuroNHID Working Group in August 2018 mentions that there is no data available for Tunisia about isolation or biocontainment abilities. [4] No information is publicly available on the websites of three of the top hospital and clinic facilities in Tunisia including Clinique Avicenne de Tunis, Clinique Saint Augustin, and Taoufik Hospitals Group. [5, 6, 7]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 May 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 May 2021.
[3] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 May 2021.
[4] Fusco, F.M., Brouqui, P., Ippolito, G., and the EuroNHID Working Group. 2018. "Highly Infectious DIseases in the Mediterranean Sea Area: Inventory of Isolation Capabilities and Recommendations for Appropriate Isolation." New Microbes and New Infections Volume 26, Supplement 1, S65-S73. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205579/]. Accessed 1 May 2021.
[5] Clinique Avicenne de Tunis. [https://www.cliniqueavicenne.com/en/les-specialites/?categ=16]. Accessed 1 May 2021.
[6] Clinique Saint Augustin. [http://clinique-saint-augustin.com/en/specialists/]. Accessed 1 May 2021.
[7] Taoufik Hopsitals Group. [http://taoufikhospitalsgroup.com/]. Accessed 1 May 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is no publicly available evidence of 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 in Tunisia.

There is no mention of a national procurement protocol on the Ministry of Health website; although of the ministry's role section of the website, defined by a 1974 decree, is to create a supply and procurement agency for laboratory and hospital needs. [1, 2] A document published in 2006 by the World Bank Human Development Group of the Middle East and North Africa Region, although discusses the improvements of the health care system broadly, does not mention that there is a national procurement protocol in place. [3]

The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not mention any national procurement protocol outside of a self-procurement system for medical supplies. [4] There is no information of a national procurement protocol through the websites of the Ministry of Agriculture, Water Resources and Fisheries, and the Pasteur Institute of Tunis (IPT) websites. [5, 6]

[1] Ministry of Health. 1974. "Roles and Functions of the Ministry". [http://www.santetunisie.rns.tn/ar/2016-07-27-18-20-27/2016-07-31-17-59-00]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] Human Development Group, Middle East and North Africa Region, World Bank Group. May 2006. "Tunisia: Health Sector Study." [https://www.researchgate.net/publication/271217116_Tunisia_Health_Sector_Study] Accessed 1 March 2021.
[4] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[5] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 March 2021.
[6] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 0

There is no publicly available evidence of a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency in Tunisia. While the Joint External Evaluation (JEE), published in 2016, addresses the issue of medical countermeasure stockpiles and recommends mapping and developing "a plan for management and distribution of the national stockpile of countermeasures;" the document does not mention any available stockpiles of medical supplies. [1] The websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), Ministry of Defense, Ministry of Interior and the Ministry of Environment and Sustainable Development do not provide information relevant to medical supplies stockpile. [2, 3, 4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 May 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 May 2021.
[3] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 May 2021.
[4] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 1 May 2021.
[5] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 May 2021.
[6] Ministry of Environment and Sustainable Development of the Republic of Tunisia.
[http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 May 2021.

4.2.2b

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

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

Current Year Score: 0

There is no publicly available evidence of a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency in Tunisia. While the Joint External Evaluation (JEE), published in 2016, addresses the issue of medical countermeasure stockpiles; the document does not mention stockpiles of laboratory supplies. [1] The websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), Ministry of Defense, Ministry of Interior and the Ministry of Environment and Sustainable Development do not provide information relevant to laboratory supplies stockpile. [2, 3, 4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[4] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 1 March 2021.
[5] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 March 2021.
[6] Ministry of Environment and Sustainable Development of the Republic of Tunisia.
[http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. While the Joint External Evaluation (JEE), published in 2016, addresses the issue of medical countermeasure stockpiles and recommends mapping and developing "a plan for management and distribution of the national stockpile of countermeasures;" the document does not mention any available stockpiles of medical supplies. [1] The websites of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), Ministry of Defense, Ministry of Interior and the Ministry of Environment and Sustainable Development do not provide information relevant to medical supplies stockpile. [2, 3, 4, 5, 6]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia". [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 May 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 May 2021.
[3] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 May 2021.
[4] Fusco, F.M., Brouqui, P., Ippolito, G., and the EuroNHID Working Group. 2018. "Highly Infectious DIseases in the Mediterranean Sea Area: Inventory of Isolation Capabilities and Recommendations for Appropriate Isolation." New Microbes and New Infections Volume 26, Supplement 1, S65-S73. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6205579/]. Accessed 1 May 2021.
[5] Clinique Avicenne de Tunis. [https://www.cliniqueavicenne.com/en/les-specialites/?categ=16]. Accessed 1 May 2021.
[6] Clinique Saint Augustin. [http://clinique-saint-augustin.com/en/specialists/]. Accessed 1 May 2021.
[7] Taoufik Hopsitals Group. [http://taoufikhospitalsgroup.com/]. Accessed 1 May 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

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

Current Year Score: 0

There is no publicly available evidence of a plan/agreement leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency in Tunisia; neither there is evidence of a plan/mechanism to procure medical supplies for national use during a public health emergency.

There is no mention of plans or agreements on the Ministry of Health website; although the ministry's role section of the website, defined by a 1974 decree, is to create a supply and procurement agency for laboratory and hospital needs. [1, 2] The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not mention any plan or agreement in place for either leveraging manufacturing capacity or procuring medical supplies during health emergencies. [3] There is no information of relevance to this issue through the websites of the Ministry of Agriculture, Water Resources and Fisheries, the Pasteur Institute of Tunis (IPT), Ministry of Defense, Ministry of Interior, and the Ministry of Industry and Trade. [4, 5, 6, 7, 8]

[1] Ministry of Health. 1974. "Roles and Functions of the Ministry". [http://www.santetunisie.rns.tn/ar/2016-07-27-18-20-27/2016-07-31-17-59-00]. Accessed 1 May 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 May 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia."[https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 May 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 May 2021.
[5] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 May 2021.
[6] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 1 May 2021.
[7] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 May 2021.
[8] Ministry of Industry and Trade of the Republic of Tunisia. [http://www.tunisieindustrie.nat.tn/en/home.asp]. Accessed 1 May 2021.

4.2.3b

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

Current Year Score: 0

There is no publicly available evidence of a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency in Tunisia; neither there is evidence of a plan/mechanism to procure laboratory supplies for national use during a public health emergency.

There is no mention of plans or agreements on the Ministry of Health website; although the ministry's role section of the website, defined by a 1974 decree, is to create a supply and procurement agency for laboratory and hospital needs. [1, 2] The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not mention any plan or agreement in place for either leveraging manufacturing capacity or procuring laboratory supplies during health emergencies. [3] There is no information of relevance to this issue through the websites of the Ministry of Agriculture, Water Resources and Fisheries, the Pasteur Institute of Tunis (IPT), Ministry of Defense, Ministry of Interior, and the Ministry of Industry and Trade. [4, 5, 6, 7, 8]

[1] Ministry of Health. 1974. "Roles and Functions of the Ministry". [http://www.santetunisie.rns.tn/ar/2016-07-27-18-20-27/2016-07-31-17-59-00]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia."[https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[4] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[6] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 1 March 2021.
[7] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 March 2021.
[8] Ministry of Industry and Trade of the Republic of Tunisia. [http://www.tunisieindustrie.nat.tn/en/home.asp]. Accessed 1 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 no publicly available evidence of 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) in Tunisia. The Joint External Evaluation (JEE)for Tunisia, published in 2016, states that there is no plan in place for dispensing MCMs and that informal mechanisms are used on a "case-by-case basis." While MCMs are available, the quantity, types, and location are unknown. [1] Information on Tunisia's routine vaccine program is available on the Ministry of Health and the Pasteur Institute of Tunis (IPT) websites; however, there is no information on vaccines or other MCMs for use in emergency scenarios. [2, 3] There is information relevant to a plan in place for dispensing MCMs through the websites of the Ministry of Interior, or Ministry of Environment and Sustainable Development. [4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health of the Republic of Tunisia. "School and University Health Card." [http://www.santetunisie.rns.tn/images/docs/anis/dmsu/doc2FR.pdf]. Accessed 1 March 2021.
[3] The Pasteur Institute of Tunis (IPT). "Vaccination Service." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=202&Itemid=178]. Accessed 1 March 2021.
[4] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 March 2021.
[5] Ministry of Environment and Sustainable Development of the Republic of Tunisia. [http://www.environnement.gov.tn/index.php?id=3&L=1]. Accessed 1 March 2021.

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

4.3.2a

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

Current Year Score: 0

There is no publicly available evidence of a plan to receive health personnel from other countries to respond to a public health emergency in Tunisia.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, the country has does not have a plan "for transferring medical countermeasures and medical personnel among international partners during public health emergencies," however, the Ministry of Foreign Affairs has conventions and agreements with United Nations agencies, World Organisation for Animal Health (OIE), WHO, and the International Federation of Red Cross and Red Crescent Societies (IFRC). Decisions are made on a case-by-case basis at the highest levels of government. [1]

The Pasteur Institute of Tunis (IPT) website provides information on regional and international partnerships of the institute, including a partnership with The Academy of Sciences for Developing World (TWAS), which facilitates exchanges between scientists and institutions, although it is unclear how these partnerships function to address emergency scenarios. [2] The Ministry of Defence does not provide information on a plan of collaboration with other countries. [3] The Ministry of Foreign Affairs website discusses international collaboration generally, but not on public health emergencies. [4] There is no evidence of such a plan on the Ministry of Health website. [5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis (IPT). "Regional and International Cooperation." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=105&Itemid=168]. Accessed 1 March 2021.
[3] Ministry of Defence of the Republic of Tunisia. [http://www.defense.tn]. Accessed 1 March 2021.
[4] Ministry of Foreign Affairs of the Republic of Tunisia. "Tunisia at the Service of International Causes." [https://www.diplomatie.gov.tn/politique-etrangere/la-tunisie-au-service-des-causes-internationales/]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 3

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 73.6

2012

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: 337.72

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 suggesting that the Tunisian 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. The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not provide information suggesting that healthcare workers are prioritized in public health emergencies, including those managed by the Strategic Health Operations Centre (SHOC). The JEE adds that there is a lack of formalized Standard Operating Procedures and the somewhat ad hoc nature of responses to public health emergencies. [1] The websites of the Ministry of Health and the Pasteur Institute of Tunis do not provide information on this matter. [2, 3]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[3] The Pasteur Institute of Tunis (IPT). "Regional and International Cooperation." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=105&Itemid=168]. Accessed 1 March 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

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

As of 2011, the Strategic Health Operations Centre (SHOC room), which manages responses to public health emergencies, utilizes instant videos and audio to communicate internally within the SHOC room as well as externally with regional health departments and other public health actors. The SHOC room also provides real-time health alerts and ensures all information is exchanged amongst domestic, regional, and international partners, such as the World Health Organization (WHO). [1] However, there is no information clarifying whether this communication mechanism reaches healthcare workers in the field or that the system can be used in both directions.

The Joint External Evaluation (JEE) for Tunisia, published in 2016, mentions that there are simulation exercises conducted by the Ministry of the Interior and the Ministry of Health in order to improve coordination amongst stakeholders including

public health and medical professionals in response to public health events. Each time the SHOC room has been used to manage a crisis, a contingency plan has been enacted. Medical professionals and public health officials (primarily from the Ministry of Health) are part of the SHOC room staff. [2] There is limited information on the SHOC room available on the Ministry of Health and Ministry of Interior websites. [3, 4] However, the Ministry of Health website mentions the development of a program called The National Strategic Digital Plan by 2020, which aims to improve communication within the Ministry of Public Health and across the health sector through the implementation of the Health Information System for data and information sharing. [5]

[1] Global Platform for Disaster Risk Reduction. PreventionWeb. 8-11 May 2011. "Tunisian Health Policies in Disaster Preparedness." [https://www.preventionweb.net/files/globalplatform/entry_presentation~tunisianhealthpolicyindisasterpreparedness.pdf]. Accessed 1 March 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] Ministry of Interior of the Republic of Tunisia. [https://www.interieur.gov.tn]. Accessed 1 March 2021.
[5] Ministry of Health of the Republic of Tunisia. "Development of Digital Health in Tunisia." [http://www.santetunisie.rns.tn/fr/prestations/programme-de-d%C3%A9veloppement-de-la-%C2%ABsant%C3%A9-num%C3%A9rique%C2%BB-en-tunisie]. Accessed 1 March 2021.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that the system for public health officials and healthcare workers to communicate during an emergency encompasses healthcare workers in both the public and private sector. The Strategic Health Operations Centre (SHOC room) document, published in 2011, describes the Tunisian health policy during emergency and highlights the necessity of collaborating with and engaging the private sector in all SHOC room activities due to the limited resources of the public sector. However, the document does not include details of how such collaborations are manifested. [1] The Joint External Evaluation (JEE) for Tunisia, published in 2016, although addresses the SHOC room, does not mention the involvement of the private sector. However, the JEE discusses risk communication and the need to improve engagement and communication between civil society, media, private sector, and public sector actors. [2] There is no information on this matter on the Ministry of Health and Ministry of Interior websites. [3, 4]

[1] Global Platform for Disaster Risk Reduction. PreventionWeb. 8-11 May 2011. "Tunisian Health Policies in Disaster Preparedness." [https://www.preventionweb.net/files/globalplatform/entry_presentation~tunisianhealthpolicyindisasterpreparedness.pdf]. Accessed 1 March 2021.
[2] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

[4] Ministry of Interior. [https://www.interieur.gov.tn]. Accessed 1 March 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that the national public health system is monitoring for and tracking the number of healthcare associated infections (HCAI) that take place in healthcare facilities in Tunisia.

According to the Joint External Evaluation (JEE) for Tunisia, published in 2016, most public hospitals have an operational technical team and/or committee responsible for monitoring and controlling HCAI; however, the specific types of monitoring activities and their regularity is unclear. The JEE mentions the Tunisian government conducted "two national prevalence surveys in 2005 and 2012, the results of which serve as a benchmark for the design, implementation and evaluation of strategies for the prevention and control of HCAI in Tunisia." However, there is no coherent national strategic plan for addressing HCAI. [1]

An article published in November 2018 in Tunis Med, notes that "[HCAIs] are frequent in medical ICUs in Tunisia, which emphasize the importance of specific measures for surveillance and infection control in critically ill patients. Implementing a national monitoring system of [HCAI] should be a major priority of public health in Tunisia." This implies a lack of such a monitoring system. [2] Tunisia does not have a national AMR action plan. [3] HCAI is not mentioned on the Ministry of Health or The Pasteur Institute of Tunis (IPT) websites. [4, 5]

[1] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.
[2] Tunis Med. October-November 2018. "The Prevalence of healthcare-associated infection in medical intensive care units in Tunisia. Results of the multi-centre nosorea1 study." [https://www.ncbi.nlm.nih.gov/pubmed/30746666]. Accessed 1 March 2021.
[3] World Health Organization(WHO). "Library of National Action Plans" [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis(IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that there is a national requirement for ethical review (e.g., from an ethics committee or via Institutional Review Board approval) before beginning a clinical trial in Tunisia. The Pasteur Institute of Tunis (IPT) website mentions the details of it's Bio-Medical Ethics Committee (CEBM) established in 1992. The CEBM reviews all applications to identify risks, minimization of risks, and potential benefits of the research. However, there is no information suggesting that the CEBM's approval is a national requirement before beginning any clinical trials or research. [1] There is no further evidence of the CEBM on the Ministry of Health website. [2]

[1] The Pasteur Institute of Tunis (IPT). "IPT Bio-Medical Ethics Committee." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=434&Itemid=783]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics in Tunisia. The Pasteur Institute of Tunis (IPT) Bio-Medical Ethics Committee (CEBM) material on IPT website does not contain information relevant to an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics. [1] The Ministry of Health website also does not mention the CEBM or related topics. [2]

[1] The Pasteur Institute of Tunis (IPT). "IPT Bio-Medical Ethics Committee." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=434&Itemid=783]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is publicly available evidence of a government agency responsible for approving new medical countermeasures (MCM) for humans in Tunisia. The Ministry of Health via its subsidiary Directorate of Pharmacy and Medicine (DPM) manages the National Commission for the Licensing of Establishments for the Manufacture of Medicinal Products for Human Use. The DPM is responsible for monitoring and registering imported and locally manufactured medications for both humans and animals. [1] Furthermore, the mission of the Pastuer Institute of Tunis (IPT) includes approving research for medical countermeasures; however, MCMs are not explicitly mentioned. [2] MCMs are not discussed on the Ministry of Health website. [3] The Joint External Evaluation (JEE) for Tunisia, published in 2016, does not outline the specific MCMs utilized. [4]

[1] Directorate of Pharmacy and Medicine (DPM), Ministry of Health of the Republic of Tunisia. [http://www.dpm.tn/index.php]. Accessed 1 March 2021.
[2] The Pasteur Institute of Tunis (IPT). "The Mission of the Pasteur Institute of Tunis." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=102&Itemid=165]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] World Health Organization (WHO). 28 November-2 December 2016. "Joint External Evaluation of IHR Core Capacities of the Republic of Tunisia." [https://apps.who.int/iris/bitstream/handle/10665/258725/WHO-WHE-CPI-REP-2017.45-eng.pdf?sequence=1]. Accessed 1 March 2021.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of an expedited process for approving medical countermeasures (MCM) for human use during public health emergencies in Tunisia. The Pasteur Institute of Tunis (IPT) Bio-Medical Ethics Committee (CEBM) material on the IPT website does not contain any related information. [1] The Ministry of Health website also does not mention the CEBM or any related topics. [2]

[1] The Pasteur Institute of Tunis (IPT). "IPT Bio-Medical Ethics Committee." [http://www.pasteur.tn/index.php?option=com_content&view=article&id=434&Itemid=783]. Accessed 1 March 2021.
[2] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient publicly available evidence suggesting that epidemics and pandemics are integrated into the national risk reduction strategy or that there is a standalone national disaster risk reduction strategy for epidemics and pandemics. The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities for Disasters, which brought together the stakeholders necessary for disaster risk reduction, is the predecessor agreement for the current Sendai Framework. [1] Tunisia's implementation of the risk reduction strategy laid out in the Hyogo Framework is discussed in the National Progress Report on the Implementation of the Hyogo Framework for Action (2011-2013), which mentions that the plans in the strategy are "reinforced in the context of the risk of the spread of pandemics," such as Avian flu H1N1. However, additional information on pandemics is not available. [2, 3] No further evidence on this matter is provided through the websites of the Ministry of Health or the Pasteur Insitute of Tunis (IPT). [4, 5]

[1] United Nations Office for Disaster Risk Reduction (UNISDR). "Hyogo Framework for Action (HFA)." [https://www.unisdr.org/we/coordinate/hfa]. Accessed 1 March 2021.
[2] PreventionWeb, Ministry of Environment and Sustainable Development of the Republic of Tunisia. 30 December 2013. "Tunisia: National progress report on the implementation of the Hyogo Framework for Action (2011-2013)." [https://www.preventionweb.net/files/35996_tun_NationalHFAprogress_2011-13.pdf]. Accessed 1 March 2021.
[3] PreventionWeb, Ministry of the Environment and Sustainable Development of the Republic of Tunisia. 2015. "Tunisia: National progress report on the implementation of the Hyogo Framework for Action (2013-2015)." [https://www.preventionweb.net/english/hyogo/progress/reports/v.php?id=40153&pid:223]. Accessed 1 March 2021.

[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis(IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 0

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

Tunisia is a member of The Eastern Mediterranean Public Health Network (EMPHNET), which seeks "to contribute to enhanced populations' health status in the region by promoting capabilities through training in applied epidemiology; improving surveillance and disease outbreak investigation." [1] Tunisia is also a member of EpiSouth, Network for Communicable Disease Control in Southern Europe and Mediterranean Countries, which includes most countries in the Mediterranean, the Levant, and North Africa. However, the most recent EpiSouth project was in 2010-2013 and there is no evidence of a more recent project on the website. [2]

Tunisia is also a member of the World Organization for Animal Health (OIE)'s Subregional Representation for North Africa, but there is no explicit information on public health emergencies. [3] Tunisia has agreements with International Organization for Migration (IOM), United Nations High Commission for Refugees (UNHCR), Morocco, and Egypt regarding public health and providing healthcare for migrants, but not for public health emergencies in specific. [4] There is no relevant information on the Ministry of Health website or the United Nations Food and Agriculture Organization (FAO) Subregional North Africa profile. [5, 6]

[1] The Eastern Mediterranean Public Health Network (EMPHNET). "Our Strategy." [http://emphnet.net/en/about-us/?sectionId=10724]. Accessed 1 March 2021.
[2] EpiSouth, Network for Communicable Disease Control in Southern Europe and Mediterranean Countries. "List of Participating Countries." [http://www.episouth.org/list_participating_countries.html]. Accessed 1 March 2021.
[3] World Organization for Animal Health (OIE). "Subregional Representation for North Africa." [http://www.rr-africa.oie.int/en/RR/en_organisation_na.html]. Accessed 1 March 2021.
[4] International Organization for Migration (IOM). November 2013. "Migration in Egypt, Morocco, and Tunisia." [http://www.tunisia.iom.int/sites/default/files/resources/files/Reseach%20on%20complex%20migratory%20flows%20in%20Egypt%20Morocco%20and%20Tunisia.pdf]. Accessed 1 March 2021.
[5] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[6] United Nations Food and Agriculture Organization (FAO). [http://www.fao.org/neareast/regional-office/north-africa/en/]. Accessed 1 March 2021.

5.2.1b

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

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

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to animal health emergencies. Tunisia is a member of the World Organization for Animal Health (OIE) Sub-Regional Representation for North Africa, which was established in Tunis on 13 January 2009 between the OIE and the Government of the Republic of Tunisia. The Sub-Regional Representation for North Africa does not focus on emergencies explicitly. [1] In 2013, Tunisia signed a 5-year technical-scientific agreement between the Tunisian Institute for Veterinary Research (IRVT) and Italy's Experimental Zooprofilattico Institute of Abruzzo and Molise (IZSAM). However, this agreement also does not address animal health emergencies specifically. [2] The topic is not discussed on the Ministry of Health website or the Pasteur Insitute of Tunis (IPT). [3, 4]

[1] World Organisation for Animal Health (OIE). "OIE Sub-Regional Representation for North Africa." [http://www.rr-africa.oie.int/en/RR/en_organisation_na.html]. Accessed 1 March 2021.
[2] Instituto Zooprofailattico Sperimentale dell'Abruzzo e del Molise (IZSAM). 6 November 2013. "Signed Agreement between IZSAM and IRVT (Tunisia)." [http://www.izs.it/IZS/archives_events/Signed_agreement_between_IZSAM_and_IRVT_Tunisia]. Accessed 1 March 2021.
[3] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[4] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

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

- Membership in Global Health Security Agenda (GHSA)

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

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

- Membership in the Australia Group (AG)

- Membership in the Proliferation Security Initiative (PSI)

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

Current Year Score: 0

2021

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

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

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

5.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

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

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

5.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia allocated national funds to improve capacity to address epidemic threats within the past three years. The national budget for the health sector, for the years 2020 and 2018, do not include improving the national capacity to address epidemic threats within the past three years. [1, 2] The national health budget for the year 2019 is not publicly available. [3] There is no further evidence on this matter through the website of the Ministry of Health, the Pasteur Insitute of Tunis (IPT), and the Ministry of Agriculture, Water Resources and Fisheries. [4, 5, 6]

[1] Ministry of Finance. "National Budget of the Health Sector 2020." [http://www.finances.gov.tn/sites/default/files/2020-02/chap_24_1.pdf].Accessed 1 March 2021.
[2] Ministry of Finance. "National Budget of the Health Sector 2018." [http://www.finances.gov.tn/sites/default/files/2019-02/46.pdf]. Accessed 1 March 2021.
[3] Ministry of Finance. "National Budgets." [http://www.finances.gov.tn/ar/budgets_ministeres?field_secteur_et_domaines_target_id=82&field_type_document_target_id=All&page=5]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT). [http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[6] Ministry of of Agriculture, Water Resources and Fisheries of Tunisia. [http://www.agriculture.tn]. Accessed 1 March 2021.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of special emergency public financing mechanism and funds which Tunisia 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).

The Republic of Tunisia is not currently an International Development Association (IDA) Borrowing Country and is not eligible to be one, but graduated from IDA in Fiscal Year (FY) 1979 from the program. [1, 2] Consequently, Tunisia is not eligible for World Bank Pandemic Financing Facility as it is a higher earning country. However, as of April 2016, Tunisia is receiving funding through the World Bank for a number of purposes, including health. This is outlined in the 2016-2020 country partnership framework between the World Bank Group and the Republic of Tunisia. [3]

In March 2018, Tunisia signed a Memorandum of Understanding with the International Monetary Fund stating that "we agree to ensure the financial sustainability of the social protection and health system (including the CNRPS, CNSS, CNAM, and the central pharmacy." [4] Furthermore, from the Global Health Security Tracking Dashboard, Tunisia received and continue to receive funds from multiple donors. However, there is no evidence suggesting that this funding is for a public health emergency specifically. [5]

[1] International Development Association, World Bank Group. 2018. "IDA Borrowing Countries." [http://ida.worldbank.org/about/borrowing-countries]. Accessed 1 March 2021.
[2] International Development Association, World Bank Group. July 2017. "IDA Graduates." [http://ida.worldbank.org/about/ida-graduates]. Accessed 1 March 2021.
[3] World Bank Group. 19 April 2016. "International Bank for Reconstruction and Development, International Finance

Corporation, Multilateral Investment Guarantee Agency Country Partnership Framework for The Republic of Tunisia For the Period FY 2016-2020." [http://documents.worldbank.org/curated/en/253011468180259354/pdf/104123-CAS-P151690-Box394874B-OUO-9-R2016-0074.pdf]. Accessed 1 March 2021.
[4] International Monetary Fund. 14 March 2018. "Tunisia: Letter of Intent: Memorandum of Economic and Financial Policies, and Technical Memorandum of Understanding." [https://www.imf.org/external/np/loi/2018/tun/031418.pdf]. Accessed 1 March 2021.
[5] Georgetown University. 2018. "Global Health Security Tracking Dashboard." [https://tracking.ghscosting.org/details/1068/recipient]. Accessed 1 March 2021.

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

5.5.4a

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

Current Year Score: 0

There is no publicly available evidence suggesting that Tunisia's senior leaders in the past three years, made a public commitment neither to support other countries to improve capacity to address epidemic threats by providing financing or support; nor to improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity.

According to the Global Health Security Funding Tracking website, Tunisia's funding has increased since 2014, but not consistently so over the last three years. Funding focused on three only components which are biosafety and biosecurity, zoonotic diseases, and national laboratory system. [1]

There is evidence that Tunisia has made a commitment to leading the fight against HIV/AIDS in a UNAIDS 20 July 2014 article, but there is no evidence from the last three years. [2]

A World Health Organization (WHO) article, published in December 2018, discusses financing for public health initiatives including public health emergencies between the Minister of Health and the Representative of the World Health Organization; however, there is no evidence indicating that the Minister of Health requested assistance for Tunisia or if he offered assistance to other countries. [3]

There is no information on the websites of the Ministry of Health, the Pasteur Institute of Tunis (IPT) or the Ministry of Foreign Affairs about additional requests for funds to fight epidemics, nor to provide funding to other countries. [4, 5, 6]

[1] Georgetown University. "Global Health Security Funding Tracking Dashboard." [https://tracking.ghscosting.org/details/1068/recipient]. Accessed 1 March 2021.
[2] UNAIDS. 20 June 2014. "Tunisia commits to take a leadership role in the response in the region." [http://www.unaids.org/en/keywords/tunisia]. Accessed 1 March 2021.
[3] World Health Organisation (WHO). 19 December 2018. "Tunisia: Meeting of Dr. Yves Souteyrand, Representative of the

World Health Organization in Tunisia with Dr. Abdel Raouf Cherif, Minister of Health."
[http://www.emro.who.int/fr/tun/tunisia-news/rencontre-du-dr-yves-souteyrand-representant-de-lorganisation-mondiale-de-la-sante-en-tunisie-avec-monsieur-abdel-raouf-cherif-ministre-de-la-sante.html]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT).
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[6] Ministry of Foreign Affairs of the Republic of Tunisia. [https://www.diplomatie.gov.tn]. Accessed 1 March 2021.

5.5.4b

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

Current Year Score: 1

There is no publicly available evidence suggesting that Tunisia, in the past three years, provided other countries with financing or technical support to improve capacity to address epidemic threats; however, there is evidence suggesting that the country requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats.

According to the Global Health Security Funding Tracker, Tunisia between the years 2014 and 2020 received 92.19 million US Dollars including around 41.63 million US Dollars in 2020 only. The funding is focused on biosafety and biosecurity, zoonotic diseases, and the national laboratory system. This implicitly suggests that the country invested donor finances to improve domestic capacity to address epidemic threats. [1]

A World Health Organization (WHO) article, published in December 2018, discusses financing for public health initiatives including public health emergencies between the Minister of Health and the Representative of the World Health Organization; however, there is no evidence indicating that the Minister of Health requested assistance for Tunisia or if he offered assistance to other countries. [3]

There is no information on the websites of the Ministry of Health, the Pasteur Institute of Tunis (IPT) or the Ministry of Foreign Affairs about providing other countries with financing or technical support to improve capacity to address epidemic threats, or requesting funds or technical support from donors to improve the country's domestic capacity to address epidemic threats. [4, 5, 6]

[1] Georgetown University. "Global Health Security Funding Tracking Dashboard."
[https://tracking.ghscosting.org/details/1068/recipient]. Accessed 1 March 2021.
[2] UNAIDS. 20 June 2014. "Tunisia commits to take a leadership role in the response in the region."
[http://www.unaids.org/en/keywords/tunisia]. Accessed 1 March 2021.
[3] World Health Organisation (WHO). 19 December 2018. "Tunisia: Meeting of Dr. Yves Souteyrand, Representative of the World Health Organization in Tunisia with Dr. Abdel Raouf Cherif, Minister of Health."
[http://www.emro.who.int/fr/tun/tunisia-news/rencontre-du-dr-yves-souteyrand-representant-de-lorganisation-mondiale-de-la-sante-en-tunisie-avec-monsieur-abdel-raouf-cherif-ministre-de-la-sante.html]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] The Pasteur Insitute of Tunis (IPT).

[http://www.pasteur.tn/index.php?option=com_content&view=article&id=415&Itemid=158]. Accessed 1 March 2021.
[6] Ministry of Foreign Affairs of the Republic of Tunisia. [https://www.diplomatie.gov.tn]. Accessed 1 March 2021.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Economist Impact analyst qualitative assessment based on official national sources, which vary by country

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

5.6.1 Commitment to sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) in both emergency and nonemergency research

5.6.1a

Is there a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza?

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence of a plan or policy in Tunisia, 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.

The Pasteur Institute of Tunis (IPT), managed by the Ministry of Health, outlines agreements and cooperation at the international and regional scale. "The IPT is bound by a Scientific and Technical Cooperation Agreement in 1993," through which they share information through the International Network of Pasteur Institutes and Associated Institutes (RIIP) on numerous diseases such as leishmaniasis, tuberculosis, rabies, pathologies with ticks, West Nile Virus; however, there is no information on the type of information. [1, 2]

Furthermore, data is systematically shared with the European Community through the Framework Program 7, which includes leishmaniosis, rabies, viral hepatitis, human genetics, and tuberculosis. [1] Law No. 22 of 2016 passed in March 2016 and listed on the Ministry of Agriculture, Water Resources and Fisheries website, outlines information and data sharing policy, explicitly discusses sharing information and experiences with international agencies, but does not address genetic and epidemiological data, clinical specimens, or isolated specimens. [3] There is no relevant information on the Ministry of Higher Education and Scientific Research website or the Ministry of Health website. [4, 5]

[1] The Pasteur Institute of Tunis. "Regional and International Cooperation."
[http://www.pasteur.tn/index.php?option=com_content&view=article&id=105&Itemid=168]. Accessed 1 March 2021.

[2] European Commission, European Union. 29 November 2007. "FP7 Cooperation Work Programme: Health." [http://ec.europa.eu/research/participants/data/ref/fp7/88453/a_wp_200801_en.pdf]. Accessed 1 March 2021.
[3] Ministry of Agriculture, Water Resources, and Fisheries of the Republic of Tunisia. Law No. 22-2016 of 24 March 2016. 2016. "Basic Law No. 22 of 2016 dated March 24 2016 relating to the right to access information." [http://www.agriculture.tn/documents/opendata/ministere/%D8%A7%D9%84%D9%82%D8%A7%D9%86%D9%88%D9%86%20%D8%B9%D8%AF%D8%AF%2022.pdf]. Accessed 1 March 2021.
[4] Ministry of Health. [http://www.santetunisie.rns.tn/ar/]. Accessed 1 March 2021.
[5] Ministry of Higher Education and Scientific Research of the Republic of Tunisia. [http://www.mes.tn]. Accessed 1 March 2021.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence that Tunisia has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the last two years. Although Tunisia is not included in WHO's "Pandemic Influenza Preparedness Framework: Partnership Contribution High Level Implementation Plan 1 Final Report 2014-2017;" [1] the country hosted and participated in a workshop with partners World Health Organization (WHO) and US Centre for Disease Control (CDC) and Ghana, Morocco, Oman, and Tanzania to improve and strengthen their pandemic influenza preparedness plans in August 2018. [2] There is no mention of the PIP framework by Tunisian media outlets.

[1] World Health Organisation (WHO). 30 November 2018. "Pandemic Influenza Preparedness Framework: Partnership Contribution High Level Implementation Plan 1 Final Report 2014-2017." [https://www.who.int/influenza/pip/partnership_contribution/hlipi_final_report/en/]. Accessed 1 March 2021.
[2] World Health Organisation (WHO). 16 August 2018. "Improved pandemic influenza preparedness for five countries through action planning workshop in Tunisia." [https://www.who.int/risk-communication/pandemic-influenza-preparedness/workshop-in-tunisia/en/]. Accessed 1 March 2021.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no publicly available evidence suggesting that Tunisia has not shared pandemic pathogen samples during an outbreak in the past two years including for Covid-19. There is no information on this matter through the country profile of Tunisia on the World Health Organization website. [1] There is evidence that Tunisia reported three outbreaks in 2018 on the World Organization for Animal Health (OIE). [2] However, there are no incidents reported to the World Health Organization (WHO) Emergency Preparedness, response page from 2017 to 2020. [3] There is no evidence Tunisia has not shared pandemic pathogen samples in media outlet publications.

[1] World Health Organization. "Tunisia." []. Accessed 1 March 2021.
[2] World Animal Health Information System (WAHIS), World Organisation for Animal Health (OIE). 2018. "Weekly Disease

Information." [https://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/WI]. Accessed 1 March 2021.
[3] World Health Organisation (WHO). "Emergency Preparedness, Response Disease Outbreak News." [https://www.who.int/csr/don/archive/year/2016/en/]. Accessed 1 March 2021.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 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: 1

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 2

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: 2

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

Is this country presently subject to an armed conflict, or is there at least a moderate risk of such conflict in the future?
No armed conflict exists = 4, Yes; sporadic conflict = 3, Yes; incursional conflict = 2, Yes, low-level insurgency = 1, Yes; territorial conflict = 0

Current Year Score: 3

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

Does the government's authority extend over the full territory of the country?
Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

Is there a threat that international disputes/tensions could have a negative effect?
No threat = 4, Low threat = 3, Moderate threat = 2, High threat = 1, Very high threat = 0

Current Year Score: 1

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 79.04

2014

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.7

2018

United Nations Development Programme (UNDP); The Economist Intelligence Unit

6.2.3 Social inclusion

6.2.3a

Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)

Input number

Current Year Score: 0

2015

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 2

According to the Intenational Labour Office's (ILO) report, published in 2015, Tunisia's share of employment in the informal sector is 53.5 per cent.

[1] Intenational Labour Office. 2015. "Labour market entry in Tunisia: The gender gap." [http://ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_440855.pdf]. Accessed 1 March 2021.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 2

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 0

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.33

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: 3

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 69.25

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: 0.1

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: 76.5

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: 462.5

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 8.59

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 26

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 26.9

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: 96.25

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 90.92

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: 523.35

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