

Trinidad and Tobago

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

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

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

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

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

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a national AMR plan for the surveillance, detection and reporting of priority AMR pathogens. There is no evidence of a national action plan on the websites of the World Health Organization library of National Action Plans, the Ministry of Health, nor on the one for the Ministry of Agriculture, Land and Fisheries [1, 2, 3]. However, the 2018 Antimicrobial Resistance Country Self Assessment for Trinidad and Tobago indicates that there is a national AMR action plan is being developed [4]. The self assessment also indicates that there is a national plan for monitoring AMR but capacity (including laboratory) for surveillance and reporting data on AMR is lacking [4]. Furthermore, in December 2014, the Caribbean Public Health Agency (CARPHA) hosted a workshop on Combatting Antimicrobial Resistance in the Caribbean, and a report of this workshop outlines next steps that are needed to develop a regional response and action plan for combatting AMR [5].

[1] World Health Organization. "Antimicrobial resistance - Library of national action plans".

[<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 2 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

[4] World Health Organization. "Global Database for Antimicrobial Resistance Country Self Assessment 2018-19 - Trinidad and Tobago". [<http://amrcountryprogress.org/>]. Accessed 2 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). 15 December, 2014. "Combatting Antimicrobial Resistance in the Caribbean: A Report on the Workshop Delivered as Part of the Commonwealth Laboratory Twinning Initiative to Combat Antimicrobial Resistance". [<https://carpha.org/More/Media/Articles/ArticleID/86/CARPHA-and-Public-Health-England-Tackle-the-Threat-of-Antimicrobial-Drug-Resistance-in-the-Region>]. Accessed 02 March, 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: 0

There is no publicly available evidence that Trinidad and Tobago has a national laboratory or laboratory system that can test for priority AMR pathogens. The regional laboratory, which is the Caribbean Public Health Agency (CARPHA), however, can test for at least 5 priority AMR pathogens. CARPHA's laboratory is located in Port-of-Spain, Trinidad and can conduct the following tests: EIA assay and serotyping for *E. coli*; AMR testing for *S. pneumoniae*; serotyping and phage typing of *S.*

enteritidis for Salmonellosis; serotyping for Shigellosis; AMR testing for *N. gonorrhoeae*; and drug sensitivity testing (PCR) for Tuberculosis [1, 2]. CARPHA member states can submit specimens to the CARPHA laboratory by way of the relevant National Reference/Public Health Laboratory or the Ministry of Health [2]. The Ministry of Health states that the Trinidad Public Health Laboratory with its associated National Surveillance Unit (NSU) provides diagnostic laboratory support, conducts national surveillance and other relevant epidemiological activities exclusively in the area of communicable diseases [3]. The NSU performs ongoing assessment of health data from entities, including County Medical Offices of Health (CMOSH), health centers, hospitals, and sentinel private physicians and private hospitals [4]. In addition, there is no national AMR action plan available through the World Health Organization library of National Action Plans [5]. There is no additional information available on the website of the Ministry of Health and the Ministry of Agriculture [6, 7].

[1] Caribbean Public Health Agency (CARPHA). "Laboratory User Manual - Location and Contact Information". Updated April, 2020. [[https://carpha.org/Portals/0/GUL-Q05-001-05_User%20Manual\[1452\].pdf?ver=2020-04-16-180718-920](https://carpha.org/Portals/0/GUL-Q05-001-05_User%20Manual[1452].pdf?ver=2020-04-16-180718-920)]. Accessed 2 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "Laboratory Testing Services". [<https://carpha.org/What-We-Do/Laboratory/Laboratory-Testing-Services>]. Accessed 2 March, 2021.

[3] Government of the Republic of Trinidad and Tobago. "Trinidad Public Health Laboratory". [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 2 March, 2021.

[4] Prepared for Ministry of Health of Trinidad and Tobago by Connect-To-Health. "Strategic Plan for Strengthening the National Health Information System 2012-2016". [<http://www.who.int/goe/policies/countries/tto/en/>]. Accessed 2 March, 2021.

[5] World Health Organization. "Antimicrobial resistance - Library of national action plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 2 March, 2021.

[6] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[7] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 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 public evidence that the government of Trinidad and Tobago conducts detection or surveillance activities for antimicrobial residues or AMR organisms. In the World Health Organization (WHO)'s Antimicrobial Resistance 2018-19 Country Self Assessment, regarding national surveillance for AMR in the environment, Trinidad and Tobago indicates that some AMR data is collected locally but may not use a standardized approach and lacks national coordination and/or quality management [1]. In addition, there is no national AMR Action Plan available through the WHO's library of National Action Plans, and there is no evidence of AMR detection or surveillance activities on the websites of the Ministry of Health, the Ministry of Agriculture, Land and Fisheries, nor on the one for the Environmental Management Authority [2, 3, 4, 5].

[1] World Health Organization. "Global Database for Antimicrobial Resistance Country Self Assessment 2018-19 - Trinidad and Tobago". [<http://amrcountryprogress.org/>]. Accessed 2 March, 2021.

[2] World Health Organization. "Antimicrobial resistance - Library of national action plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 2 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

[5] Environmental Management Authority of Trinidad and Tobago. [<https://www.ema.co.tt/>]. Accessed 2 March, 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

There is evidence that Trinidad and Tobago has national legislation in place requiring prescriptions for antibiotic use for humans, and there is no evidence of gaps in implementation. The Antibiotics Act 18 of 1948, amended and updated in 2007, states that antibiotics shall only be issued with the prescription of a medical practitioner, dentist, or veterinary surgeon [1]. A review of media sources and academic studies does not produce evidence that this legislation has gaps in its implementation.

[1] Laws of Trinidad and Tobago, Ministry of Legal Affairs. "Antibiotics Act - Chapter 30:02".

[<https://digicollections.net/medicinedocs/documents/s18704en/s18704en.pdf>]. Accessed 02 March, 2021.

1.1.2b

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

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

Current Year Score: 2

There is evidence that Trinidad and Tobago has national legislation in place requiring prescriptions for antibiotic use for animals, and there is no evidence of gaps in implementation. The Antibiotics Act 18 of 1948, amended and updated in 2007, states that antibiotics shall only be issued with the prescription of a medical practitioner, dentist, or veterinary surgeon [1]. A review of media sources and academic studies does not produce evidence that this legislation has gaps in its implementation.

[1] Laws of Trinidad and Tobago, Ministry of Legal Affairs. "Antibiotics Act - Chapter 30:02".

[<https://digicollections.net/medicinedocs/documents/s18704en/s18704en.pdf>]. Accessed 02 March, 2021.

1.2 ZOOBOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a national law, plan, or equivalent strategy document, on zoonotic disease. There is no evidence of such a plan on the website of the Ministry of Health nor on the one for the Ministry of Agriculture, Land and Fisheries [1, 2]. However, there is evidence that the country is party to planning and strategy regarding zoonotic disease. In 2012, the Caribbean Community (CARICOM), of which Trinidad and Tobago is a Member State, signed an agreement with the World Organisation for Animal Health (OIE) "to prevent the spread of animal diseases, to improve the animal health", and to "harmonize legislation and regulations on animal diseases and zoonoses" [3].

Trinidad and Tobago participates in the Caribbean Animal Health Network (CaribVET), which aims to improve animal and veterinary public health in all the countries and/or the territories of the Caribbean, including strengthening national capacities related to preparedness, surveillance, monitoring and management of animal and zoonotic disease [4]. In addition, the Pan American Health Organization (PAHO) division of the World Health Organization (WHO) refers to strategic planning around zoonotic disease in the Caribbean sub-region, including specific mention of Trinidad and Tobago in regards to prevention and control of zoonoses [5].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

[3] The World Organization for Animal Health (OIE). 2012. "Agreement Between the Caribbean Community (CARICOM) and the World Organisation for Animal Health (OIE)".

[http://www.oie.int/fileadmin/Home/eng/About_us/docs/pdf/accords/CARICOM_ANG.pdf]. Accessed 2 March, 2021.

[4] Caribbean Animal Health Network (CaribVET). "Network Objectives". [<https://www.caribvet.net/about-the-network/objectives>]. Accessed 02 March, 2021.

[5] Pan American Health Organization/World Health Organization (PAHO/WHO). "Veterinary Public Health".

[https://www.paho.org/ocpc/index.php?option=com_content&view=category&layout=blog&id=2&Itemid=101&limitstart=6]. Accessed 02 March, 2021.

1.2.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago 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. In August of 2014, the Government of Trinidad and Tobago (GORTT), announced a national contingency plan to prevent the spread of the Ebola virus [1]. Furthermore, in July of 2019, the Ministry of Health hosted a multi-stakeholder meeting to review existing plans for the national response to highly contagious diseases, including Ebola [2]. However, there is no evidence of this plan, nor that it includes measures for risk identification and reduction for zoonotic disease spillover events from animals to humans, on the website of the Ministry of Health nor on the one for the Ministry of Agriculture [3, 4]. There is evidence that the country is party to planning and strategy regarding zoonotic disease as part of the Caribbean Community (CARICOM). In 2012, CARICOM, of which Trinidad and Tobago is a Member State, signed an agreement with the World Organization for Animal Health (OIE) "to prevent the spread of animal diseases, to improve the animal health", and to "harmonize legislation and regulations on animal diseases and zoonoses" [5]. Trinidad and Tobago also participates in the Caribbean Animal Health Network (CaribVET), which aims to improve animal and veterinary public health in all the countries and/or the territories of the Caribbean, including strengthening national capacities related to preparedness, surveillance, monitoring and management of animal and zoonotic disease [6]. The CARICOM One Health Policy—which urges collaboration between the public health, agriculture and wildlife/environment sectors—includes zoonotic disease considerations [7]. In addition, the Pan American Health Organization (PAHO) division of the World Health Organization (WHO) refers to strategic planning around zoonotic disease in the Caribbean sub-region, including specific mention of Trinidad and Tobago in regards to prevention and control of zoonoses (rabies) and that it is one of only three CARICO members to have a Veterinary Public Health Unit [8].

[1] Government of the Republic of Trinidad and Tobago. 24 August, 2014. "Coordinated Contingency Plan to Prevent the Spread of the Ebola Virus". [<http://www.news.gov.tt/content/coordinated-contingency-plan-prevent-spread-ebola->

virus#.YD6tapNKjwc]. Accessed 02 March, 2021.

[2] Government of the Republic of Trinidad and Tobago. 29 July, 2019. "Ministry of Health hosts stakeholder Ebola preparedness meeting". [<http://www.news.gov.tt/content/ministry-health-hosts-stakeholder-ebola-preparedness-meeting#.YD6vd5NKjwc>]. Accessed 02 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

[5] The World Organization for Animal Health (OIE). 2012. "Agreement Between the Caribbean Community (CARICOM) and the World Organisation for Animal Health (OIE)".

[http://www.oie.int/fileadmin/Home/eng/About_us/docs/pdf/accords/CARICOM_ANG.pdf]. Accessed 2 March, 2021.

[6] Caribbean Animal Health Network (CaribVET). "Network Objectives". [<https://www.caribvet.net/about-the-network/objectives>]. Accessed 2 March, 2021.

[7] One Health One Caribbean One Love. 2014. "Technical Note - CARICOM One Health Policy".

[https://www.onehealthcommission.org/index.cfm/37526/83571/one_health_one_caribbean_one_love]. Accessed 2 March, 2021.

[8] Pan American Health Organization/World Health Organization (PAHO/WHO). "Veterinary Public Health".

[https://www.paho.org/spc-crb/index.php?option=com_content&view=article&id=391:veterinary-public-health&Itemid=0&showall=1]. Accessed 2 March, 2021.

1.2.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a national plan, guidelines, or law that accounts for the surveillance and control of multiple zoonotic pathogens of public health concern. There is no evidence of such a document on the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries, nor through the country's Legislative Library [1, 2, 3]. However, the CARICOM One Health policy urges collaboration between the public health, agriculture and wildlife/environment sectors, including for joint surveillance and information sharing, joint outbreak investigation, and joint emergency planning and response to emerging issues such as outbreaks of zoonotic or food borne diseases [4, 5]. In addition, one of the coordinated actions of the Caribbean Animal Health Network (CaribVET) is epidemiological surveillance, but CaribVET does not have publicly available plans or guidelines on surveillance and control of zoonotic pathogens [6].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 2 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 02 March, 2021.

[3] Digital Legislative Library of Trinidad and Tobago. [<http://laws.gov.tt/>]. Accessed 2 March, 2021.

[4] One Health One Caribbean One Love. 2016-2017.

[https://www.onehealthcommission.org/index.cfm/37526/83571/one_health_one_caribbean_one_love]. Accessed 2 March, 2021.

[5] Pan American Health Organization. "One Health: From Ideas to Action".

[https://www.paho.org/trt/images/stories/PWR_TRT/one%20health%20workshop%20report.pdf?ua=1&ua=1]. Accessed 2 March, 2021.

[6] Caribbean Animal Health Network (CaribVET). "About the Network". [<https://www.caribvet.net/about-the-network>]. Accessed 2 March, 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 no publicly available evidence that Trinidad and Tobago has a department, agency or similar unit dedicated to zoonotic disease that functions across ministries. The Veterinary Public Health Unit of the Ministry of Health of Trinidad and Tobago is responsible for epidemiological investigations, surveillance and control of zoonotic diseases, including yellow fever, brucellosis, and bovine tuberculosis [1]. The unit is responsible for maintenance of a national zoonosis surveillance and control program, however, there is no indication that the unit functions across ministries [1]. The 2018-19 World Health Organization (WHO) Antimicrobial Resistance Country Self Assessment for Trinidad and Tobago indicates that the country has a multi-sectoral working group or coordination committee on AMR established with government leadership for One Health collaboration/coordination, but no additional information is available regarding this coordination [2]. In addition, there is no evidence of a cross-ministry group on the website of the Ministry of Agriculture, Land & Fisheries [3].

[1] Ministry of Health of Trinidad and Tobago. "Veterinary Public Health". [<https://health.gov.tt/services/veterinary-public-health>]. Accessed 2 March, 2021.

[2] World Health Organization. "Global Database for Antimicrobial Resistance Country Self Assessment 2018-19 - Trinidad and Tobago". [<http://amrcountryprogress.org/>]. Accessed 02 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. There is no evidence of such a mechanism on the website of the Ministry of Health nor on the one for the Ministry of Agriculture [1, 2]. Government Veterinary Officers, who provide clinical and preventive services to the farming community, can utilize the Veterinary Diagnostic Laboratory (VDL) for "diagnosis of livestock and major zoonotic diseases in animals from both the public and the private sectors". However, there is no indication that owners of livestock use this process for disease surveillance reporting [3]. The Veterinary Public Health Unit of the Ministry of Health is responsible for the surveillance and control of zoonotic diseases, however, no additional details are provided by the Ministry of Health [4].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 02 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 2 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries. "Veterinary Diagnostic Laboratory". [<https://agriculture.gov.tt/divisions-units/divisions/animal-production-health/veterinary-diagnostic-laboratory/>]. Accessed 2 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. "Veterinary Public Health". [<https://health.gov.tt/services/veterinary-public-health>]. Accessed 2 March, 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 that Trinidad and Tobago has legislation or guidelines that safeguard the confidentiality of information generated through surveillance activities for animals (for owners). The national Veterinary Diagnostic Laboratory (VDL) of the Ministry of Agriculture—which conducts diagnosis of major zoonotic diseases—and the national Veterinary Public Health Unit of the Ministry of Health—which is responsible for the surveillance and control of zoonotic diseases—make no mention of such laws or guidelines [1, 2]. Furthermore there is no evidence of such laws or guidelines the Ministry of Health's and Ministry of Agriculture's websites [3, 4]. The Data Protection Act of 2011, is intended to ensure protection of an individual's right to privacy and the right to maintain sensitive personal information as private and personal. However, there is no mention of these protections pertaining to animals as property of owners [5].

[1] Ministry of Agriculture, Land & Fisheries. "Veterinary Diagnostic Laboratory". [<https://agriculture.gov.tt/divisions-units/divisions/animal-production-health/veterinary-diagnostic-laboratory/>]. Accessed 3 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "Veterinary Public Health". [<https://health.gov.tt/services/veterinary-public-health>]. Accessed 3 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[5] Parliament - Republic of Trinidad and Tobago. Act No. 13 of 2011. "Data Protection Act, 2011". [<http://www.ttparliament.org/legislations/a2011-13.pdf>]. Accessed 3 March, 2021.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Trinidad and Tobago conducts surveillance of zoonotic disease in wildlife. Two recent publications, from 2017 and 2018, in the journal of Tropical Medicine and Infectious Disease indicate there are active—targeted sampling and testing based on risk factors—and passive—based on suspected cases based on clinical signs—systems for surveillance of rabies in the bat population in Trinidad [1, 2]. Rabies is one of the priority zoonotic and infectious diseases in the Caribbean [3]. In September 2017, Trinidad and Tobago hosted a Pan American Health Organization and Caribbean Animal Health Network (CaribVET) regional workshop on rabies surveillance [4]. The Veterinary Diagnostic Laboratory (VDL) of the Ministry of Agriculture, Land & Fisheries in Trinidad "facilitates" diagnostic testing for the Wildlife Section [5]. The Caribbean Public Health Agency (CARPHA), with the head office in Port-of-Spain, Trinidad, conducts surveillance on vector-borne diseases, including dengue, chikungunya, and malaria [6, 7]. Furthermore, In 2017, CARPHA launched the regional Caribbean Vector-Borne Diseases Network (CariVecNet), which acts as an exchange centre for surveillance information on vector-borne diseases [8, 9].

[1] Seetahal, Janine FR, et al. 2017. "The history of rabies in Trinidad: Epidemiology and control measures." Tropical Medicine and Infectious Disease 2.3: 27. [<https://www.mdpi.com/2414-6366/2/3/27/htm>] Accessed 3 March, 2021.

[2] Seetahal, Janine, et al. 2018. "Rabies in the Caribbean: A Situational Analysis and Historic Review." Tropical Medicine and Infectious Disease 3.3: 89. [<https://www.mdpi.com/2414-6366/3/3/89>]. Accessed 3 March, 2021.

- [3] Caribbean Animal Health Network (CaribVET). "News - New article published - Rabies In the Caribbean: A Situational analysis and historic Review". [<https://www.caribvet.net/training/training-workshops/rabies-surveillance-workshop>]. Accessed 3 March, 2021.
- [4] Caribbean Animal Health Network (CaribVET). "PAHO/CaribVET Caribbean Regional Workshop on Rabies Surveillance, 20th -21st September 2017, Trinidad". [<https://rabiesalliance.org/world-rabies-day/event/pahocaribvet-caribbean-regional-workshop-rabies-surveillance>]. Accessed 3 March, 2021.
- [5] Ministry of Agriculture, Land & Fisheries. "Veterinary Diagnostic Laboratory". [<https://agriculture.gov.tt/divisions-units/divisions/animal-production-health/veterinary-diagnostic-laboratory/>]. Accessed 3 March, 2021.
- [6] Caribbean Public Health Agency (CARPHA). "Surveillance and Health Analysis". [<http://carpha.org/What-We-Do/Research/Current-Research/Surveillance-and-Health-Analysis>]. Accessed 3 March, 2021.
- [7] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks". [<https://www.carpha.org/What-We-Do/LABS/Overview>]. Accessed 3 March, 2021.
- [8] Caribbean Public Health Agency (CARPHA). 22 August 2017. "Regional Network Launched to Collaborate on Zika and Other Vector-Borne Diseases". [<https://carpha.org/More/Media/Articles/ArticleID/194/Regional-Network-Launched-to-Collaborate-on-Zika-and-Other-Vector-Borne-Diseases>]. Accessed 3 March, 2021.
- [9] Caribbean Vector-Borne Diseases Network (CariVecNet). [<http://carivecnet.carpha.org/>]. Accessed 3 March, 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: 25.23

2017

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 6.67

2017

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a national plan, legislation, or regulation on zoonotic disease hence there is no evidence of one which would include mechanisms for working with the private sector in controlling or responding to zoonoses. There is no evidence of such a plan on the websites of the Ministry of Health, the Ministry of Agriculture, nor in the country's Legislative Library [1, 2, 3]. The CARICOM One Health policy framework from 2014 mentions the private sector and requests that the private sector be engaged in One Health initiatives as part of multidisciplinary and multi-sector collaboration [4]. Regional private sector groups are members of the Caribbean Animal Health Network (CaribVET) [5].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[3] Digital Legislative Library of Trinidad and Tobago. [<http://laws.gov.tt/>]. Accessed 3 March, 2021.

[4] One Health One Caribbean One Love. 2014. "Technical Note - CARICOM One Health Policy".

[https://www.onehealthcommission.org/index.cfm/37526/83571/one_health_one_caribbean_one_love]. Accessed 3 March, 2021

[5] Caribbean Animal Health Network (CaribVET). [<https://www.caribvet.net/>]. Accessed 3 March, 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 that Trinidad and Tobago has 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. The Ministry of Health, Ministry of National Security, and Ministry of Agriculture, Land & Fisheries offer no such evidence on their websites [1, 2, 3]. In 2014, the Government of Canada handed over a new Biosafety Level 3 (BSL-3) modular biological containment laboratory to the Caribbean Public Health Agency (CARPHA), located in Port of Spain, Trinidad and Tobago which was the first of its kind for the Caribbean region [4]. The lab is set up to rapidly identify samples suspected for a diverse range of diseases - including Yellow fever, West Nile virus, Rabies, and emerging infectious

diseases with epidemic potential [4.] However, no information on storage, processing, and inventory management is available [5]. Furthermore, although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [6]. In addition, there is no relevant information on the VERTIC BWC legislation database [7].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[2] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[4] Caribbean Public Health Agency. 14 May, 2014. "CARPHA's New Laboratory Promises Faster Detection and Response to Control Disease Outbreaks in the Caribbean". [<https://caricom.org/carphas-new-laboratory-promises-faster-detection-and-response-to-control-disease-outbreaks-in-the-caribbean/>]. Accessed 3 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 3 March, 2021.

[6] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 3 March, 2021.

[7] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 3 March, 2021.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has in place legislation related to biosecurity which address requirements such as physical containment, operation practices, and cybersecurity of facilities in which especially dangerous pathogens and toxins are stored or processed. Trinidad and Tobago's Bacteriological (Biological) and Toxin Weapons Act of 2012 states offenses for unlawful use or handling of biological agent or toxins, and states that the Minister of National Security may make regulations requiring security measures of any biological agent or toxin, including manufacturing and storage [1]. However, there is no evidence that such regulations exist, and there is no mention of failure reporting systems or cybersecurity [1]. Furthermore, no additional information is available on the websites of the Ministry of Health, the Ministry of National Security, or the one for the Ministry of Agriculture, Land & Fisheries [2, 3, 4]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [5]. In addition, there is no relevant information on the VERTIC BWC legislation database [6].

[1] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 3 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 3 March, 2021.

[6] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 3 March, 2021.

1.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has an established agency responsible for the enforcement of biosecurity legislation and regulations. According to Trinidad and Tobago's Bacteriological (Biological) and Toxin Weapons Act of 2012, the National Security Minister is responsible for establishing a Bacteriological and Toxin Weapons Committee consisting of 7 to 11 members, including a medical doctor, microbiologist, and representatives from the Ministry of Health [1]. The functions of the committee include advising the Minister on matters relevant to the making of regulations under the Act and to advise on and monitor the implementation of regulations made under the Act [1]. However, there is no publicly available evidence that this committee exists and no additional information about the committee's activities is available, including through the Ministry of Health and the Ministry of National Security [2, 3]. Furthermore, although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [4]. In addition, there is no relevant information on the VERTIC BWC legislation database [5].

[1] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 3 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[4] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 3 March, 2021.

[5] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 3 March, 2021.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that shows that Trinidad and Tobago has taken action to consolidate its inventories of dangerous pathogens and toxins into a minimum number of facilities. There is no evidence of such an action on the websites of the Ministry of Health, the Ministry of National Security nor on the one for the Ministry of Agriculture, Land and Fisheries [1, 2, 3]. There is also no indication of such a consolidation by the Caribbean Public Health Agency (CARPHA) Laboratory [4]. Trinidad and Tobago's Bacteriological (Biological) and Toxin Weapons Act of 2012 does not address consolidation of inventories specifically, though it does state that the National Security Minister may make regulations prescribing security measures for manufacturing and storage of any biological agent or toxin [5]. Furthermore, although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [6]. In addition, there is no relevant information on the VERTIC BWC legislation database [7].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[2] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks". [<https://www.carpha.org/What-We>

Do/LABS/Overview]. Accessed 3 March, 2021.

[5] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 3 March, 2021.

[6] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 3 March, 2021.

[7] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 3 March, 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: 0

There is no publicly available evidence that Trinidad and Tobago has in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax and/or Ebola, which would preclude culturing a live pathogen. The Caribbean Public Health Agency (CARPHA), in conjunction with the Pan American Health Organization of the World Health Organization (PAHO/WHO), has facilitated access to laboratory facilities at the WHO-Collaborating Centers at the United States Centers for Disease Control and Prevention and Public Health Agency Canada for diagnosis of Ebola cases [1]. As of 2014, the Biosafety Level 3 (BSL3) laboratory at CARPHA was being prepared to receive and test clinical samples from suspected Ebola patients, using molecular diagnostic methods; however Ebola viral culture will not be conducted at this laboratory, since this can only be done safely in a BSL4 laboratory facility[1]. There is no information about diagnostic testing for anthrax and/or Ebola on the websites of the Ministry of Health, the Ministry of National Security, nor on the one for the Ministry of Agriculture, Land and Fisheries [2, 3, 4]. In addition, Anthrax is not listed among the CARPHA laboratory testing services, however, CARPHA directs that in suspected cases of cutaneous anthrax, specimens may be taken from the skin lesions and blood cultures [5, 6].

[1] Caribbean Public Health Agency (CARPHA). 15 December 2014. CARPHA Response to the Ebola Epidemic in West Africa". [https://new.carpha.org/Portals/0/Documents/Ebola-What_is_CARPHA_Doing_FINAL_15122014.pdf]. Accessed 3 March, 2021

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Laboratory Testing Services". [<https://carpha.org/What-We-Do/Laboratory/Laboratory-Testing-Services>]. Accessed 3 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Collecting of Samples from Skin Lesions". [<https://carpha.org/What-We-Do/Laboratory/Annex-1-SPECIMEN-COLLECTION-GUIDELINES/Samples-from-Skin-Lesions>]. Accessed 3 March, 2021.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago 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. There have, however, been one-off biosecurity trainings in the country. In 2014, the Caribbean Public Health Agency (CARPHA) hosted two workshops, on shipping of infectious substances and biosafety practices in a clinical laboratory [1]. In 2016, the Caribbean Animal Health Network (CaribVET) hosted three workshops on poultry biosecurity [2]. Furthermore, in June of 2020, the International Federation of Biosafety Associations (IFBA) welcomed a new partnership with CARPHA regarding biosafety and biosecurity. However, there is no mention as to whether this includes biosecurity training [3]. In addition, the Ministry of Health, the Ministry of National Security, and the Ministry of Agriculture, Land and Fisheries make no mention of standardized biosecurity training on their websites [4, 5, 6]. Moreover, Trinidad and Tobago's Bacteriological (Biological) and Toxin Weapons Act of 2012 does not mention biosecurity training [7]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [8]. There is no relevant information on the VERTIC BWC legislation database [9].

[1] Caribbean Public Health Agency (CARPHA). 5 December, 2014. "CARPHA Trains Laboratory Personnel to Better Manage Outbreak Situations in the Region". [<https://carpha.org/More/Media/Articles/ArticleID/85/CARPHA-Trains-Laboratory-Personnel-to-Better-Manage-Outbreak-Situations-in-the-Region>]. Accessed March 3, 2021.

[2] Caribbean Animal Health Network (CaribVET). "April: the month of Biosecurity, April 2016, Guyana, Trinidad, Tobago". [<https://www.caribvet.net/training/training-workshops/april-the-month-of-biosecurity>]. Accessed 20 November 2018.

[3] International Federation of Biosafety Associations (IFBA). 11 June, 2020. "The IFBA Welcomes new Partnership with the Caribbean Public Health Agency (CARPHA)". [<https://internationalbiosafety.org/the-ifba-welcomes-new-partnership-with-the-caribbean-public-health-agency-carpha/>]. Accessed 3 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 March, 2021.

[5] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 March, 2021.

[6] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 3 March, 2021.

[7] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 3 March, 2021.

[8] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 3 March, 2021.

[9] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 3 March, 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has regulations or licensing conditions specifying that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic

potential are subject to drug testing, background checks, and psychological or mental fitness checks. The Ministry of Health, the Ministry of National Security, and the Ministry of Agriculture, Land and Fisheries make no mention of such requirements [1, 2, 3]. Furthermore, there is also no mention of personnel checks through the Trinidad Public Health Laboratory or the Caribbean Public Health Agency (CARPHA) laboratory [4, 5]. In addition, Trinidad and Tobago's Bacteriological (Biological) and Toxin Weapons Act of 2012 does not cover personnel checks for those with access to especially dangerous pathogens. [6] Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [7]. In addition, there is no relevant information on the VERTIC BWC legislation database [8].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.

[2] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. "Trinidad Public Health Laboratory". [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 4 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks". [<https://carpha.org/What-We-Do/LABS/Overview>]. Accessed 4 March, 2021.

[6] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 4 March, 2021.

[7] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.

[8] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 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 no publicly available information on national regulations on the safe and secure transport of infectious substances (Categories A and B). Trinidad and Tobago has regulations on the safe and secure transport of infectious substances (Categories A and B), but only through the Caribbean Public Health Agency (CARPHA). The CARPHA—with the head office in Port-of-Spain, Trinidad—Laboratory User Manual provides guidelines and requirements for the preparation, packaging, and shipping of specimens, including Category A and B infectious substances. [1] The guidelines are according to Annex 2 of the World Health Organization (WHO) Guidance on regulations for the Transport of Infectious Substances 2011-2012. [1] The Trinidad and Tobago Bacteriological (Biological) and Toxin Weapons Act of 2012 does not address transport of infectious substances, and no other legislation captures this topic [2, 3]. Furthermore, there is no evidence of such a regulation on the websites of the Ministry of Health, the Ministry of Transport, the Ministry of National Security, nor on the one of the Ministry of Agriculture [4, 5, 6, 7]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [8]. In addition, there is no relevant information on the VERTIC BWC legislation database [9].

[1] Caribbean Public Health Agency (CARPHA). "Laboratory User Manual - Guidelines for Preparation, Packing and Shipping Specimens". [<https://carpha.org/What-We-Do/Laboratory/Annex-2-GUIDELINES-FOR-PREPARATION-PACKING-AND-SHIPPING-SPECIMENS>]. Accessed 4 March, 2021.

- [2] Parliament - Republic of Trinidad and Tobago. Act No. 4 of 2012. "Bacteriological (Biological) and Toxin Weapons Act". [<http://www.ttparliament.org/legislations/a2012-04.pdf>]. Accessed 4 March, 2021.
- [3] Government of the Republic of Trinidad and Tobago. "Digital Legislative Library". [<http://laws.gov.tt/>]. Accessed 4 March, 2021.
- [4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.
- [5] Ministry of Works and Transport of Trinidad and Tobago. [<http://www.mowt.gov.tt/#&panel1-2>]. Accessed 4 March, 2021.
- [6] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.
- [7] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.
- [8] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.
- [9] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has national legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. The Ministry of Health indicates that "surveillance at ports to prevent the introduction and exportation of disease and vectors" is part of the duties of Public Health Inspectors, but no further information is available [1]. A working paper titled, International Activities of the Government of Canada related to Article X of the Biological and Toxin Weapons Convention: Update 2015, out of the United Nations Office at Geneva indicates that, beginning in 2015, Canada has been supporting the enhancement of export controls and border security measures to prevent the proliferation and trafficking of weapons of mass destruction (WMDs), including biological materials, in the Caribbean [2]. There is no evidence of such legislation, regulation, or guidance available through the Ministry of Works & Transport, Ministry of Trade and Industry, Ministry of National Security, and Ministry of Agriculture, Land and Fisheries [3, 4, 5, 6]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [7]. In addition, there is no relevant information on the VERTIC BWC legislation database [8].

- [1] Ministry of Health of Trinidad and Tobago. "Public Health Inspectors". [<https://health.gov.tt/services/public-health-inspection/>]. Accessed 4 March, 2021.
- [2] The United Nations Office at Geneva. "Working Paper 3: International Activities of the Government of Canada related to Article X of the Biological and Toxin Weapons Convention: Update 2015". [[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/3BAB21866EC7F6B1C1257F17002CF205/\\$file/2015+MSP+WP+3+CANADA-+Adv_Ver.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/3BAB21866EC7F6B1C1257F17002CF205/$file/2015+MSP+WP+3+CANADA-+Adv_Ver.pdf)]. Accessed 4 March, 2021.
- [3] Ministry of Works & Transport of Trinidad and Tobago. [<http://www.mowt.gov.tt/>]. Accessed 4 March, 2021.
- [4] Ministry of Trade and Industry of Trinidad and Tobago. [<https://tradeind.gov.tt/>]. Accessed 4 March, 2021.
- [5] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.
- [6] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.
- [7] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building

Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.
[8] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has in place national biosafety legislation or regulations. A Caribbean regional forum in 2017 included mention of the Caribbean Public Health Agency (CARPHA)'s role in assisting Member States in areas of biosafety and biosecurity [1]. In 2014, CARPHA received a Biosafety Level 3 (BSL-3) laboratory, and there is evidence that CARPHA has conducted biosafety trainings [2, 3]. Trinidad and Tobago does have a National Biosafety Policy pertaining to biotechnology, such as genetically modified organisms (GMOs) [4]. There is also a Regional Project for Implementing National Biosafety Frameworks in the Caribbean Sub-Region, which pertains to biotechnology, but they are frameworks and not legislation [5]. Furthermore, there is no indication of biosafety legislation or regulations through the Ministry of Health or Ministry of Agriculture, Land, and Fisheries websites [6, 7]. In addition, Trinidad and Tobago's Occupational Safety and Health Act of 2004 states that laboratory workers are among those who do not have the right to refuse work where safety and health are in danger [8]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [9]. In addition, there is no relevant information on the VERTIC BWC legislation database [10].

[1] Caribbean Public Health Agency (CARPHA). "Regional Laboratories Prepare to Detect and Respond to New and Emerging Diseases". [<https://carpha.org/More/Media/Articles/ArticleID/192/Regional-Laboratories-Prepare-to-Detect-and-Respond-to-New-and-Emerging-Diseases>]. Accessed 4 March, 2021.

[2] Caribbean Public Health Agency. 14 May, 2014. "CARPHA's New Laboratory Promises Faster Detection and Response to Control Disease Outbreaks in the Caribbean". [<https://caricom.org/carphas-new-laboratory-promises-faster-detection-and-response-to-control-disease-outbreaks-in-the-caribbean/>]. Accessed 4 March, 2021.

[3] Caribbean Public Health Agency (CARPHA). 5 December, 2014. "CARPHA Trains Laboratory Personnel to Better Manage Outbreak Situations in the Region". [<https://carpha.org/More/Media/Articles/ArticleID/85/CARPHA-Trains-Laboratory-Personnel-to-Better-Manage-Outbreak-Situations-in-the-Region>]. Accessed 4 March, 2021.

[4] Government of the Republic of Trinidad and Tobago - Ministry of the Attorney General and Legal Affairs. "National Biosafety Policy of Trinidad and Tobago". [<http://tt.biosafetyclearinghouse.net/documents/national%20policy.pdf>]. Accessed 4 March, 2021.

[5] Regional Project for Implementing National Biosafety Frameworks in the Caribbean Sub-Region. [<https://caribbeanbiosafety.org/>]. Accessed 4 March, 2021.

[6] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.

[7] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.

[8] Ministry of Legal Affairs of Trinidad and Tobago. Act No. 1 of 2004, Amended by 3 of 2006. "Occupational Safety and Health Act". [https://rgd.legalaffairs.gov.tt/laws2/alphabetical_list/lawspdfs/88.08.pdf]. Accessed 4 March, 2021.

[9] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.

[10] VERTIC Database. "Trinidad and Tobago." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 4 March, 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 no publicly available evidence that Trinidad and Tobago has an established agency responsible for the enforcement of biosafety legislation and regulations as there is no evidence that the country has in place national biosafety legislation or regulations. There is no evidence of such legislation or agency on the websites of the Ministry of Health, the Ministry of Agriculture nor on the one for the Caribbean Public Health Agency (CARPHA) [1, 2, 3]. A Caribbean regional forum in 2017 included mention of CARPHA's role in assisting Member States in areas of biosafety and biosecurity but there is no mention of any legislation or regulation [4]. The Occupational Safety and Health Agency is responsible for enforcement of Trinidad and Tobago's Occupational Safety and Health Act of 2004, though the Act states that laboratory workers are among those who do not have the right to refuse work where safety and health are in danger [5]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [6]. In addition, there is no relevant information on the VERTIC BWC legislation database [7].

[1] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt/]. Accessed 4 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [https://agriculture.gov.tt/]. Accessed 4 March, 2021.

[3] Caribbean Public Health Agency (CARPHA). [http://carpha.org/]. Accessed 4 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). 30 July, 2017. "Regional Laboratories Prepare to Detect and Respond to New and Emerging Diseases". [https://carpha.org/More/Media/Articles/ArticleID/192/Regional-Laboratories-Prepare-to-Detect-and-Respond-to-New-and-Emerging-Diseases]. Accessed 4 March, 2021.

[5] Ministry of Legal Affairs of Trinidad and Tobago. Act No. 1 of 2004, Amended by 3 of 2006. "Occupational Safety and Health Act".

[http://www.vertic.org/media/National%20Legislation/Trinidad_and_Tobago/TT_Occupational_Safety_and_Health_Act.pdf]. Accessed 4 March, 2021.

[6] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [https://bwc-ecbm.unog.ch/state/trinidad-and-tobago]. Accessed 4 March, 2021.

[7] VERTIC Database. "Trinidad and Tobago." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/]. Accessed 4 March, 2021.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago 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 Caribbean Public Health Agency (CARPHA) has a Training Unit with a strategic framework for the agency's training function, including Laboratory Quality Assurance and Management as part of the Public Health priority area, though there is no indication that this involves standardized, mandatory training [1]. A 2014 news post by the CARPHA mentions training workshops for participants from 12 Caribbean countries on the shipping of infectious substances and biosafety practices in clinical laboratory [2]. However, there is no evidence of standardized biosafety trainings on the websites of the Ministry of Health and the Ministry of Agriculture, Land and Fisheries make [3, 4]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [5]. In addition, there is no relevant information on the VERTIC BWC legislation database [6].

[1] Caribbean Public Health Agency (CARPHA). "Monitoring and Evaluation - Training Strategy".

[<http://carpha.org:8086/What-We-Do/Monitoring-and-Evaluation>]. Accessed 4 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). 5 December, 2021. "CARPHA Trains Laboratory Personnel to Better Manage Outbreak Situations in the Region". [<https://carpha.org/More/Media/Articles/ArticleID/85/CARPHA-Trains-Laboratory-Personnel-to-Better-Manage-Outbreak-Situations-in-the-Region>]. Accessed 4 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.

[6] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago 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. A summary of 2013 activities of the Caribbean Public Health Agency (CARPHA) indicates that need assessments and capacity building for biorisk management was conducted in 5 CARPHA member states, however, no additional details are available [1]. Furthermore, the Ministry of Health, Ministry of National Security, or Ministry of Agriculture, Land and Fisheries provide no information on dual use research or an assessment to determine whether ongoing research is occurring [2, 3, 4]. A presentation in April 2018 from a regional workshop on developments relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean indicates that CARICOM Member States have not prioritized the development of regulatory frameworks to prevent the misuse of science and technology [5]. Although Trinidad and Tobago is party to the BWC, it has not shared Confidence Building Measures. [6] In addition, there is no relevant information on the VERTIC BWC legislation database [7].

- [1] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks - 2013 Activities at a Glance". [<http://carpha.org:8086/What-We-Do/Laboratory-Services-and-Networks>]. Accessed 4 March, 2021.
- [2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.
- [3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.
- [4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.
- [5] The United Nations Office at Geneva. "Regulatory Frameworks to Prevent the Misuse of Science and Technology - Regional Workshop on Science and Technology: Developments Relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean". [[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/8D3E81383571A952C125827C00441E47/\\$file/CARICOM_SnT+Worshop+LAC.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/8D3E81383571A952C125827C00441E47/$file/CARICOM_SnT+Worshop+LAC.pdf)]. Accessed 4 March, 2021.
- [6] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.
- [7] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 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 that Trinidad and Tobago has a national policy requiring oversight of dual use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. There is no evidence of such a legislation or regulation on the websites of the Ministry of Health, the Ministry of National Security nor on the one of the Ministry of Agriculture, Land and Fisheries [1, 2, 3]. A presentation in April 2018 from a regional workshop on developments relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean indicates that CARICOM Member States have not prioritized the development of regulatory frameworks to prevent the misuse of science and technology [4]. Although Trinidad and Tobago is party to the BWC, it has not shared Confidence Building Measures [5]. In addition, there is no relevant information on the VERTIC BWC legislation database [6].

- [1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.
- [2] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.
- [3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.
- [4] The United Nations Office at Geneva. "Regulatory Frameworks to Prevent the Misuse of Science and Technology - Regional Workshop on Science and Technology: Developments Relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean". [[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/8D3E81383571A952C125827C00441E47/\\$file/CARICOM_SnT+Worshop+LAC.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/8D3E81383571A952C125827C00441E47/$file/CARICOM_SnT+Worshop+LAC.pdf)]. Accessed 4 March, 2021.
- [5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.
- [6] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 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 that Trinidad and Tobago has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. There is no such evidence on the websites of the Ministry of Health, the Ministry of National Security, or one the one for the Ministry of Agriculture, Land and Fisheries [1, 2, 3]. The Agreement Establishing the Caribbean Public Health Agency (CARPHA) states that CARPHA is responsible for "conduct of relevant research on public-health priorities in the Caribbean" [4]. There is no evidence that CARPHA is responsible for oversight of research with especially dangerous pathogens, though CARPHA is equipped to investigate communicable diseases through security laboratories, as well as specialized units, such as an experimental mosquito colony [5]. A presentation in April 2018 from a regional workshop on developments relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean indicates that CARICOM Member States have not prioritized the development of regulatory frameworks to prevent the misuse of science and technology [6]. Although Trinidad and Tobago is party to the BWC, it has not shared Confidence Building Measures [7]. In addition, there is no relevant information on the VERTIC BWC legislation database [8].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.

[2] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). "Agreement Establishing the Caribbean Public Health Agency (CARPHA)". [https://carpha.org/Portals/0/Documents/CARPHA_IGA.pdf]. Accessed 4 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Public Health Activities - Communicable Diseases". [<https://carpha.org/What-We-Do/Communicable-Diseases>]. Accessed 4 March, 2021.

[6] The United Nations Office at Geneva. "Regulatory Frameworks to Prevent the Misuse of Science and Technology - Regional Workshop on Science and Technology: Developments Relevant to the Biological Weapons Convention (BWC) for Latin America and the Caribbean".

[[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/8D3E81383571A952C125827C00441E47/\\$file/CARICOM_SnT+Worshop+LAC.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/8D3E81383571A952C125827C00441E47/$file/CARICOM_SnT+Worshop+LAC.pdf)]. Accessed 4 March, 2021.

[7] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.

[8] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 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 that Trinidad and Tobago has national legislation, regulation, policy, or other guidance, requiring the screening of synthesized DNA before it is sold. There is no such evidence provided by the Ministry of Works &

Transport, the Ministry of Health, the Ministry of National Security, or by the Ministry of Agriculture, Land and Fisheries [1, 2, 3, 4]. Furthermore, there is no evidence that the Caribbean Community (CARICOM) and the Caribbean Public Health Agency (CARPHA) has relevant legislation, regulation, policy or other guidance [5, 6]. Although Trinidad and Tobago is party to the Biological Weapons Convention (BWC), it has not shared Confidence Building Measures [7], In addition, there is no relevant information on the VERTIC BWC legislation database [8].

- [1] Ministry of Works & Transport of Trinidad and Tobago. [<http://www.mowt.gov.tt/>]. Accessed 4 March, 2021.
 [2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 4 March, 2021.
 [3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 4 March, 2021.
 [4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 4 March, 2021.
 [5] Caribbean Community (CARICOM). [<https://www.caricom.org/>]. Accessed 4 March, 2021.
 [6] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 4 March, 2021.
 [7] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. "Trinidad and Tobago". [<https://bwc-ecbm.unog.ch/state/trinidad-and-tobago>]. Accessed 4 March, 2021.
 [8] VERTIC Database. "Trinidad and Tobago." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/t/>]. Accessed 4 March, 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: 0

There is insufficient available evidence that the national laboratory system of Trinidad and Tobago has the capacity to conduct diagnostic tests for at least 5 of the 10 WHO-defined core tests. There is no evidence that the Trinidad and Tobago Public Health Laboratory (PHL)—which is associated with the National Surveillance Unit—can conduct any of the tests. There is evidence that the Caribbean Public Health Agency (CARPHA) Laboratory—which serves as the regional reference laboratory—can perform 4 of the 10 WHO-defined core tests. The PHL provides surveillance of communicable diseases, and there is mention of laboratory support for infectious diseases such as tuberculosis and AIDS, though the types of tests used are not defined [1]. The Ministry of Health provides a list of HIV counseling and testing sites in the different regions of the country [2]. A report from the Pan American Health Organization of the World Health Organization (PAHO/WHO), *Influenza and Other Respiratory Virus Surveillance Systems in the Americas*, indicates that reverse transcription polymerase chain reaction (RT-PCR) surveillance for influenza is conducted at the CARPHA Laboratory, which is located in Port-of-Spain, Trinidad [3, 4, 5]. In addition to PCR testing for influenza virus (flu), the CARPHA Laboratory testing services include 3 other WHO-defined core tests: PCR identification and drug sensitivity testing for pulmonary tuberculosis; microscopy for malaria; and identification and serotyping for typhoid [6]. The CARPHA laboratory indicates that the Expanded Program on Immunization (EPI) field guide or the EPI manager in-country has further information on certain vaccine preventable diseases covered under the EPI elimination or eradication program, including poliomyelitis, but no further information is available [6]. In addition, no evidence is available that Trinidad and Tobago has publicly defined the four country-specific tests through the Ministry of Health [7].

[1] Ministry of Health of Trinidad and Tobago. "Trinidad Public Health Laboratory". [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 5 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "HIV Counseling and Testing Sites". [<https://data.miraquetemiro.org/sites/default/files/documentos/HIV%20Testing%20&%20Counselling%20Policy.pdf2>]. Accessed 5 March, 2021.

[3] Pan American Health Organization - World Health Organization Regional Office for the Americas. 2017. "Influenza and Other Respiratory Virus Surveillance Systems in the Americas: 2017". [https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=scientific-technical-publications-5740&alias=42245-influenza-other-respiratory-virus-surveillance-systems-americas-245&Itemid=270&lang=en]. Accessed 5 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks". [<https://www.carpha.org/What-We-Do/LABS/Overview>]. Accessed 5 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Laboratory User Manual - Location and Contact Information".

[[https://carpha.org/Portals/0/GUL-Q05-001-05_User%20Manual\[1452\].pdf?ver=2020-04-16-180718-920](https://carpha.org/Portals/0/GUL-Q05-001-05_User%20Manual[1452].pdf?ver=2020-04-16-180718-920)]. Accessed 5 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Laboratory User Manual - Laboratory Testing Services". [<https://carpha.org/What-We-Do/Laboratory/Laboratory-Testing-Services>]. Accessed 5 March, 2021.

[7] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 5 March, 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 insufficient evidence that Trinidad and Tobago has a national plan, strategy or similar document for conducting testing during a public health emergency, which includes considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. There is no evidence of such a plan or strategy in the country's Covid-19 Action Plan nor in the Office of Disaster Preparedness and Management (ODPM)'s National Pandemic Plan [1, 2]. Although there is evidence that Trinidad and Tobago increased its testing capacity during the Covid-19 pandemic, this was done through the Caribbean Public Health Agency (CARPHA) and was not part of a national plan nor did it include testing for novel pathogens [3]. In addition, there is mention in the Pan American Health Organization (PAHO)'s "Response to Covid-19 in the Americas" plan of May 2020, that it trained "50 laboratory personnel to expand national testing capacities" in Trinidad and Tobago. However, this was done through PAHO [4]. Furthermore, there is no evidence of such a plan on the websites of the Ministry of Health, the National Public Health Laboratory nor on the one for the ODPM [5, 6, 7].

[1] Ministry of Health of Trinidad and Tobago. "Covid-19 (Novel Coronavirus) Action Plan. [<http://www.nwrha.co.tt/covid-19-action-plan/>]. Accessed 6 March, 2021.

[2] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. "National Pandemic Response Plan". [<http://odpm.gov.tt/sites/default/files/Trinidad-PanFlu-Snapshot.pdf>]. Accessed 6 March, 2021.

[3]. Trinidad and Tobago the Guardian. 23 February, 2021. "CARPHA increases testing capacity for COVID-19 Virus". [<https://www.guardian.co.tt/news/carpha-increases-testing-capacity-for-covid19-virus-6.2.1294711.f5561c55b3>]. Accessed 6 March, 2021.

[4]. Pan American Health Organization (PAHO). "Response to Covid-19 in the Americas "- Trinidad and Tobago (pg 75). 31 May, 2020. [<https://reliefweb.int/sites/reliefweb.int/files/resources/paho-response-covid-19-americas-31-may-2020-v6.pdf>]. Accessed 6 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. "Testing and Screening for Covid-19". [<https://health.gov.tt/covid-19-faqs-and-mythbusters/testing-and-screening-for-covid-19>]. Accessed 6 March, 2021.

[6] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 6 March, 2021.

[7] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 6 March, 2021.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Trinidad and Tobago has a national reference facility which is accredited. According to the SLMTA ("Strengthening Laboratory Management Toward Accreditation"), Trinidad and Tobago's Diagnostics Laboratory Services of the Eric Williams Medical Sciences Complex was awarded, in December of 2019, accreditation through the Jamaica National Agency for Accreditation (JANAAC) to ISO 15189 [1, 2]. ISO 15189 is a standard of the International Organization for Standardization (ISO) that recognizes quality and competence in medical laboratories [3]. However, the Eric Williams Medical Sciences Complex is not Trinidad and Tobago's reference facility. The country's reference facility is the Caribbean Public Health (CARPHA) laboratory that is located in Port-of-Spain, Trinidad. CARPHA's laboratory was also recently awarded accreditation through JANAAC [4]. According to a 2017 peer-reviewed publication in the African Journal of Laboratory Medicine, it has been a challenge to implement quality management systems and accredit laboratories in the Caribbean [5]. There is no further evidence available on the website of the Ministry of Health [6].

[1] Strengthening Laboratory Management Toward Accreditation (SLMTA). "SLMTA Laboratories that have achieved accreditation". [<https://slmta.org/accredited-labs/>]. Accessed 5 March, 2021.

[2] Jamaica National Agency for Accreditation (JANAAC). "Diagnostic Laboratory Service of the Eric Williams Medical Science Complex, this laboratory confirms to the ISO15189:2012 international standard". Granted 9 December, 2019. [<https://www.janaac.gov.jm/accredited-cabs/labs/43-diagnostic-laboratory-service-of-the-eric-williams-medical-science-complex.html>]. Accessed 5 March, 2021.

[3] International Organization for Standardization (ISO). "ISO 15189:2012 Medical laboratories -- Requirements for quality and competence". [<https://www.iso.org/standard/56115.html>]. Accessed 5 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). 11 December 2018. "CARPHA Laboratory Achieves Accreditation for Quality and Competence". [<http://carpha.org/articles/ArticleType/ArticleView/ArticleID/194>]. Accessed 16 March, 2021.

[5] Alemnji G, Edghill L, Guevara G, et al. 2017. "Development and implementation of the Caribbean Laboratory Quality Management Systems Stepwise Improvement Process (LQMS-SIP) Towards Accreditation". African Journal of Laboratory Medicine. 6[1], a496. [<https://doi.org/10.4102/ajlm.v6i1.496>]. Accessed 16 March, 2021.

[6] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 16 March, 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 evidence that Trinidad and Tobago has a national laboratory that serves as a reference facility which is subject to external quality assurance review. There is no evidence that the Trinidad Public Health Laboratory serves as a reference facility, nor is there evidence that it is subject to external quality assurance review [1]. The country does have a laboratory that is ISO15189 accredited (the Diagnostics Laboratory Services of the Eric Williams Medical Sciences Complex), however there is no evidence that it is subject to external quality assurance review [2]. Furthermore, there is no evidence of such a facility on the websites of the Ministry of Health, nor on the one for the Ministry of Agriculture [3, 4]. In addition no

mention of external quality assurance review for the Caribbean Public Health Agency (CARPHA) is made by CARPHA [5].

[1] Ministry of Health of Trinidad and Tobago. "Trinidad Public Health Laboratory ". [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 5 March, 2021.

[2] Jamaica National Agency for Accreditation (JANAAC). "Diagnostic Laboratory Service of the Eric Williams Medical Science Complex, this laboratory confirms to the ISO15189:2012 international standard". Granted 9 December, 2019. [<https://www.janaac.gov.jm/accredited-cabs/labs/43-diagnostic-laboratory-service-of-the-eric-williams-medical-science-complex.html>]. Accessed 5 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 5 March, 2021.

[4] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 5 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Laboratory Services and Networks". [<https://www.carpha.org/What-We-Do/LABS/Overview>]. Accessed 5 March, 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: 0

There is insufficient evidence that Trinidad and Tobago has a nationwide specimen transport system. The country uses private courier systems, such as DHL, which manages specimen handling and transport, including temperature-controlled shipments and time sensitive transportation. However, there is no mention on DHL's website as to whether it can cover 80% or higher of Trinidad and Tobago in transport [1]. The Caribbean Public Health Agency (CARPHA) laboratory provides detailed instructions on preparation, packaging and shipping, and indicates that all specimens must be routed through the relevant National Reference/Public Health Laboratory or the Ministry of Health [2, 3]. However, there is no information on specimen transport systems on the website of the Ministry of Health [4].

[1] DHL Trinidad and Tobago. "Life Sciences & Healthcare". [<https://www.logistics.dhl/tt-en/home/industry-sectors/life-sciences-and-healthcare.html>]. Accessed 6 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "Laboratory User Manual - Guidelines for Preparation, Packing and Shipping Specimens". [<https://carpha.org/What-We-Do/Laboratory/Annex-2-GUIDELINES-FOR-PREPARATION-PACKING-AND-SHIPPING-SPECIMENS>]. Accessed 6 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Laboratory Services - Specimen Collection Information". [<https://carpha.org/What-We-Do/Laboratory/Specimen-Collection-Information>]. Accessed 6 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 6 March, 2021.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has a plan in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. There is no such evidence in the country's "National Pandemic Response Plan" nor in its "Covid-19 Action Plan" [1, 2]. Although the Ministry of Health lists, on its website, the laboratories licensed to test for the coronavirus, they are "private entities" and there is no evidence that this is part of a national plan to rapidly authorize laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak [3]. In addition, there is no evidence of such a plan on the websites of the Ministry of Health, the Ministry of Agriculture, the National Public Health Laboratory, nor on the one for the Office of Disaster Preparedness and Management (ODPM) [4, 5, 6, 7].

[1] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. "National Pandemic Response Plan". [<http://odpm.gov.tt/sites/default/files/Trinidad-PanFlu-Snapshot.pdf>]. Accessed 6 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "Covid-19 (Novel Coronavirus) Action Plan". [<http://www.nwrha.co.tt/covid-19-action-plan/>]. Accessed 6 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. "Private entities for Covid-19 testing". [<https://health.gov.tt/private-entities-for-covid-19-testing>]. Accessed 6 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 6 March, 2021.

[5] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 6 March, 2021.

[6] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 6 March, 2021.

[7] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 6 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: 1

There is evidence that Trinidad and Tobago, as part of the Caribbean Public Health Agency (CARPHA), conducts ongoing event-based surveillance and analysis for infectious disease. However, there is insufficient evidence that this is done on a daily basis. The Caribbean Public Health Agency (CARPHA) hosts a Tourism and Health Program (THP), a real-time system for hotel management and public health officials to identify events such as outbreaks early [1, 2]. CARPHA also has the Caribbean Vessel Surveillance System (CVSS) for rapid information flow and coordinated multi-sectoral response for public health events occurring among visitors from passenger ships [1, 3]. However, there is no evidence that THP or CVSS is analyzed on a daily basis. Trinidad and Tobago has an Office of Disaster Preparedness and Management (ODPM) which manages several national risk plans including a "National Pandemic Plan" and an "early warning system". However, there is no evidence that this includes ongoing event-based surveillance and analysis for infectious disease on a daily basis [4, 5]. In addition, there is no evidence that the country conducts this type of surveillance on a daily basis on the website of the the Ministry of Health, nor

on the one for the Ministry of Agriculture, Land and Fisheries [6, 7].

- [1] Caribbean Public Health Agency (CARPHA). "Tourism and Health Program - (THP) Surveillance and Response System". [https://carpha.org/THP/About-The-Program]. Accessed 6 March, 2021.
- [2] Caribbean Public Health Agency (CARPHA). "THP: THiS Hotel Based Surveillance". [https://carpha.org/THP/THiS-Hotel-Based-Surveillance]. Accessed 14 August 2020.
- [3] CARPHA. "Surveillance and Response System". [http://carpha.org:8086/What-We-Do/Tourism-and-Health-Programme/Surveillance-and-Response-System]. Accessed 6 March, 2021.
- [4] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. "National Pandemic Response Plan". [http://odpm.gov.tt/sites/default/files/Trinidad-PanFlu-Snapshot.pdf]. Accessed 6 March, 2021.
- [5] Office of Disaster Preparedness and Management (ODPM). "Early Warning System". [http://www.odpm.gov.tt/EarlyWarning]. Accessed 6 March, 2021.
- [6] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt/]. Accessed 6 March, 2021.
- [7] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [https://agriculture.gov.tt/]. Accessed 6 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 that Trinidad and Tobago has reported a potential public health emergency of international concern (PHEIC), to the WHO within the last two years. No outbreaks or potential PHEIC's, including Covid-19, in Trinidad and Tobago have been reported in the past two years, either on the World Health Organization's (WHO) Disease Outbreak News page, weekly bulletins on outbreaks, and other emergencies or by the media [1, 2, 3]. Furthermore there is no evidence that Trinidad and Tobago reported a PHEIC to the WHO within the past two years on the websites of the Ministry of Health, the Office of Disaster Preparedness and Management (ODPM) nor on the one for the Caribbean Public Health Agency (CARPHA) [4, 5, 6].

- [1] World Health Organization (WHO). "Emergencies preparedness, response - Disease Outbreak News (DONs)". [http://www.who.int/csr/don/en/]. Accessed 6 March, 2021.
- [2] World Health Organization (WHO). "Emergency Preparedness, Response - Trinidad and Tobago". [https://www.who.int/csr/don/archive/country/tto/en/]. Accessed 6 March, 2021.
- [3] WHO Newsroom. [https://www.who.int/news-room]. Accessed 6 March, 2021.
- [4] Ministry of Health of Trinidad and Tobago. [https://health.gov.tt/]. Accessed 6 March, 2021.
- [5] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [http://www.odpm.gov.tt/]. Accessed 6 March, 2021.
- [6] Caribbean Public Health Agency (CARPHA). [http://carpha.org/]. Accessed 6 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 publicly available evidence that Trinidad and Tobago operates an electronic reporting surveillance system at both the national and sub-national level. The Ministry of Health and its National Surveillance Unit as well as the Public Health Laboratory make no mention of electronic reporting [1, 2]. In addition, a 2017 report from the Pan American Health Organization of the World Health Organization (PAHO/WHO), Influenza and Other Respiratory Virus Surveillance Systems in the Americas, indicates that Trinidad and Tobago does not have an online report for its surveillance systems [3]. A 2012 report on the strategic plan for strengthening Trinidad and Tobago's National Health Information System mentions that IT infrastructure is one of the challenges that confronts the surveillance system, and no update on the rollout of this strategic plan is available [4]. The Caribbean Public Health Agency (CARPHA) hosts a Tourism and Health Information System (THP), a real-time system for hotel management and public health officials to identify events such as outbreaks early on [5]. CARPHA also has the Caribbean Vessel Surveillance System (CVSS) for rapid information flow and coordinated multi-sectoral response for public health events occurring among visitors from passenger ships [6]. However, there is no other indication of an electronic reporting surveillance system through CARPHA [7].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 6 March, 2021.

[2] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 6 March, 2021.

[3] Pan American Health Organization - World Health Organization Regional Office for the Americas. 2017. "Influenza and Other Respiratory Virus Surveillance Systems in the Americas: 2017".

[https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=scientific-technical-publications-5740&alias=42245-influenza-other-respiratory-virus-surveillance-systems-americas-245&Itemid=270&lang=en]. Accessed 6 March, 2021.

[4] Prepared for Ministry of Health of Trinidad and Tobago by Connect-To-Health. 2012. "Strategic Plan for Strengthening the National Health Information System 2012-2016". [<http://www.who.int/goe/policies/countries/tto/en/>]. Accessed 6 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Tourism and Health Program - (THP) Surveillance and Response System". [<https://carpha.org/THP/About-The-Program>]. Accessed 6 March, 2021.

[6] CARPHA. "Surveillance and Response System". [<http://carpha.org:8086/What-We-Do/Tourism-and-Health-Programme/Surveillance-and-Response-System>]. Accessed 6 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). [<https://carpha.org/>]. Accessed 6 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 publicly available evidence that Trinidad and Tobago operates an electronic reporting surveillance system, hence there is no evidence that it has a surveillance system that collects ongoing or real-time laboratory data. The Ministry of Health and its National Surveillance Unit, as well as the Public Health Laboratory make no mention of electronic reporting [1, 2]. In addition, a 2017 report from the Pan American Health Organization of the World Health Organization (PAHO/WHO), Influenza and Other Respiratory Virus Surveillance Systems in the Americas, indicates that Trinidad and Tobago does not have an online report for its surveillance systems [3]. A 2012 report on the strategic plan for strengthening Trinidad and Tobago's National Health Information System mentions that IT infrastructure is one of the challenges that confronts the surveillance system, and no update on the rollout of this strategic plan is available [4]. The Caribbean Public Health Agency (CARPHA) hosts a Tourism and Health Information System (THP), a real-time system for hotel management and public health officials to

identify events such as outbreaks early [5]. CARPHA also has the Caribbean Vessel Surveillance System (CVSS) for rapid information flow and coordinated multi-sectoral response for public health events occurring among visitors from passenger ships. [6] However, there is no other indication of an electronic reporting system that would include collecting ongoing or real time laboratory data through CARPHA [7].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 6 March, 2021.

[2] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 6 March, 2021.

[3] Pan American Health Organization - World Health Organization Regional Office for the Americas. 2017. "Influenza and Other Respiratory Virus Surveillance Systems in the Americas: 2017".

[https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=scientific-technical-publications-5740&alias=42245-influenza-other-respiratory-virus-surveillance-systems-americas-245&Itemid=270&lang=en]. Accessed 6 March, 2021.

[4] Prepared for Ministry of Health of Trinidad and Tobago by Connect-To-Health. 2012. "Strategic Plan for Strengthening the National Health Information System 2012-2016". [<http://www.who.int/goe/policies/countries/tto/en/>]. Accessed 6 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Tourism and Health Program - (THP) Surveillance and Response System". [<https://carpha.org/THP/About-The-Program>]. Accessed 6 March, 2021.

[6] CARPHA. "Surveillance and Response System". [<http://carpha.org:8086/What-We-Do/Tourism-and-Health-Programme/Surveillance-and-Response-System>]. Accessed 6 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). [<https://carpha.org/>]. Accessed 6 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: 1

There is publicly available evidence that electronic health records are commonly in use in Trinidad and Tobago. The country's eHealth profile from the World Health Organization's Global Observatory for eHealth—which is based on findings from a 2015 global survey on the use of eHealth in support of universal health coverage—indicates that Trinidad and Tobago does not have a national electronic health records (EHR) system [1, 2]. A published dissertation from 2014 that looked at use of EHR among physicians in Trinidad and Tobago found that 38% of public and private practice physicians who responded to a survey indicated their practices had components of EHR [3]. Furthermore, there is no evidence of electronic health records being commonly in use on the Ministry of Health 's website [4]. In addition, there is no indication that the Caribbean Public Health Agency (CARPHA) has EHRs commonly in use [5]. However, EHR has been a topic of interest for CARPHA as recently as June 2018, when a representative from the Pan American Health Organization (PAHO) presented a report on the effective implementation and the steady growth of electronic medical records over the past 15 years [6].

[1] World Health Organization (WHO). "eHealth Country Profile - Trinidad and Tobago".

[<http://www.who.int/goe/publications/atlas/2015/tto.pdf>]. Accessed 7 March, 2021.

[2] World Health Organization (WHO). "Global Observatory for eHealth".

[<http://www.who.int/goe/publications/atlas/2015/en/>]. Accessed 7 March, 2021.

[3] Mohamud, K. Saint Mary's University of Minnesota, PhD Dissertation. 2014. "Electronic health records in Trinidad and Tobago". [<https://pqdtopen.proquest.com/doc/1748994844.html?FMT=ABS>]. Accessed 7 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). [<http://carpha.org>]. Accessed 7 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "63rd Annual CARPHA Health Research Conference: June 14-16, 2018". [<http://conference.carpha.org/Portals/0/Documents/CARPHA%202018%20WIMJ%20Supplement.pdf>]. Accessed 7 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 that Trinidad and Tobago's national public health system has access to electronic health records of individuals in their country. The country's eHealth profile from the World Health Organization's Global Observatory for eHealth—which is based on findings from a 2015 global survey on the use of eHealth in support of universal health coverage—indicates that Trinidad and Tobago does not have a national electronic health records system [1, 2]. Furthermore there is no mention of access to electronic health records of individuals on the website of the Ministry of Health nor on the one for the Public Health Laboratory [3, 4]. In addition, there is no indication that the Caribbean Public Health Agency (CARPHA) has EHRs commonly in use [5].

[1] World Health Organization (WHO). "eHealth Country Profile - Trinidad and Tobago".

[<http://www.who.int/goe/publications/atlas/2015/tto.pdf>]. Accessed 7 March, 2021.

[2] World Health Organization (WHO). "Global Observatory for eHealth".

[<http://www.who.int/goe/publications/atlas/2015/en/>]. Accessed 7 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[4] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>].

[5] Caribbean Public Health Agency (CARPHA). [<http://carpha.org>]. Accessed 7 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 of data standards to ensure data is comparable, as electronic health records are not commonly in use in Trinidad and Tobago. The country's eHealth profile from the World Health Organization's Global Observatory for eHealth—which is based on findings from a 2015 global survey on the use of eHealth in support of universal health coverage—indicates that Trinidad and Tobago does not have a national electronic health records system. [1, 2] Furthermore there is no mention of electronic health records on the website of the Ministry of Health nor on the one for the Public Health Laboratory [3, 4]. in addition, there is no indication that the Caribbean Public Health Agency (CARPHA) has EHRs commonly in use [5].

[1] World Health Organization (WHO). "eHealth Country Profile - Trinidad and Tobago".

[<http://www.who.int/goe/publications/atlas/2015/tto.pdf>]. Accessed 7 March, 2021.

[2] World Health Organization (WHO). "Global Observatory for eHealth".

[<http://www.who.int/goe/publications/atlas/2015/en/>]. Accessed 7 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[4] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 7 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). [<http://carpha.org>]. Accessed 7 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 responsible for animal, human and wildlife surveillance to share data in Trinidad and Tobago. In 2017, the first Surveillance and Vector Control Working Group was convened by the Caribbean Vector-Borne Diseases Network (CariVecNet), which includes Trinidad and Tobago, and which said this group would act as an avenue for exchange of surveillance information on vector borne diseases [1, 2]. However, there is no evidence by CariVecNet that this exchange of information includes data sharing across relevant ministries [3]. One of the project objectives of the One Health, One Caribbean, One Love project is to "entrench a One Health approach to zoonotic and food borne disease surveillance, diagnosis and response". However, no further details are available on activities regarding this objective [4]. In addition, there is no mention of established mechanisms for sharing data across ministries on the websites of the Ministry of Health, the Ministry of Agriculture, nor on the one of the Public Health Laboratory [5, 6, 7].

[1] Caribbean Public Health Agency (CARPHA). "Regional Experts Lay Groundwork for Unified Response to Vector-Borne Diseases". 22 March, 2017. [<https://carpha.org/More/Media/Articles/ArticleID/179/Regional-Experts-Lay-Groundwork-for-Unified-Response-to-Vector-Borne-Diseases>]. Accessed 7 March, 2021.

[2] Caribbean Vector Borne Disease Network (CariVectNet). "Working Groups".

[<http://carivecnet.carpha.org/workinggroups>]. Accessed 7 March, 2021.

[3] Caribbean Vector Borne Disease Network. (CariVectNet). [<http://carivecnet.carpha.org/>]. Accessed 7 March, 2021.

[4] [1] One Health One Caribbean One Love. 2014. "Technical Note - CARICOM One Health Policy".

[https://www.onehealthcommission.org/index.cfm/37526/83571/one_health_one_caribbean_one_love]. Accessed 7 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[6] Ministry of Agriculture, Land and Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 7 March, 2021.

[7] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 7 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 evidence that Trinidad and Tobago makes de-identified health surveillance data on disease outbreaks publicly available via reports (or other format) on government websites. Although the Ministry of Health publishes daily reports on the number of new and confirmed Covid-19 cases, these reports pertain only to the coronavirus [1]. Furthermore, there is no evidence of such data on the websites of the Ministry of Health, the Ministry of Agriculture, nor on the one of the Public Health Laboratory [2, 3, 4]. The Caribbean Public Health Agency (CARPHA) includes surveillance data from Trinidad and Tobago in reports, such as cases of chikungunya and Zika in the "State of Public Health in the Caribbean 2014-2016". However, this was published in 2017 and there is no evidence of more recent reports [5].

[1] Ministry of Health of Trinidad and Tobago. "Covid-19 Update Trinidad and Tobago". [<https://health.gov.tt/covid-19-news-and-updates/covid-19-update-trinidad-and-tobago>]. Accessed 7 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt>]. Accessed 7 March, 2021.

[3] Ministry of Agriculture, Land and Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt>]. Accessed 7 March, 2021.

[4] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 7 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). 2017. "State of Public Health in the Caribbean 2014-2016". [<https://carpha.org/Portals/0/Documents/State-of-Public-Health-in-the-Caribbean-2014-2016.pdf>]. Accessed 7 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: 1

There is evidence that Trinidad and Tobago makes de-identified Covid-19 surveillance data available via daily reports. The Ministry of Health publishes daily reports which include the number of new Covid-19 cases, recovered cases, overall number of cases since the outbreak began as well as the mortality rate and the number of those in hospital [1].

[1] Ministry of Health of Trinidad and Tobago. "Covid-19 Update Trinidad and Tobago". [<https://health.gov.tt/covid-19-news-and-updates/covid-19-update-trinidad-and-tobago>]. Accessed 7 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 available evidence that Trinidad and Tobago has legislation that safeguards the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Trinidad and Tobago's Data Protection Act of 2011 is intended to ensure protection of an individual's right to privacy and the right to maintain sensitive personal information as private and personal [1]. "Sensitive personal information" is defined in the Act to include information on a person's physical or mental health or condition. [1] According to the Act, a public body may only disclose personal

information if "the head of the public body concerned has approved conditions relating to security and confidentiality" [1].

[1] Parliament - Republic of Trinidad and Tobago. Act No. 13 of 2011. "Data Protection Act, 2011".

[<http://www.ttparliament.org/legislations/a2011-13.pdf>]. Accessed 24 November 2018.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 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 that Trinidad and Tobago's legislation which safeguards the confidentiality of identifiable health information includes mention of protections from cyber attacks. Trinidad and Tobago's Data Protection Act of 2011 is intended to ensure protection of an individual's right to privacy and the right to maintain sensitive personal information as private and personal [1]. "Sensitive personal information" is defined in the Act to include information on a person's physical or mental health or condition [1]. According to the Act, a public body may only disclose personal information if "the head of the public body concerned has approved conditions relating to security and confidentiality", and the Information Commissioner may publish guidelines regarding compliance with the Act, including guidelines dealing with security of information and information systems [1.] In 2012, the Government of Trinidad and Tobago published a National Cyber Security Strategy, which includes the objective of protecting "the physical, virtual and intellectual assets of citizens, organizations and the State" [2]. Furthermore, In 2015 there was a bill introduced to parliament, for an act to provide for the establishment of the Trinidad and Tobago Cyber Security Agency and for matters relating thereto [3]. However, there is no evidence that the cyber security strategy plan was implemented, nor that the introduced bill was passed. In addition, there is no information on protection from cyber attacks available on the Ministry of Health's website [4].

[1] Parliament - Republic of Trinidad and Tobago. Act No. 13 of 2011. "Data Protection Act, 2011".

[<http://www.ttparliament.org/legislations/a2011-13.pdf>]. Accessed 7 March, 2021.

[2] Government of Trinidad and Tobago. 2012. "National Cyber Security Strategy". [https://www.itu.int/en/ITU-D/Cybersecurity/Documents/National_Strategies_Repository/TrinidadTobago_2012_National_Cyber_Security%20Strategy_Final.pdf]. Accessed 7 March, 2021.

[3] Parliament of Trinidad and Tobago - Fifth Session Tenth Parliament Republic. No. 8 of 2015 "Bill - An Act to provide for the establishment of the Trinidad and Tobago Cyber Security Agency and for matters relating thereto".

[<http://www.ttparliament.org/legislations/b2015h08g.pdf>]. Accessed 7 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 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 = 2, 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 that the government of Trinidad and Tobago has made a commitment to share surveillance data, either for more than one disease or only for one disease, during a public health emergency with other countries in the region. Trinidad and Tobago is a Member State of the Caribbean Public Health Agency (CARPHA), which—according to Article 5 of the Agreement Establishing CARPHA—states that CARPHA's functions include provision of accurate, reliable, timely and relevant public health information to "various Caribbean and international audiences" [1]. A presentation at the 2014 Meeting of Caribbean National Epidemiologists and Laboratory Directors points out that, while the existing data sharing systems are functional, they are undocumented and there are no recorded agreements that govern CARPHA sharing of country-reported data to stakeholders; a CARPHA public health information sharing agreement between CARPHA and CARPHA Member States is proposed. [2] However, there is no evidence that such an information sharing agreement was created, and there is no evidence of such a commitment through the Ministry of Health [3]. In addition, CARPHA releases disease situation reports on its website. For example, it reports, on a bi-weekly basis on the Covid-19 pandemic situation in CARPHA Member States such as the number of new cases confirmed. However, this is done through CARPHA and there is no evidence that this is part of a government agreement among its Member States [4].

[1] Caribbean Public Health Agency (CARPHA). "Agreement Establishing the Caribbean Public Health Agency (CARPHA)". [https://carpha.org/Portals/0/Documents/CARPHA_IGA.pdf]. Accessed 7 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). 12th Meeting of Caribbean National Epidemiologists and Laboratory Directors, 2014. "CARPHA Data and Information Sharing Agreement: A Proposal". [http://carpha.org:8086/Portals/0/docs/MEETINGS/Epid_LabDir/Crooks_CARPHA_Data_and_Information_Sharing_Agreement.pdf]. Accessed 7 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[4] CARPHA: "Situation Reports for Covid-19". [<https://carpha.org/What-We-Do/Public-Health/Novel-Coronavirus/CARPHA-Situation-Reports-for-COVID-19>]. Accessed 7 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 insufficient evidence that Trinidad and Tobago has a national system in place to provide support at the sub-national level to conduct contact tracing in preparation for future public health emergencies nor in response to an active public health emergency. Although the Minister of Health announced, on March 20, 2020 that the country was increasing its contact tracing capacities related to Covid-19 by training 100 people to go "on the ground" to contact trace, there is no mention that this was part of a national system to provide support at sub-national level [1]. Furthermore, in a June 2020 report by the American Journal of Tropical Medicine and Hygiene entitled "Health Systems' Resilience: Covid-19 Response in Trinidad and Tobago", the study stated that the Ministry of Health led the way in increasing contact tracing and that the country's response to the coronavirus crisis "resulted in the country being ranked number one in a report published by the University

of Oxford on May 1, 2020". However, there is no evidence in this report that this contact tracing was part of a national system to provide support at the sub-national level in the event of a public health emergency [2]. In addition, there is no available evidence of such a system on the Ministry of Health's website nor on the one for the Public Health Laboratory [3, 4].

[1] The Loop: T&T News. 20 March, 2020. "MOH ramping up contact tracing, COVID-19 testing capabilities".

[https://www.looptt.com/content/moh-ramping-contact-tracing-covid-19-testing-capabilities]. Accessed 8 March, 2021.

[2] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/]. Accessed 8 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt]. Accessed 8 March, 2021.

[4] Trinidad Public Health Laboratory. [https://health.gov.tt/services/trinidad-public-health-laboratory]. Accessed 8 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 insufficient evidence that Trinidad and Tobago provides wraparound services in terms of either economic support or medical attention to enable cases and suspected cases to self-isolate as recommended. In April of 2020, the Ministry of Finance announced the "Covid-19 Salary Relief Grant" which was a grant of up to \$1,500.00 for up to three months, "available to workers who have lost their jobs or salary as a result of Covid-19". However, there is no mention in this relief grant program of it being specially for those in self-isolation [1]. In addition, the Ministry of Health released, on its website, information on how to self-quarantine but there is no mention of economic support and only that a medical professional will oversee the quarantine process [2]. Furthermore, a June 2020 study by the American Journal of Tropical Medicine and Hygiene entitled "Health Systems' Resilience: Covid-19 Response in Trinidad and Tobago" reports that "all persons (including nonnationals) were able to access free COVID-19-related health services in the parallel health system" and that "there were therefore no direct financial barriers to care". However, again, there is no specific mention of economic support for those in self-isolation [3]. Moreover, there is no evidence of such wraparound services on the Ministry of Health's website nor on the one of the Public Health Laboratory [4, 5].

[1] Ministry of Finance of Trinidad and Tobago. April 2020. "Covid-19 Salary Relief Grant".

[https://www.finance.gov.tt/tag/coronavirus/]. Accessed 8 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "Quarantine". [https://health.gov.tt/covid-19-faqs-and-mythbusters/quarantine?id=303]. Accessed 8 March, 2021.

[3] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/]. Accessed 8 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt]. Accessed 8 March, 2021.

[5] Trinidad Public Health Laboratory. [https://health.gov.tt/services/trinidad-public-health-laboratory]. Accessed 8 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 Trinidad and Tobago makes de-identified data on contact tracing efforts for Covid-19 available via daily reports, or other format, on government websites. Although the Ministry of Health publishes daily reports which include data such as the number of new Covid-19 cases, recovered cases, as well as the mortality rate and the number of persons in self-isolation, it does not give any de-identified data on contact tracing efforts for Covid-19 [1]. On July 22, 2020, the Ministry of Health, via its Facebook page, gave details how it was stepping up contact tracing after it was revealed that a positive case had been moving around and not isolating. However, this appeared to be a one-time announcement and not a daily one [2]. In addition, there is no de-identified data on contact tracing efforts for Covid-19 on the Ministry of Health's website, nor on the one for the Public Health Laboratory [3, 4].

[1] Ministry of Health of Trinidad and Tobago. "Covid-19 Update Trinidad and Tobago". [<https://health.gov.tt/covid-19-news-and-updates/covid-19-update-trinidad-and-tobago>]. Accessed 7 March, 2021.

[2] Ministry of Health of Trinidad and Tobago Facebook page. 22 July, 2020. "Ministry of Health initiates aggressive contact tracing after patient #139 tests positive for Covid-19". [<https://www.facebook.com/watch/?v=1145976382440244>]. Accessed 8 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt>]. Accessed 8 March, 2021.

[4] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 8 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 insufficient evidence that Trinidad and Tobago has a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts either in preparation for future public health emergencies or in response to an active public health emergency. The country's "Covid-19 Action Plan" states that healthcare professionals will be stationed at all ports of entry and that all persons entering any of these ports of entry will be screened. However, there is no mention that this is part of a cooperative agreement with the border control authorities [1]. In addition, in a June 2020 report by the American Journal of Tropical Medicine and Hygiene entitled "Health Systems' Resilience: Covid-19 Response in Trinidad and Tobago", the study stated that the government created a Cabinet-approved inter-ministerial task force to ensure a collaborative approach for the management of the Covid-19 pandemic. This, for example, included decision-making and guidelines from the Ministry of Health and border/immigration restrictions implemented by the Ministry of National Security. Yet there is no mention of any agreement in place between the ministries to identify suspected and potential cases in international travelers and trace and

quarantine their contacts in the event of a public health emergency [2]. Furthermore, there is no evidence of such an agreement on the websites of the Ministry of Health, the Ministry of National Security nor on the one for the Public Health Laboratory [3, 4, 5].

[1] Government of the Republic of Trinidad and Tobago. "Covid-19 Action Plan". [<http://www.nwrha.co.tt/covid-19-action-plan/>]. Accessed 8 March, 2021.

[2] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/>]. Accessed 8 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 8 March, 2021.

[4] Ministry of National Security of Trinidad and Tobago. [<https://nationalsecurity.gov.tt/>]. Accessed 8 March, 2021.

[5] Trinidad Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 8 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 Trinidad and Tobago has applied epidemiology training programs but there is no available evidence that the government provides resources to send citizens to another country to participate in applied epidemiology training programs. As part of the Caribbean Public Health Agency (CARPHA), Trinidad and Tobago has an applied epidemiology program. The Caribbean Regional Field Epidemiology and Laboratory Training Program (CR-FELTP) offers "a core curriculum of competency-based classroom learning and on-the-job training, to develop field epidemiology skills and tools to respond to public health issues in the Caribbean through surveillance, outbreak investigation, and operational research and analysis" [1]. However, there is no indication by CARPHA or the Ministry of Health that resources are provided by the government to send citizens to another country to participate in the program [1, 2]. Beginning in 2016, with the support of Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET), Trinidad and Tobago was one of several countries providing an epidemiology training program (FETP-Frontline) to rapidly and efficiently train health workers with a specific focus on Zika disease surveillance [3].

[1] Caribbean Public Health Agency (CARPHA). "What is a Field Epidemiology and Laboratory Training Programme (FELTP)". [<http://carpha.org/What-We-Do/FELTP/Introduction>]. Accessed 7 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 7 March, 2021.

[3] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). "Establishing FETP Frontline Across Latin America and the Caribbean in Response to Zika". [<https://www.tephinet.org/establishing-fetp-frontline-across->

latin-america-and-the-caribbean-in-response-to-zika]. Accessed 7 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

The field epidemiology training program available to Trinidad and Tobago is explicitly inclusive of animal health professionals. Trinidad and Tobago can participate in the Caribbean Regional Field Epidemiology and Laboratory Training Program (CR-FELTP) of the Caribbean Public Health Agency (CARPHA). The CR-FELTP offers "a core curriculum of competency-based classroom learning and on-the-job training, to develop field epidemiology skills and tools to respond to public health issues in the Caribbean through surveillance, outbreak investigation, and operational research and analysis." [1] The program is inclusive of animal health professionals. [2]

[1] Caribbean Public Health Agency (CARPHA). "What is a Field Epidemiology and Laboratory Training Programme (FELTP)". [<http://carpha.org/What-We-Do/FELTP/Introduction>]. Accessed 7 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "Field Epidemiology and Laboratory Training Program (FELTP) - Structure". [<http://carpha.org/what-we-do/feltp/structure>]. Accessed 7 March, 2021, 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: 2

There is publicly available evidence that Trinidad and Tobago has a national public health emergency response plan in place which addresses planning for multiple communicable diseases with pandemic potential. The Office of Disaster Preparedness and Management (ODPM), a Division of the Ministry of National Security, published the National Response Framework in 2010, which includes biological hazards (such as H1N1 pandemic) on the list of hazards that pose the greatest threat to Trinidad and Tobago [1]. The ODPM also considers malaria, dengue fever, and influenza among biological hazards [2]. Furthermore, when the government announced that it had developed and activated its Pandemic Covid-19 Plan and the Health Emergency Operation Centre during the Coronavirus pandemic, it said that these plans were aligned to the existing National Response Framework that embodies an all-hazards approach [3]. In addition, Trinidad and Tobago is part of the Caribbean Disaster Emergency Management Agency (CDEMA) for disaster management in the Caribbean Community (CARICOM). [4] CDEMA's mandate includes "coordinating the establishment, enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States" [4]. There is limited information available on CDEMA's role in public health emergencies. However, the Caribbean Community (CARICOM) indicates that health is one of CDEMA's areas of work, and that CDEMA with the support of the Pan American Health Organization (PAHO) established a Health Disaster Risk Reduction (CHDRR) Committee [5, 6]. In addition, health emergency preparedness and response is one of the functions of the Caribbean Public Health Agency (CARPHA) [7].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf]. Accessed 9 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "Biological Hazards". [http://www.odpm.gov.tt/node/28]. Accessed 9 March, 2021.

[3] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/]. Accessed 9 March, 2021.

[4] Caribbean Disaster Emergency Management Agency (CDEMA). "What is CDEMA's Mandate?". [https://www.cdema.org/about-us#what-is-cdema-s-mandate]. Accessed 9 March, 2021.

[5] Caribbean Community (CARICOM). "Caribbean Disaster Emergency Management Agency (CDEMA)". [https://caricom.org/institutions/caribbean-disaster-emergency-management-agency-cdema/]. Accessed 9 March, 2021.

[6] Caribbean Disaster Emergency Management Agency (CDEMA). 2011. "CDEMA Articles: Caribbean Disaster Emergency Management Agency". [https://www.cdema.org/index.php?option=com_content&view=article&id=951&Itemid=447]. Accessed 9 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). "The Role and Functions of the Caribbean Public Health Agency (CARPHA)". [http://carpha.org/Who-We-Are/Role-and-Functions]. Accessed 9 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 available evidence that Trinidad and Tobago's National Response Framework, the plan that includes emergency response addressing communicable diseases with pandemic potential, has been updated within the last three years. The latest available version of the framework is from 2010 [1]. The Office of Disaster Preparedness and Management (ODPM), a Division of the Ministry of National Security, published the National Response Framework in 2010, which includes biological hazards (such as H1N1 pandemic) on the list of hazards that pose the greatest threat to Trinidad and Tobago [1]. The ODPM also considers malaria, dengue fever, and influenza among biological hazards [2]. Furthermore, when the government announced that it had developed and activated its Pandemic Covid-19 Plan and the Health Emergency Operation Centre during the Coronavirus pandemic, it said that these plans were aligned to the existing National Response Framework that embodies an all-hazards approach [3]. Trinidad and Tobago is part of the Caribbean Disaster Emergency Management Agency (CDEMA) for disaster management in the Caribbean Community (CARICOM) [4]. CDEMA's mandate includes "coordinating the establishment, enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States" [4]. There is limited information available on CDEMA's role in public health emergencies. However, the Caribbean Community (CARICOM) indicates that health is one of CDEMA's areas of work, and that CDEMA, with the support of the Pan American Health Organization (PAHO), established a Health Disaster Risk Reduction (CHDRR) Committee [5, 6]. In addition, health emergency preparedness and response is one of the functions of the Caribbean Public Health Agency (CARPHA) [7].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 9 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "Biological Hazards". [<http://www.odpm.gov.tt/node/28>]. Accessed 9 March, 2021.

[3] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/>]. Accessed 9 March, 2021.

[4] Caribbean Disaster Emergency Management Agency (CDEMA). "What is CDEMA's Mandate?". [<https://www.cdema.org/about-us#what-is-cdema-s-mandate>]. Accessed 9 March, 2021.

[5] Caribbean Community (CARICOM). "Caribbean Disaster Emergency Management Agency (CDEMA)". [<https://caricom.org/institutions/caribbean-disaster-emergency-management-agency-cdema/>]. Accessed 9 March, 2021.

[6] Caribbean Disaster Emergency Management Agency (CDEMA). 2011. "CDEMA Articles: Caribbean Disaster Emergency Management Agency". [https://www.cdema.org/index.php?option=com_content&view=article&id=951&Itemid=447]. Accessed 9 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). "The Role and Functions of the Caribbean Public Health Agency (CARPHA)". [<http://carpha.org/Who-We-Are/Role-and-Functions>]. Accessed 9 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 Trinidad and Tobago's National Response Framework, the plan that includes emergency response addressing communicable diseases with pandemic potential—from the Office of Disaster Preparedness and Management (ODPM), a Division of the Ministry of National Security—includes considerations for pediatric and other vulnerable populations [1]. However, between 2015-2017 ODPM led a disaster management and evacuation emergency program for persons with special needs [2]. The ODPM public community preparedness guidance recommends identifying

members of the community who may need special assistance during an emergency, such as seniors, individuals who are hearing or mobility impaired, and children [3]. Trinidad and Tobago is part of the Caribbean Disaster Emergency Management Agency (CDEMA) for disaster management in the Caribbean Community (CARICOM) [4]. CDEMA's mandate includes "coordinating the establishment, enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States" [4]. There is limited information available on CDEMA's role in public health emergencies. However, the Caribbean Community (CARICOM) indicates that health is one of CDEMA's areas of work, and that CDEMA, with the support of the Pan American Health Organization (PAHO), established a Health Disaster Risk Reduction (CHDRR) Committee [5, 6].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 9 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. 17 November 2017. "Preparing You! Program for Special Needs Children". [<http://www.odpm.gov.tt/node/976>]. Accessed 9 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. 17 November 2017. "Community Preparedness". [<http://www.odpm.gov.tt/node/37>]. Accessed 9 March, 2021.

[4] Caribbean Disaster Emergency Management Agency (CDEMA). "What is CDEMA's Mandate?".

[<https://www.cdema.org/about-us#what-is-cdema-s-mandate>]. Accessed 9 March, 2021.

[5] Caribbean Community (CARICOM). "Caribbean Disaster Emergency Management Agency (CDEMA)". [<https://caricom.org/institutions/caribbean-disaster-emergency-management-agency-cdema/>]. Accessed 9 March, 2021.

[6] Caribbean Disaster Emergency Management Agency (CDEMA). 2011. "CDEMA Articles: Caribbean Disaster Emergency Management Agency". [https://www.cdema.org/index.php?option=com_content&view=article&id=951&Itemid=447]. Accessed 9 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 Trinidad and Tobago has a specific mechanism for engaging with the private sector to assist with outbreak emergency preparedness and response. The country's National Response Framework mentions that among the responsibilities of Disaster Management Units (DMUs), the localized units responsible for emergency coordination, they should work alongside other first responder and emergency support agencies and private enterprise [1]. However, there is no mention of mechanisms for engaging with the private sector on the Ministry of Health's website nor on the one for the Office of Disaster Preparedness and Management (ODPM) [2, 3]. The Caribbean Disaster Emergency Management Agency (CDEMA) mentions involvement of the private sector, but there is no evidence of a specific mechanism for engagement from either agency [4]. In addition, there is no evidence that the Caribbean Public Health Agency (CARPHA) involves the private sector in assisting with outbreak emergency preparedness and response [5].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 9 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 9 March, 2021.

[3] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 9 March, 2021.

[4] Caribbean Disaster Emergency Management Agency (CDEMA). "CDEMA News". Vol. 3, Iss. 1.

[https://www.cdema.org/CDEMANewsletter-iss1_2017.pdf]. Accessed 9 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 9 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: 1

There is evidence that Trinidad and Tobago has guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic but they exist only for one disease. During the Covid-19 Pandemic, the government started implementing NPIs at the end of March 2020, which included the closure of airports and seaports, schools and places of worship as well guidelines for social distancing and stay-at-home orders [1, 2]. These NPIs were re-implemented in August of 2020 after the Ministry of Health reported an increase in cases. However, there was no mention that these guidelines could be applied to other epidemics [3].

[1] T&T News. 30 March, 2020. "'Stay at home' order takes effect; non-essential activities prohibited".

[<https://www.looptt.com/content/stay-home-order-takes-effect-non-essential-activities-prohibited>]. Accessed 9 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "Covid-19 Guidelines and Regulations. [<https://health.gov.tt/covid-19/covid-19-guidelines-and-regulations>]. Accessed 9 March, 2021.

[3] Reuters. 25 August, 2020. "Trinidad and Tobago Ramps up Measures Against Coronavirus".

[<https://www.usnews.com/news/world/articles/2020-08-15/trinidad-and-tobago-ramps-up-measures-against-coronavirus>]. Accessed 9 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: 1

There is evidence that Trinidad and Tobago has activated its national emergency response plan for an infectious disease outbreak in the past year, however there is insufficient evidence that the country has completed a national-level biological threat-focused exercise in the past year. Starting on March 22, 2020, the government activated its Pandemic COVID Plan which included the Public Health Regulation (2019-nCoV) and the activation of its Health Emergency Operation Centre [1, 2]. According to a June 2020 study by the American Journal of Tropical Medicine and Hygiene entitled "Health Systems' Resilience: Covid-19 Response in Trinidad and Tobago", these plans and strategies were "were aligned to the existing National Response Framework that embodies an all-hazards approach" [1, 3]. Regarding a national-level biological threat-focused exercise, the World Health Organization (WHO)'s Simulation Exercise page states that there was a simulation exercise planned for Trinidad and Tobago on February 1, 2021. However, there is no evidence that this exercise was completed [4]. Furthermore, there is no evidence of such an exercise on Ministry of Health's website nor on the one for the Office of Disaster Preparedness and Management (ODPM) which is in charge of organizing simulation exercises [5, 6].

[1] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/>]. Accessed 9 March, 2021.

[2] Public Health, the Judiciary of Trinidad and Tobago. 22 March, 2020. "THE PUBLIC HEALTH [2019 NOVEL CORONAVIRUS (2019-nCoV)] (NO. 3) REGULATIONS, 2020".

[<https://www.ttlawcourts.org/index.php/component/attachments/download/7020>]. Accessed 9 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 9 March, 2021.

[4] World Health Organization (WHO) Simulation Exercises [<https://extranet.who.int/sph/simulation-exercise?region=All&country=271>]. Accessed 9 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 9 March, 2021.

[6] Office of Disaster Preparedness and Management (ODPM). Simulation Exercises. [<http://www.odpm.gov.tt/exercises>]. Accessed 9 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 Trinidad and Tobago, 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. The country does not appear on the World Health Organization's (WHO) list of after action reviews, and there is no indication of an after action review in the past year on the WHO country and regional pages [1, 2, 3]. In addition, although the World Health Organization (WHO)'s Simulation Exercise page states that there was a simulation exercise planned for Trinidad and Tobago on February 1, 2021, there is no evidence that this exercise was completed [4]. Furthermore, there is also no indication of an after action review or a biological threat-focused IHR on the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries nor on the one for the Office of Disaster Preparedness and Management (ODPM) which is in charge of organizing and reviewing simulation exercises [5, 6, 7].

[1] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - After Action Review". [<https://extranet.who.int/sph/after-action-review?region=All&country=271>]. Accessed 10 March, 2021.

[2] Pan American Health Organization / World Health Organization (WHO) - Regional Office for the Americas. [<https://www.paho.org/hq/index.php?lang=en>]. Accessed 10 March, 2021.

[3] World Health Organization (WHO). "Trinidad and Tobago". [<http://www.who.int/countries/tto/en/>]. Accessed 10 March, 2021.

[4] World Health Organization (WHO) Simulation Exercises [<https://extranet.who.int/sph/simulation-exercise?region=All&country=271>]. Accessed 10 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 10 March, 2021.

[6] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 10 March, 2021.

[7] Office of Disaster Preparedness and Management (ODPM). Simulation Exercises. [<http://www.odpm.gov.tt/exercises>]. Accessed 10 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 that Trinidad and Tobago has, in the past year, undergone a national-level biological threat-focused exercise and hence not one that has included private sector representatives. Trinidad and Tobago does not appear on the World Health Organization's (WHO) list of after action reviews, and there is no indication of an after action review or of a national-level biological threat-focused exercise in the past year on the WHO country and regional pages [1, 2, 3]. In addition, although the World Health Organization (WHO)'s Simulation Exercise page states that there was a simulation exercise planned for Trinidad and Tobago on February 1, 2021, there is no evidence that this exercise was completed [4].

Furthermore, there is no evidence that Trinidad and Tobago, in the past year, has undergone a national-level biological threat-focused exercise that has included private sector representatives on the the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries nor on the one for the Office of Disaster Preparedness and Management (ODPM) which is in charge of organizing simulation exercises [5, 6, 7].

[1] World Health Organization (WHO). "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH) - After Action Review". [<https://extranet.who.int/sph/after-action-review?region=All&country=271>]. Accessed 10 March, 2021.

[2] Pan American Health Organization / World Health Organization (WHO) - Regional Office for the Americas. [<https://www.paho.org/hq/index.php?lang=en>]. Accessed 10 March, 2021.

[3] World Health Organization (WHO). "Trinidad and Tobago". [<http://www.who.int/countries/tto/en/>]. Accessed 10 March, 2021.

[4] World Health Organization (WHO) Simulation Exercises [<https://extranet.who.int/sph/simulation-exercise?region=All&country=271>]. Accessed 10 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 10 March, 2021.

[6] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 10 March, 2021.

[7] Office of Disaster Preparedness and Management (ODPM). Simulation Exercises. [<http://www.odpm.gov.tt/exercises>]. Accessed 10 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 that Trinidad and Tobago has in place an Emergency Operations Centre. The National Emergency Operations Centre (NEOC), managed by the Office of Disaster Preparedness Management (ODPM), is responsible for activities and strategy for response and relief in the event of a national emergency [1]. The NEOC is based on the coordination of Emergency Support Functions (ESFs), which includes the Ministry of Health responsible for health and medical support functions, though there is no indication that this is for health emergencies, such as a pandemic [2]. According to the ODPM, the National Emergency Operation Center will be staffed with ODPM and other staff from selected Ministries, and ESF agencies to respond to a public emergency [2]. The Centre works with the Regional Health Authorities and the County Medical Officers, and partnerships exist with the Office of Disaster Preparedness and Management (ODPM) and other key first response agencies [2]. There is no evidence that the Caribbean Disaster Emergency Management Agency (CDEMA) has an EOC in place, however CDEMA provides training for national EOCs [3]. Furthermore, there is no evidence that the Caribbean Public Health Agency has an EOC in place [4].

[1] Office of Disaster Preparedness and Management (ODPM), a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 10 March, 2021.

[2]. Office of Disaster Preparedness and Management (ODPM). "National Emergencies Operation Center (NEOC)". [<http://www.odpm.gov.tt/node/67>]. Accessed 10 March, 2021.

[3] Caribbean Disaster Emergency Management Agency (CDEMA). "Emergency Operations Center Training 19th - 21st October, 2015". [https://www.cdema.org/index.php?option=com_content&view=article&id=1532:emergency-operations-center-training-19th-21st-october-2015&catid=58:turks-and-caicos-islands&Itemid=284]. Accessed 10 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 10 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 insufficient evidence that Trinidad and Tobago's National Emergency Operations Center (NEOC) is 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. The National Response Framework mentions that simulation exercises are part of the Engaged Partnership principal, but details and frequency of such exercises are not provided [1]. Furthermore, the Office of Disaster Preparedness Management (ODPM), which manages the NEOC, states that "ODPM tries to execute national exercises every year and that during the exercises, an emergency situation is simulated and the national response framework and standard operating procedures are tested". However, the latest evidence of such a drill on their website dates back to 2009 [2]. In addition, there is no evidence that the Caribbean Disaster Emergency Management Agency (CDEMA) has an EOC in place, however CDEMA provides training for national EOCs [3]. Furthermore, there is no evidence that the Caribbean Public Health Agency has an EOC in place [4] The latest available CDEMA annual report is from 2013-2014 [5].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 10 March, 2021.

[2]. Office of Disaster Preparedness and Management. Simulation Exercises. [<http://www.odpm.gov.tt/exercises>]. Accessed 10 March, 2021.

[3] Caribbean Disaster Emergency Management Agency (CDEMA). "Emergency Operations Center Training 19th - 21st October, 2015". [https://www.cdema.org/index.php?option=com_content&view=article&id=1532:emergency-operations-center-training-19th-21st-october-2015&catid=58:turks-and-caicos-islands&Itemid=284]. Accessed 10 March, 2021.

[4] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 10 March, 2021.

[5] Caribbean Disaster Emergency Management Agency (CDEMA). "Annual Reports". [<https://www.cdema.org/about-us>]. Accessed 10 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 insufficient evidence that Trinidad and Tobago's National 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. At the end of March 2020, the government activated its National

Emergency Operations Center (NEOC) in response to the Covid-19 health crisis [1]. On April 29, 2020, the Office of Disaster Preparedness and Management (ODPM) ODPM held an initial strategy planning and preparation session at the NEOC headquarters. However, this session was more for preparing for the hurricane season in the context of the coronavirus pandemic and it was not activated with 120 minutes of the identification of a public health emergency or scenario [2]. Furthermore, there is no evidence of such a response or exercise on the websites of the Ministry of Health, the Ministry of National Security nor on the one for the ODPM [3, 4, 5]. In addition, there is no evidence that the Caribbean Disaster Emergency Management Agency (CDEMA) has an EOC in place, however CDEMO provides training for national EOCs [6] There is no evidence that the Caribbean Public Health Agency has an EOC in place [7].

[1] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/>]. Accessed 10 March, 2021.

[2] UN Office for the Coordination of Humanitarian Affairs (OCHA). 1 May, 2020. "ODPM and key stakeholders plan for the upcoming wet/hurricane season in the COVID-19 context". [<https://reliefweb.int/report/trinidad-and-tobago/odpm-and-key-stakeholders-plan-upcoming-wethurricane-season-covid-19>]. Accessed 10 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 10 March, 2021.

[4] Ministry of National Security of Trinidad and Tobago. [<https://nationalecurity.gov.tt/>]. Accessed 10 March, 2021.

[5] Office of Disaster Preparedness and Management (ODPM). [<http://www.odpm.gov.tt/>]. Accessed 10 March, 2021.

[6] Caribbean Disaster Emergency Management Agency (CDEMA). "Emergency Operations Center Training 19th - 21st October, 2015". [https://www.cdema.org/index.php?option=com_content&view=article&id=1532:emergency-operations-center-training-19th-21st-october-2015&catid=58:turks-and-caicos-islands&Itemid=284]. Accessed 10 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 10 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: 0

There is insufficient evidence that Trinidad and Tobago's public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event or that there are publicly available standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event. In March 2010 the Government of Trinidad and Tobago carried out a simulation exercise for a bio-terrorism incident; 'Exercise Bio-Shield', which attempted to identify gaps in the national response to biological attacks and determine ways to strengthen this mechanism [1]. However, there is no evidence that both public health and national security authorities took part in the exercise [1]. In 2017, representatives from Trinidad and Tobago participated in the Synergy 2017, a regional exercise aimed at improving regional responses during an

emergency situation and coordination between relevant agencies, including the Caribbean Disaster Emergency Management Agency (CDEMA) and the Caribbean Public Health Agency (CARPHA) [2]. However, there is no evidence that the exercise included response related to a potential deliberate biological event [2]. The Office of Disaster Preparedness and Management (ODPM) released a draft National Emergency Communications Plan (NECP) in 2017, which is aligned with the National Response Framework—including biological hazards (such as H1N1 pandemic) as major hazards [3, 4]. Towards development of the NECP, risk communication workshops have been held, which include: an introduction of risk communication, overview of the International Health Regulations, and planning a risk communication strategy [5]. Although the NECP does not have a section detailing a risk communication plan that is specifically intended for use during a public health emergency, the ODPM's 2011 Crisis Communication Guidelines and Response Plan offers consistent, comprehensible, and actionable information about potential and actual disaster situations, and includes a scenario of a bioterrorism threat/disease [3, 6]. Furthermore, there is no evidence of publicly available standard operating procedures, guidelines, MOUs or other agreements between the public health and security authorities to respond to a potential deliberate biological event by the Ministry of Health or the Ministry of National Security [7, 8].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "Biological Hazards". [http://www.odpm.gov.tt/node/28]. Accessed 11 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "Caribbean Regional Security, Health and Disaster Agencies Face Comprehensive Readiness Test". [https://carpha.org/More/Media/Articles/ArticleID/169/Caribbean-regional-security-health-and-disaster-agencies-face-comprehensive-readiness-test]. Accessed 11 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. June 2017. "Consultative Document on the National Emergency Communications Plan". [http://www.odpm.gov.tt/sites/default/files/National%20Emergency%20Communications%20Plan%20Consultative%20Edition%2009_05_17.pdf]. Accessed 11 March, 2021.

[4] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [http://www.odpm.gov.tt/node/59]. Accessed 11 March, 2021.

[5] Pan American Health Organization of the World Health Organization (PAHO/WHO). "Risk Communication Workshop - Port of Spain, Trinidad and Tobago, 25 - 26 October 2011". [https://www.paho.org/hq/index.php?option=com_content&view=article&id=6133:2011-risk-communication-workshop-trinidad-tobago&Itemid=4274&lang=pt]. Accessed 11 March, 2021.

[6] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. April 2011. "Crisis Communication Guidelines and Response Plan". [http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAFT.pdf]. Accessed 11 March, 2021.

[7] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt/]. Accessed 11 March, 2021.

[8] Ministry of National Security of Trinidad and Tobago. [http://www.nationalsecurity.gov.tt/]. Accessed 11 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 available evidence that Trinidad and Tobago has a risk communication plan that outlines how messages will reach populations and sectors with different communications needs. The strategy documents used to guide national public health response do not outline how messages will reach populations and sectors with different communication needs. Both the 2017 National Emergency Communications Plan (NECP) and the 2011 Crisis Communication Guidelines and Response Plan do not detail these approaches [1, 2]. The NECP describes procedures for public notifications and public information exchange, which include voice and data services, but does not delineate the intention of different approaches or messages to reach different populations and sectors [1]. In addition, the Crisis Communication Guidelines and Response Plan provide detailed information on different scenarios, such as messages to convey for different types of emergencies, but does not outline how these messages will reach populations and sectors with different communications needs [2]. Furthermore, there is no evidence of this type of strategy on the Ministry of Health's website nor on the one for the Office of Disaster Preparedness and Management (ODPM) [3, 4].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. June 2017. "Consultative Document on the National Emergency Communications Plan".

[http://www.odpm.gov.tt/sites/default/files/National%20Emergency%20Communications%20Plan%20Consultative%20Editio n%2009_05_17.pdf]. Accessed 11 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. April 2011. "Crisis Communication Guidelines and Response

Plan". [<http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAF T.pdf>]. Accessed 11 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. "News Headlines". [<http://www.health.gov.tt/news/>]. Accessed 11 March, 2021.

[4] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://odpm.gov.tt/>]. Accessed 11 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: 1

There is evidence that Trinidad and Tobago has in place, as part of a strategy document—the Crisis Communication Guidelines and Response Plan—a section detailing a risk communication plan that is specifically intended for use during a public health emergency. The Office of Disaster Preparedness and Management (ODPM), a Division of the Ministry of National Security of Trinidad and Tobago, has made public a drafted National Emergency Communications Plan (NECP), which was released in 2017. [1] The NECP is aligned with the National Response Framework, which includes biological hazards (such as H1N1 pandemic) as major hazards, and Risk Communication workshops have been held in the past towards development of this plan [1, 2, 3]. These workshops include an introduction of risk communication, overview of the International Health Regulations, and planning a risk communication strategy, though no section detailing a risk communication plan that is specifically intended for use during a public health emergency [3]. However, the ODPM's 2011 Crisis Communication Guidelines and Response Plan offers consistent, comprehensible, and actionable information about potential and actual

disaster situations, and includes a scenario of a bioterrorism threat/disease [1, 4].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. June 2017. "Consultative Document on the National Emergency Communications Plan".

[http://www.odpm.gov.tt/sites/default/files/National%20Emergency%20Communications%20Plan%20Consultative%20Edition%2009_05_17.pdf]. Accessed 11 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 11 March, 2021.

[3] Pan American Health Organization of the World Health Organization (PAHO/WHO). "Risk Communication Workshop - Port of Spain, Trinidad and Tobago, 25 - 26 October 2011".

[https://www.paho.org/hq/index.php?option=com_content&view=article&id=6133:2011-risk-communication-workshop-trinidad-tobago&Itemid=4274&lang=pt]. Accessed 11 March, 2021.

[4] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. April 2011. "Crisis Communication Guidelines and Response Plan".

[<http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAFT.pdf>]. Accessed 11 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: 1

There is evidence that Trinidad and Tobago's risk communication plan designate a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. According to the government's 2011 Crisis Communication Guidelines and Response Plan, "the timely preparation and release of public emergency information to the news media and public is the responsibility of the Information Task Group (ITG) working under the general direction of the Chief Executive Officer, Office of Disaster Preparedness and Management (CEO, ODPM) and/or, Director of the National Emergency Management Center (Director, NEOC)". Once an emergency or crisis has been declared, the NEOC, "via the ITG spokesperson, will create a positive opportunity for the public positioning of the Government of the Republic of Trinidad and Tobago (GoRTT)" [1].

Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. 2011. "Crisis Communication Guidelines and Response Plan".

[<http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAFT.pdf>]. Accessed 11 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: 2

There is publicly available evidence that the government of Trinidad and Tobago utilizes media platforms to inform the public about public health concerns and/or dispel rumors, misinformation or disinformation. When the government declared Covid-19 as a public health emergency, the Ministry of Health set up a special Covid-19 section which not only publishes daily reports on the number of new cases, as well as those recovered and those hospitalized, it also gives guidelines and regulations on the disease [1, 2]. Furthermore, it used its media platform to dispel rumors about the disease under its section "Covid-19 FAQs and Myth busters" [3]. The Ministry of Health also maintains active Facebook and Twitter pages, including videos of the Minister of Health providing information regarding current health issues but also other public health concerns [4, 5]. For example, not only has it been active during the Coronavirus crisis but also on other health emergencies such as when, it posted on its Facebook page how to protect oneself against malaria or, on December 24, 2018, when the Ministry of Health tweeted, "The Minister of Health emphasizes that there is no outbreak of #malaria in Trinidad and Tobago" [6, 7].

[1] Ministry of Health of Trinidad and Tobago. "Covid-19 Update Trinidad and Tobago". [<https://health.gov.tt/covid-19-news-and-updates/covid-19-update-trinidad-and-tobago>]. Accessed 11 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. " COVID-19 Guidelines and Regulations". [<https://health.gov.tt/covid-19/covid-19-guidelines-and-regulations>]. Accessed 11 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. "Covid-19 FAQs and Myth busters". [<https://health.gov.tt/covid-19/covid-19-faqs-and-mythbusters>]. Accessed 11 March, 2021.

[4] Ministry of Health of Trinidad and Tobago Facebook page. [<https://www.facebook.com/MinistryofHealthTT/>]. Accessed 11 March, 2021.

[5] Ministry of Health of Trinidad and Tobago Twitter account. [https://twitter.com/MOH_TT?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor]. Accessed 11 March, 2021.

[6] Ministry of Health of Trinidad and Tobago Facebook page. 22 November, 2021. "Clean your Surroundings" [<https://m.facebook.com/MinistryofHealthTT/photos/are-your-surroundings-encouraging-rats-and-mosquitoesclean-your-surroundings-to-/1832316846798115/>]. Accessed 11 March, 2021.

[7] Ministry of Health of Trinidad and Tobago Twitter account. "No Malaria Outbreak". 24 December, 2018. [https://twitter.com/moh_tt/status/1034497734936543235?lang=en]. Accessed 11 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 that Trinidad and Tobago's senior leaders have shared misinformation or disinformation on infectious diseases in the past two years. There is no evidence in the country's following media outlets:

"Trinidad and Tobago Newsday", "Trinidad and Tobago Express", "Trinidad and Tobago Guardian" and the "Caribbean Communications Network" (CCN) [1, 2, 3, 4]. There is also no evidence via international news outlets. [5, 6]

[1] Trinidad and Tobago Newsday. [<https://newsday.co.tt/>]. Accessed 11 March, 2021.

[2] Trinidad and Tobago Express. [<https://trinidadexpress.com/>]. Accessed 11 March, 2021.

[3] Trinidad and Tobago Guardian. [<https://www.guardian.co.tt/>]. Accessed 11 March, 2021.

[4] Caribbean Communications Network (CCN). [<https://www.tv6tnt.com/>]. Accessed 11 March, 2021.

[5] BBC Main page. [<https://www.bbc.com/>]. Accessed 16 March, 2021.

[6] CNN Main page. [<https://edition.cnn.com/>] Accessed 16 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: 77.33

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: 155.11

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: 4.0

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: 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 that, in the past year, Trinidad and Tobago issued a restriction, without international/bilateral support, on the export or import of medical goods due to an infectious disease outbreak. According to the International Trade Center (ITC) for Transparency in Trade which monitors temporary trade measures enacted by government authorities in relation to COVID-19, Trinidad and Tobago has neither imposed restrictions on exports nor on imports of medical supplies in the past year [1]. Furthermore, there is no evidence of such a restriction on the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries nor on the one for the Ministry of Foreign and CARICOM Affairs [2, 3, 4].

[1] ICT Transparency in Trade: COVID-19 Temporary Trade Measures [<https://www.macmap.org/covid19>]. Accessed 11 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 11 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 11 March, 2021.

[4] Ministry of Foreign and CARICOM Affairs. [<https://foreign.gov.tt/>]. Accessed 11 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 that, in the past year, Trinidad and Tobago issued a restriction, without international/bilateral support, on the export or import of non-medical goods due to an infectious disease outbreak. According to the International Trade Center (ITC) for Transparency in Trade which monitors temporary trade measures enacted by government authorities in relation to COVID-19, Trinidad and Tobago has neither imposed restrictions on exports

nor on imports of non-medical goods in the past year [1]. Furthermore, there is no evidence of such a restriction on the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries nor on the one for the Ministry of Foreign and CARICOM Affairs [2, 3, 4].

[1] ICT Transparency in Trade: COVID-19 Temporary Trade Measures [<https://www.macmap.org/covid19>]. Accessed 11 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 11 March, 2021.

[3] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 11 March, 2021.

[4] Ministry of Foreign and CARICOM Affairs. [<https://foreign.gov.tt/>]. Accessed 11 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 evidence that Trinidad and Tobago, in the past year, implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. On May 22, 2020, the Minister of National Security announced the closure of all borders and that no international flights would be allowed to enter the country. The Minister said the government decided these restrictions were necessary to "stem the spread of the Covid-19 Coronavirus [1].

[1] Trinidad Express. 22 March, 2020. Carolyn Kissoon. "T&T's borders closed to all [https://trinidadexpress.com/newsextra/t-ts-borders-closed-to-all/article_5061e42c-6b8b-11ea-8328-3f8003c18b6f.html]. Accessed 12 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: 416.75

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 409.34

2018

WHO; national sources

4.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no available evidence that Trinidad and Tobago has a public workforce strategy in place, updated within the last five years, to identify fields where there is an insufficient workforce and strategies to address these shortcomings. In 2009, the Pan American Health Organization (PAHO) indicated that the country faces a shortage of qualified health care professionals and that the Ministry was working to quantify the shortages and recruit specific skills from the international market [1]. A subsequent publication by PAHO in 2011 indicated that Trinidad and Tobago had identified their needs and planned to recruit 450 nurses and 119 medical specialists between 2009 and 2010. [2] Also in 2011, the Ministry of Health released a Strategic Plan for Fiscal Years 2012-2016 includes strategic objectives around reduction of communicable disease prevalence, and corresponding performance indicators that include workforce outcomes [3]. However, there is no evidence of a more recent Strategic Plan on the websites of the Ministry of Health, Ministry of Labour, or on the one for the Ministry of Education [4, 5, 6]. In addition, this lack of a health workforce strategy was highlighted more recently in a June 2020 study done by the American Journal of Tropical Medicine and Hygiene on Trinidad and Tobago's response to the Covid-19 pandemic in which it notes that the country's public healthcare sector has several human resource challenges and that the main ones "relate to absolute shortages in the number, skill set, and distribution of healthcare workers" [7].

[1] Pan American Health Organization of the World Health Organization (PAHO/WHO). "Health Systems Profile: Trinidad & Tobago". [https://www.paho.org/hq/dmdocuments/2010/Health_System_Profile-Trinidad_Tobago_2009.pdf]. Accessed 12 March, 2021.

[2] Pan American Health Organization of the World Health Organization (PAHO/WHO). "Human Resources for Health in the Caribbean: A Review of the Workforce Situation and the National Baselines of the 20 Goals for Human Resources for Health". [https://www.observatoriorh.org/sites/default/files/webfiles/fulltext/CAR_HRH_Situation2011.pdf]. Accessed 12 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. 2011. "Strategic Plan Fiscal Years 2012 - 2016". [https://www.who.int/goe/policies/tnt_strategic_plan2012-2016.pdf?ua=1]. Accessed 12 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 12 March, 2021.

[5] Ministry of Labour and Small Enterprise Development of Trinidad and Tobago. [<https://www.labour.gov.tt/>]. Accessed 12 March, 2021.

[6] Ministry of Education of Trinidad and Tobago. [<http://moe.gov.tt/>]. Accessed 12 March, 2021.

[7] American Journal of Tropical Medicine and Hygiene. 9 June, 2020. Shelly-Ann Hunte et al. "Health Systems' Resilience: COVID-19 Response in Trinidad and Tobago". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7410471/>]. Accessed 12 March, 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 302

2017

WHO/World Bank; national sources

4.1.2b

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence that Trinidad and Tobago has the capacity to isolate patients with highly communicable diseases in a patient isolation facility. In March of 2020, the CEO of the North Central Regional Health Authority (NCRHA) confirmed that the country's Caura Hospital (which is part of the NCRHA) had updated its isolation units. He said, that "the patient isolation facility at the Caura Hospital is a state of the art quarantine facility, with a negative air pressure system and other safety features that make it one of the most advanced patient isolation systems in the world" and that it is "a sanitized isolation building, and the doors are kept locked and secured at all times to prevent breaches and contamination" [1]. There is no evidence of any other of Trinidad and Tobago's main hospitals being equipped to isolate patients with highly communicable diseases. There is no mention of such an isolation unit at the Eric Williams Facility nor at the San Fernando General Hospital [2, 3]. In fact, A 2018 peer-reviewed publication of the San Fernando General Hospital in South Trinidad found that important safety measures, including isolation rooms, were either insufficient or virtually absent [4].

[1] T&T News. 17 March, 2021. "NCRHA: Caura Hospital prepped and ready to treat with COVID-19".

[<https://www.looptt.com/content/ncrha-prepped-and-ready-treat-covid-19>]. Accessed 12 March, 2021.

[2] North Central Regional Health Authority (NCRHA). Eric Williams Medical Sciences Complex. [<https://ncrha.co.tt/eric-williams-medical-sciences-complex/>]. Accessed 12 March, 2021.

[3] South-West Regional Health Authority of Trinidad and Tobago. "San Fernando General Hospital".

[<http://www.swrha.co.tt/content/about-swrha>]. Accessed 12 March, 2021.

[4] Bahall, Mandreker. 2018. "Health services in Trinidad: throughput, throughput challenges, and the impact of a throughput intervention on overcrowding in a public health institution." BMC health services research 18.1: 129.

[<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5819239/>]. Accessed 12 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: 1

There is evidence that Trinidad and Tobago has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years. In March of 2020, the CEO of the North Central Regional Health Authority (NCRHA) confirmed that the country's Caura Hospital (which is part of the NCRHA) had updated and expanded its isolation units in light of the coronavirus pandemic. He said, that "the patient isolation facility at the Caura Hospital is a state of the art quarantine facility, with a negative air pressure system and other safety features that make it one of the most advanced patient isolation systems in the world". He also added that staff at the NCRHA have "managed in record time to commission new spaces at the Caura and the Couva Hospitals for use in the event of a surge in the virus" [1].

[1] T&T News. 17 March, 2021. "NCRHA: Caura Hospital prepped and ready to treat with COVID-19".
[<https://www.looptt.com/content/ncrha-prepped-and-ready-treat-covid-19>]. Accessed 03 May, 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is insufficient evidence that Trinidad and Tobago has a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies and medical supplies for routine needs. The country is a member of the Caribbean Health Agency (CARPHA), which is a partner of the Caribbean Med Labs Foundation (CMLF), a non-governmental organization dedicated to assisting governments around best practice in medical laboratory services in the Caribbean region [1]. CMLF has published the Regional Guidelines for Procurement and Inventory Management, which is intended to set out guidelines for laboratory acquisition and management of goods and services [2]. In 1993, the Ministry of Health retained the National Insurance Property Development Company Limited (NIPDEC) to manage the procurement, storage and distribution of pharmaceutical and non pharmaceutical medical supplies to the nation's public health care institutions, though there is no evidence if and how procurement through NIPDEC applies to laboratory or medical needs [3]. The Public Procurement and Disposal of Public Property Act of 2015 was created to provide for public procurement in accordance with the principles of good governance, and establishes the Office of Procurement Regulation [4, 5]. On December 11, 2020, Global Voices published an article stating that the 2015 Public Procurement Act had been passed by the Senate but that it was still rife with controversy regarding concerns over corruption [6]. Furthermore, there is no

additional information regarding whether the country has a national procurement protocol for the acquisition of laboratory and medical supplies on the websites of the Ministry of Health, the Ministry of Agriculture, Land and Fisheries, the Ministry of Finance nor on the one for CARPHA [7, 8, 9, 10].

- [1] Caribbean Med Labs Foundation. "About Us". [<https://www.cmedlabsfoundation.com/main-menu/our-objectives/>]. Accessed 12 March, 2021.
- [2] Caribbean Med Labs Foundation. ND. "Regional Guidelines for Procurement and Inventory Management". [<http://cmedlabsfoundation.net/images/pguide/introduction.html>]. Accessed 12 March, 2021.
- [3] National Insurance Property Development Company Limited (NIPDEC). "Procurement and Contract Management". [<https://nipdec.com/procurement/>]. Accessed 12 March, 2021.
- [4] Parliament - Republic of Trinidad and Tobago. Act No. 1 of 2015. "Public Procurement and Disposal of Public Property Act, 2015". [<http://www.ttparliament.org/legislations/a2015-01.pdf>]. Accessed 12 March, 2021.
- [5] The Office of Procurement Regulation of Trinidad and Tobago. [<https://oprtrt.org/who-we-are-3>]. Accessed 12 March, 2021.
- [6] Global Voices. 11 December, 2020. Janine Mendes-Franco. "Trinidad & Tobago's procurement regulation bill passes, but corruption concerns linger". [<https://globalvoices.org/2020/12/11/trinidad-tobagos-procurement-regulation-bill-passes-but-corruption-concerns-linger/>]. Accessed 12 March, 2021.
- [7] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 12 March, 2021.
- [8] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 12 March, 2021.
- [9] Ministry of Finance of Trinidad and Tobago. [<https://www.finance.gov.tt/>]. Accessed 12 March, 2021.
- [10] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 12 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: 2

There is evidence that Trinidad and Tobago has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. On March 4, 2020, the Minister of Health denied rumors that there was a shortage of PPEs and said that the country had more than enough in stock should an epidemic or outbreak happen. He stated that Trinidad and Tobago had 23,000 PPEs in stock and was waiting on a shipment of 25,000 more. The Minister added that "as a signatory to the Pan American Health Organization (PAHO) and World Health Organization (WHO), this country has access to PAHO strategic stock of emergency Personal Protective Equipment (PPE) in Panama which can be rushed to T&T in 48 hours" [1]. In July of 2020, the country received a further supply of approximately 12,000 kilograms of equipment for health professionals which included PPE's, protective goggles, isolation gowns, and medical and respiratory masks, which were purchased by the Government of Trinidad and Tobago via the UN Supply Portal and the PAHO Strategic Fund [2].

[1] Trinidad and Tobago Guardian. 4 March, 2020. Gail Alexander. "Deyalsingh: Health workers won't get masks unless needed". [<https://www.guardian.co.tt/news/deyalsingh-health-workers-wont-get-masks-unless-needed-6.2.1070788.0a8b8b6713>]. Accessed 12 March, 2021.

[2]. Pan American Health Organization (PAHO). 27 July, 2020. "PAHO Collaborates with the World Food Program and the Canadian Government to Facilitate Delivery of Personal Protective Equipment to support Trinidad and Tobago's Covid-19

Response". [<https://www.paho.org/en/news/27-7-2020-paho-collaborates-world-food-programme-and-canadian-government-facilitate-delivery>]. Accessed 12 March, 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 available evidence that Trinidad and Tobago has a stockpile of laboratory supplies for national use during a public health emergency. There is no evidence of such a stockpile on the websites of the Ministry of Health, the Public Health Laboratory, the Ministry of Security nor on the one for the Office of Disaster Preparedness and Management (ODPM) [1, 2, 3, 4]. Although in February of 2020, the Pan American Health Organization (PAHO) announced it was traveling to the Caribbean region "to ensure that laboratory specialists are trained and equipped with supplies such as reagents to identify and respond to potential imported cases of the new coronavirus", there is no evidence that this led to a stockpile of laboratory supplies in these countries which includes Trinidad and Tobago [5]. Furthermore, this shortage of reagents was highlighted, in April of 2020, when the deputy director of the Caribbean Public Health Agency, or CARPHA, which is doing testing for 18 Caribbean countries in its regional medical laboratory in Trinidad and Tobago, said that "the lab is actively looking for reagents" [6].

[1] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 12 March, 2021.

[2] Ministry of Health of Trinidad and Tobago: Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 12 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<https://nationalecurity.gov.tt/>]. Accessed 12 March, 2021.

[4] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 12 March, 2021.

[5] Pan American Health Organization (PAHO). 12 February, 2020. "PAHO prepares 8 Caribbean countries for laboratory diagnosis of new coronavirus". [https://www.paho.org/hq/index.php?option=com_content&view=article&id=15723:paho-prepares-8-caribbean-countries-for-laboratory-diagnosis-of-new-coronavirus&Itemid=1926&lang=en]. Accessed 12 March, 2021.

[6] Miami Herald. 2 April, 2020. Jacqueline Charles and Jim Wyss. "A global shortage in key ingredient could affect coronavirus testing in Caribbean". [<https://www.miamiherald.com/news/nation-world/world/americas/haiti/article241701676.html>]. Accessed 12 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 insufficient evidence that Trinidad and Tobago conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. On March 4, 2020, the Minister of Health said that the country had more than enough in stock of medical supplies should an epidemic or outbreak happen. He went on to list 23,000 PPEs in stock and said that the country was waiting on a shipment of 25,000 more. However, there is no mention as to whether this was part of an annual review of the country's stockpile to ensure that it was sufficient for a public health emergency [1]. In addition, there is no evidence of such a requirement or annual review on the websites of the Ministry of Health, the Ministry

of Security, nor on the one for the Office of Disaster Preparedness and Management (ODPM) [2, 3, 4].

[1] Trinidad and Tobago Guardian. 4 March, 2020. Gail Alexander. "Deyalsingh: Health workers won't get masks unless needed". [<https://www.guardian.co.tt/news/deyalsingh-health-workers-wont-get-masks-unless-needed-6.2.1070788.0a8b8b6713>]. Accessed 03 May, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 3 May, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 3 May, 2021.

[4] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 03 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 insufficient evidence that Trinidad and Tobago has a plan or 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 nor that it has a plan or mechanism to procure medical supplies for national use during a public health emergency. At the height of the Covid-19 Pandemic, the University of West Indies (UWI), announced that it had partnered with Trinidad and Tobago's Ministry of Health (MoH) and local manufacturers to "create alternative sources of PPE and medical equipment that could be produced on demand, locally and affordably". However, there is no evidence that this was part of a plan or agreement in place to leverage domestic manufacturing capacity to produce medical supplies for national use during a public health emergency [1]. Furthermore, there is no evidence of such a plan or agreement on the websites of the Ministry of Health, the Ministry of National Security nor on the one for the Office of Disaster Preparedness and Management (ODPM) [2, 3, 4]. Regarding a plan or mechanism for procuring medical supplies, there is no mention of this in the country's Public Procurement and Disposal of Public Property Act of 2015 (approved in December of 2020) [5]. In July of 2020, Trinidad and Tobago's government purchased a supply of 12,000 kilograms of equipment for health professionals which included PPE's, protective goggles, isolation gowns, and medical and respiratory masks. However, this was done via the UN Supply Portal and the PAHO Strategic Fund and not through a national procurement plan [6]. In addition, there is no evidence of such a plan or agreement on the websites of the Ministry of Health, the Ministry of Finance nor on the one for the Caribbean Public Health Agency (CARPHA) [2, 7, 8].

[1] University of West Indies (UWI). "The mother of invention: UWI's COVID-19 response tackles global shortage of medical supplies". [<https://sta.uwi.edu/stacie/stories/mother-invention-uwi%E2%80%99s-covid-19-response-tackles-global-shortage-medical-supplies>]. Accessed 13 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 13 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<https://nationalsecurity.gov.tt/>]. Accessed 13 March, 2021.

[4] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 13 March, 2021.

[5] Parliament - Republic of Trinidad and Tobago. Act No. 1 of 2015. "Public Procurement and Disposal of Public Property Act,

2015". [<http://www.ttparliament.org/legislations/a2015-01.pdf>]. Accessed 13 March, 2021.

[6]. Pan American Health Organization (PAHO). 27 July, 2020. "PAHO Collaborates with the World Food Program and the Canadian Government to Facilitate Delivery of Personal Protective Equipment to support Trinidad and Tobago's Covid-19 Response". [<https://www.paho.org/en/news/27-7-2020-paho-collaborates-world-food-programme-and-canadian-government-facilitate-delivery>]. Accessed 13 March, 2021.

[7] Ministry of Finance of Trinidad and Tobago. [<https://www.finance.gov.tt/>]. Accessed 13 March, 2021.

[8] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 13 March, 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 available evidence that Trinidad and Tobago has a plan or agreement to leverage domestic manufacturing capacity to produce laboratory supplies for national use during a public health emergency nor that it has a plan or mechanism to procure laboratory supplies for national use during a public health emergency. There is no evidence of either plan on the websites of Ministry of Health, the Public Health Laboratory, the Ministry of Security, the Ministry of Finance nor on the one for the Office of Disaster Preparedness and Management (ODPM) [1, 2, 3, 4, 5]. In addition, there is no mention of a plan or mechanism to procure laboratory supplies for national use during a public health emergency in the country's Public Procurement and Disposal of Public Property Act of 2015 (approved in December of 2020) [6]. Furthermore, a lack of reagents was highlighted, in April of 2020, when the deputy director of the Caribbean Public Health Agency, or CARPHA, which was doing testing for 18 Caribbean countries in its regional medical laboratory in Trinidad and Tobago, said that "the lab is actively looking for reagents" [7].

[1] Ministry of Health of Trinidad and Tobago. [<https://health.gov.tt/>]. Accessed 13 March, 2021.

[2] Ministry of Health of Trinidad and Tobago: Public Health Laboratory. [<https://health.gov.tt/services/trinidad-public-health-laboratory>]. Accessed 13 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<https://nationalsecurity.gov.tt/>]. Accessed 13 March, 2021.

[4] Ministry of Finance of Trinidad and Tobago. [<https://www.finance.gov.tt/>]. Accessed 13 March, 2021.

[5] Office of Disaster Preparedness and Management (ODPM) of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 13 March, 2021.

[6] Parliament - Republic of Trinidad and Tobago. Act No. 1 of 2015. "Public Procurement and Disposal of Public Property Act, 2015". [<http://www.ttparliament.org/legislations/a2015-01.pdf>]. Accessed 13 March, 2021.

[7] Miami Herald. 2 April, 2020. Jacqueline Charles and Jim Wyss. "A global shortage in key ingredient could affect coronavirus testing in Caribbean". [<https://www.miamiherald.com/news/nation-world/world/americas/haiti/article241701676.html>]. Accessed 13 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 that Trinidad and Tobago has a plan, program, or guidelines in place for dispensing medical countermeasures (MCMs), as there is no evidence that the country maintains a stockpile of MCMs for national use during a public health emergency. The Ministry of Health, including the Chemistry, Food and Drug Division, does not indicate the country maintains a stockpile of MCMs or has guidelines regarding their dispensing during a public health emergency [1, 2]. There is also no such information on the Ministry of National Security's website, nor on the one for the Office of Disaster Preparedness and Management (ODPM) [3, 4]. In addition, a recent presentation by the Caribbean Public Health Agency (CARPHA) suggests that MCMs are part of the response plan for regional health security, though no additional information is available [5, 6].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 13 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. "Chemistry, Food and Drug Division". [<http://www.health.gov.tt/sitepages/default.aspx?id=93>]. Accessed 13 March, 2021.

[3] Ministry of National Security of Trinidad and Tobago. [<http://www.nationalsecurity.gov.tt/>]. Accessed 13 March, 2021.

[4] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 13 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). ND. "Tourism and Health in the context of Regional Health Security". [<https://carpha.org/THP/About-The-Program>]. Accessed 13 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 13 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 insufficient available evidence that Trinidad and Tobago has a public plan in place to receive health personnel from other countries to respond to a public health emergency. The Caribbean Public Health Agency (CARPHA), in accordance with the Inter-Governmental Agreement (IGA), is mandated to respond to emergencies, including pandemics, in Member States [1, 2].] The National Response Framework—which includes response to biological hazard emergencies—indicates that at Level 3, the most severe level of emergency, the President will declare a national emergency and the Office of Disaster Preparedness and Management (ODPM) will coordinate the acquisition of regional and international aid assistance [3]. Health specialists are among the technical personnel that may be deployed by the Caribbean Disaster Emergency Management Agency's (CDEMA) Rapid Needs Assessment Team (RNAT)—according to CDEMA's Regional Response

Mechanism—immediately after a disastrous event [4]. However, CARPHA, the National Response Framework nor CDEMA provide details on a plan to receive health personnel from other countries. Furthermore, there is no additional information on the websites of the Ministry of Health, the Ministry of National Security nor on the one for the ODPM [5, 6, 7]. In addition, although the Minister of Health, on March 30, 2020, announced that a group of Cuban nurses would be arriving in Trinidad and Tobago to assist in the response to the novel coronavirus disease, there is no evidence that this was part of a public plan in place to receive health personnel from other countries to respond to a public health emergency [8].

- [1] Caribbean Public Health Agency (CARPHA). "Agreement Establishing the Caribbean Public Health Agency (CARPHA)". [https://carpha.org/Portals/0/Documents/CARPHA_IGA.pdf]. Accessed 13 March, 2021.
- [2] Caribbean Community (CARICOM). 16 September 2017. "CARPHA Deploys Staff to Assist Hurricane-Devastated British Virgin Islands". [https://resilientcaribbean.caricom.org/carpha-deploys-staff-to-assist-hurricane-devastated-british-virgin-islands/]. Accessed 13 March, 2021.
- [3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf]. Accessed 13 March, 2021
- [4] Caribbean Disaster Emergency Management Agency's (CDEMA). 2016. "Regional Response Mechanism". [https://www.cdema.org/RRM_Booklet_Final_PDF_version.pdf]. Accessed 13 March, 2021.
- [5] Ministry of Health of Trinidad and Tobago. [http://www.health.gov.tt/]. Accessed 13 March, 2021.
- [6] Ministry of National Security of Trinidad and Tobago. [http://www.nationalsecurity.gov.tt/]. Accessed 13 March, 2021.
- [7] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. [http://www.odpm.gov.tt/]. Accessed 13 March, 2021.
- [8]. T&T News. 30 March, 2020. Ceola Belix. "Covid-19: Cuban nurses coming to T&T to assist in ICU". [https://www.looptt.com/content/covid-19-cuban-nurses-coming-tt-assist-icu]. Accessed 13 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: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 100

2015

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

4.4.1c

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

Input number

Current Year Score: 877.41

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has issued legislation, a policy or a public statement committing to provide prioritized health care services to healthcare workers who become sick as a result of responding to a public health emergency. The Ministry of Health and the Office of Disaster Preparedness and Management, which published the National Response Framework, does not mention prioritization of healthcare workers who become sick [1, 2, 3]. Trinidad and Tobago is part of the Caribbean Disaster Emergency Management Agency (CDEMA) for disaster management in the Caribbean Community (CARICOM) and health emergency preparedness and response is one of the functions of the Caribbean Public Health Agency (CARPHA) [4, 5]. However, there is no evidence from CDEMA or CARPHA of a policy prioritizing healthcare workers who become sick as a result of responding to a public health emergency [6, 7]. In addition, the lack of prioritizing healthcare workers who become sick as a result of responding to a public health emergency was highlighted in an article published in the Trinidad Express on June 17, 2020. The article reported that healthcare workers had been awarded \$39 million (5.7 million in US\$) in arrears after months of protest demanding outstanding payments, job security and a health plan. The head of the health workers union (Public Services Association) stated that they needed a health plan as "if an

employee becomes sick they will have to depend on the public health sector where they don't give health sector employees any priority" [8].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 13 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. [<http://www.odpm.gov.tt/>]. Accessed 13 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 13 March, 2021.

[4] Caribbean Disaster Emergency Management Agency (CDEMA). "About Us". [<https://www.cdema.org/about-us#what-is-cdema-s-mandate>]. Accessed 13 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "The Role and Functions of the Caribbean Public Health Agency (CARPHA)". [<http://carpha.org/Who-We-Are/Role-and-Functions>]. Accessed 13 March, 2021.

[6] Caribbean Disaster Emergency Management Agency (CDEMA). [<https://www.cdema.org/>]. Accessed 13 March, 2021.

[7] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 13 March, 2021.

[8] Trinidad Express. 17 June, 2020. Gyasi Gonzales. "Protesting health care workers to get \$39 million in arrears". [https://trinidadexpress.com/newsextra/protesting-health-care-workers-to-get-39-million-in-arrears/article_23ad9524-b0b5-11ea-8c68-7f0161588279.html]. Accessed 13 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 no publicly available evidence that Trinidad and Tobago has a system in place for public health officials and healthcare workers to communicate during a public health emergency. One of the five key principles to achieve the objectives of the country's National Response Framework is to ensure ongoing communication among leaders at all levels, although this does not specifically mention communication with public health officials and healthcare workers [1]. In addition, the Crisis Communication and Response Guidelines from 2011 only address external communications, with the public and the media [2]. Furthermore, the 2017 Consultative Document on the National Emergency Communications Plan also does not specifically call out health communications [3]. Moreover, the Ministry of Health does not have any publicly available evidence on its website regarding a system for workers to communicate during a public health emergency [4].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework". [<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 13 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. April 2011. "Crisis Communication Guidelines and Response Plan".

[<http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAFT.pdf>]
. Accessed 13 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. June 2017. "Consultative Document on the National Emergency Communications Plan".

[http://www.odpm.gov.tt/sites/default/files/National%20Emergency%20Communications%20Plan%20Consultative%20Edition%2009_05_17.pdf]. Accessed 13 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 13 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 no publicly available evidence Trinidad and Tobago has a system in place for public health officials and healthcare workers to communicate during a public health emergency hence there is no evidence of one which encompasses the public and private sector. One of the five key principles to achieve the objectives of the country's National Response Framework is to ensure ongoing communication among leaders at all levels, although this does not specifically mention communication with public health officials and healthcare workers [1]. In addition, the Crisis Communication and Response Guidelines from 2011 only address external communications, with the public and the media [2]. Furthermore, the 2017 Consultative Document on the National Emergency Communications Plan also does not specifically mention health communications [3]. Moreover, the Ministry of Health does not have any publicly available evidence on its website regarding a system for workers to communicate during a public health emergency nor one that encompasses those from the private sector [4].

[1] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. "National Response Framework".

[<http://67.23.224.218/sites/default/files/Review%20of%20National%20Response%20Framework%202010.pdf>]. Accessed 13 March, 2021.

[2] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. April 2011. "Crisis Communication Guidelines and Response Plan".

[<http://odpm.gov.tt/sites/default/files/Crisis%20Communication%20Guidelines%20and%20Response%20Plan%20DRAFT.pdf>]
. Accessed 13 March, 2021.

[3] Office of Disaster Preparedness and Management, a Division of the Ministry of National Security of Trinidad and Tobago. June 2017. "Consultative Document on the National Emergency Communications Plan".

[http://www.odpm.gov.tt/sites/default/files/National%20Emergency%20Communications%20Plan%20Consultative%20Edition%2009_05_17.pdf]. Accessed 13 March, 2021.

[4] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 13 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: 1

There is publicly available evidence that Trinidad and Tobago's public health system monitors and tracks the number of health care associated infections that take place in healthcare facilities. The Ministry of Health's 2011 Manual of Infection Prevention and Control Policies and Guidelines provides a detailed section on health care associated infections (HCAI) surveillance methodology, with information coming from intensive care units, as well as a list of infections subject to surveillance. [1] According to the manual, the country's Hospital Infection Prevention and Control Committee is responsible for monthly tracking and trending reports on HCAs and other infections [1]. The Caribbean Public Health Agency (CARPHA) provides a FAQ one-pager from 2015 about HCAs, which indicates that healthcare facilities should have training and surveillance to monitor HCAs [2]. Trinidad and Tobago has participated in such trainings and workshops such as one in 2018 on infection prevention and control which was hosted by Saint Lucia and included several CARPHA members [3]. Furthermore, Trinidad and Tobago has conducted its own studies on HCAs such as the one published in June of 2018 by the University of the West Indies (UWI) at three tertiary hospitals in Trinidad and Tobago which reported that the "incidence of nosocomial infections was 5.8% and the nosocomial infection rate was 3.6 per 1000" and that the most frequent type of nosocomial infection was Skin and Soft Tissue Infections [4].

[1] Ministry of Health of Trinidad and Tobago. "Manual of Infection Prevention and Control Policies and Guidelines".

[<http://www.gics.org.za/wp-content/uploads/2016/04/ipc.pdf>]. Accessed 13 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "Healthcare-Associated Infections".

[<http://carpha.org/Portals/0/articles/documents/HCAIsFactsheetOct2015.pdf>]. Accessed 13 March, 2021.

[3] Pan American Health Organization. "Sub-Regional Meeting on Infection Prevention and Control (IPC) and Health-Care Associated Infection Surveillance in Castries, St. Lucia on 15 to 17 October 2018".

[https://www.paho.org/hq/index.php?option=com_content&view=article&id=14756:sub-regional-meeting-on-infection-prevention-and-control-ipc-and-health-care-associated-infection-surveillance-in-castries-st-lucia-on-15-to-17-october-2018&Itemid=0&lang=en]. Accessed 13 March, 2021.

[4] Biomedical Science Journal. 23 June, 2018. C Elliott* and A Justiz-Vaillant. "Nosocomial Infections at Three Tertiary Hospitals in Trinidad and Tobago". [<https://cienciaworld.com/Nosocomial-Infections-at-Three-Tertiary-Hospitals-in-Trinidad-and-Tobago.pdf>]. Accessed 13 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 insufficient evidence that Trinidad and Tobago has a national requirement for ethical review before beginning a clinical trial. There is no evidence of a singular document that summarizes national requirements for ethical review available through the Ministry of Health or the Caribbean Public Health Agency (CARPHA) [1, 2]. Policy and guidance documents at in-country regional and academic institutions point to ethical review requirements [3, 4]. For example, the University of Trinidad and Tobago's Policy on Ethics in Research indicates that "research involving Human Subjects must be carried out in accordance with the highest standards of conduct and in accordance with the Rules and Guidelines prescribed by research funding bodies, the Law of the territories where the research is to be conducted and the University Policies on clinical and non-clinical research involving Human Subjects" [3]. CARPHA's Research Ethics Committee (REC) provides ethical oversight for research involving human participants conducted by staff or funded by CARPHA [5]. REC services are extended to CARPHA Member States upon request [5]. In addition, CARPHA's Caribbean Network of Research Ethics Committees (CANREC) is a network of Research Ethics Committees (RECs/IRBs) across the CARPHA member states [6].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 14 March, 2021.

[3] University of Trinidad and Tobago. "Policy on Ethics in Research".

[https://utt.edu.tt/files/cms/policy_ethics_research.pdf]. Accessed 14 March, 2021.

[4] The North West Regional Health Authority of Trinidad and Tobago. "Guidelines for Conducting Ethical Research".

[<http://www.nwrha.co.tt/guidelines-for-conducting-ethical-research/>]. Accessed 14 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Research Training and Policy Development - Research Ethics".

[<http://carpha.org:8086/What-We-Do/Research-Training-and-Policy-Development/Training>]. Accessed 14 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Caribbean Network of Research Ethics Committees (CANREC) - About CANREC".

[<https://carpha.org/What-We-Do/Networks/CANREC/Caribbean-Network-of-Research-Ethics-Committees#:~:text=CANREC%20is%20the%20Caribbean%20Network,across%20the%20CARPHA%20member%20states.&text=Good%20health%20is%20required%20for%20productivity%20and%20development%20in%20member%20states>]. Accessed 14 March, 2021.

Accessed 14 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 that Trinidad and Tobago has an expedited process for approving clinical trials for unregistered medical countermeasures (MCMs) to treat ongoing pandemics. There is no evidence of a singular document that summarizes national requirements for ethical review available through the Ministry of Health or the Caribbean Public Health Agency (CARPHA), nor indication of an expedited process for MCMs [1, 2]. Policy and guidance documents at in-country regional and academic institutions point to ethical review requirements, but these make no mention of MCMs [3, 4]. In addition, CARPHA's Research Ethics Committee (REC) provides ethical oversight for research involving human participants conducted by staff or funded by CARPHA, but there is no evidence that this includes MCMs [5].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). [<http://carpha.org/>]. Accessed 14 March, 2021.

[3] University of Trinidad and Tobago. "Policy on Ethics in Research". [https://utt.edu.tt/files/cms/policy_ethics_research.pdf]. Accessed 14 March, 2021.

[4] The North West Regional Health Authority of Trinidad and Tobago. "Guidelines for Conducting Ethical Research". [<http://www.nwrha.co.tt/guidelines-for-conducting-ethical-research/>]. Accessed 14 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "Research Training and Policy Development - Research Ethics". [<http://carpha.org:8086/What-We-Do/Research-Training-and-Policy-Development/Training>]. Accessed 14 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 evidence that Trinidad and Tobago has a government agency responsible for approving new medical countermeasures in humans. The Ministry of Health's Chemistry, Food and Drug Division is responsible for the inspection and approval of all importation, manufacturing, and sale of food and drugs in Trinidad and Tobago [1, 2]. In addition, the Caribbean Regulatory System of the Caribbean Public Health Agency (CARPHA) oversees safety, quality, and efficacy of medicines and vaccines in the Caribbean [3]. CARPHA's Medicines Quality Control and Surveillance Department monitors medicinal quality and is the sole ISO/IEC 17025 accredited pharmaceutical quality control laboratory in the Caribbean [4].

[1] Ministry of Health of Trinidad and Tobago. "Food and Drug Inspection". [<https://health.gov.tt/services/chemistry-food-and-drugs-division>]. Accessed 14 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[3] Caribbean Public Health Agency (CARPHA) "Caribbean Regulatory System". [<https://www.carpha.org/What-We-Do/CRS/Caribbean-Regulatory-System>]. Accessed 14 March, 2021.

[4] Caribbean Public Health Agency (CARPHA) "About Medicine Quality Control and Surveillance". [<https://carpha.org/What-We-Do/MQCS/Quality-Control-and-Surveillance-Department>]. Accessed 14 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 that Trinidad and Tobago has an expedited process for approving medical countermeasures (MCMs) for human use during public health emergencies. The Ministry of Health's Chemistry, Food and Drug Division is responsible for inspection and approval of all importation, manufacturing, and sale of food and drugs in Trinidad and Tobago [1]. However, there is no evidence, including from the Division or the Ministry of Health, of an expedited approval process during public health emergencies for MCMs or any other substance [1, 2]. In addition, the Caribbean Regulatory System of the Caribbean Public Health Agency (CARPHA) oversees safety, quality, and efficacy of medicines and vaccines in the Caribbean, though there is no indication of an expedited process for MCMs or any other substance [3].

[1] Ministry of Health of Trinidad and Tobago. "Food and Drug Inspection". [<https://health.gov.tt/services/chemistry-food-and-drugs-division>]. Accessed 14 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[3] Caribbean Public Health Agency (CARPHA) "Caribbean Regulatory System". [<https://www.carpha.org/What-We-Do/CRS/Caribbean-Regulatory-System>]. Accessed 14 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: 0

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that pandemics are integrated into Trinidad and Tobago's national risk reduction strategy, and there are standalone national disaster risk reduction strategy for pandemics. The 2014 Disaster Risk Reduction Country Document, from the Ministry of National Security's Office of Disaster Preparedness and Management (ODPM), integrates information on pandemics, such as a section on H1N1 Influenza A Virus, which the World Health Organization (WHO) declared a pandemic in 2009 [1]. This disaster risk reduction document points to standalone disaster risk reduction strategies for pandemics, such as, for example, the Ministry of Health's 2006 Pandemic Influenza Preparedness and Response Plan — which covers preparedness, response and recovery for Influenza A [2].

[1] Ministry of National Security of Trinidad and Tobago - Office of Disaster Preparedness and Management. 2014. "The Disaster Risk Reduction Country Document, Trinidad and Tobago". [<http://dipecholac.net/docs/files/875-disaster-risk-reduction-country-document-trinidad-and-tobago-2014.pdf>]. Accessed 14 March, 2021.

[2] Ministry of Health of Trinidad and Tobago. 2006. "Pandemic Influenza Preparedness and Response Plan". [<https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nipp%20t%26t.pdf?ua=1>]. Accessed 14 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: 2

There is evidence that Trinidad and Tobago is part of a regional group with regards to public health emergencies, and there is no evidence of gaps in implementation. Article 4 of the Agreement Establishing the Caribbean Public Health Agency (CARPHA)—signed by the Government of Trinidad and Tobago—states that supporting the Caribbean Community in "preparing for and responding to public health emergencies" is one of CARPHA's objectives [1]. Health emergency preparedness and response is therefore one of the functions of the CARPHA [1, 2]. In addition, the Caribbean Disaster Emergency Management Agency (CDEMA) is a regional agency for disaster management in the Caribbean Community (CARICOM), of which Trinidad and Tobago is a Member State [3]. CDEMA's mandate includes "coordinating the establishment, enhancement and maintenance of adequate emergency disaster response capabilities among the Participating States" [3]. There is limited information available on CDEMA's role in public health emergencies. However, the Caribbean Community (CARICOM) indicates that health is one of CDEMA's areas of work, and a CDEMA News article on its website describes the establishment of a Health Disaster Risk Reduction (CHDRR) Committee by the Pan American Health Organization (PAHO) [4, 5].

[1] Caribbean Public Health Agency (CARPHA). "Agreement Establishing the Caribbean Public Health Agency (CARPHA)". [https://carpha.org/Portals/0/Documents/CARPHA_IGA.pdf]. Accessed 14 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). "The Role and Functions of the Caribbean Public Health Agency (CARPHA)". [<http://carpha.org/Who-We-Are/Role-and-Functions>]. Accessed 14 March, 2021.

[3] Caribbean Disaster Emergency Management Agency (CDEMA). "What is CDEMA's Mandate?". [<https://www.cdema.org/about-us#what-is-cdema-s-mandate>]. Accessed 14 March, 2021.

[4] Caribbean Community (CARICOM). "Caribbean Disaster Emergency Management Agency (CDEMA)". [<https://caricom.org/institutions/caribbean-disaster-emergency-management-agency-cdema/>]. Accessed 14 March, 2021.

[5] Caribbean Disaster Emergency Management Agency (CDEMA). "CDEMA News: Caribbean Disaster Emergency Management Agency". [https://www.cdema.org/index.php?option=com_content&view=article&id=951&Itemid=447]. Accessed 14 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: 2

There is evidence that Trinidad and Tobago is part of a regional group, with regards to animal health emergencies, and there is no evidence of gaps in implementation. The Caribbean Animal Health Network (CaribVET), of which Trinidad and Tobago is a member, is responsible for prevention and emergency preparedness plans for priority diseases [1]. Rabies, Salmonellosis, and Leptospirosis are identified by CaribVET as priority diseases [2]. In addition, the 2010 charter for CaribVET states that one of the roles of the Veterinary epidemiologist / para-epidemiologist (VEP) project is to support and operate a rapid national and regional emergency response task force [3]. Representatives from CaribVET have also been involved in the development of the Caribbean's Global Health Security Agenda (GHSA) roadmap [4, 5].

[1] Caribbean Animal Health Network (CaribVET). "About the Network". [<https://www.caribvet.net/about-the-network>]. Accessed 14 March, 2021.

[2] Caribbean Animal Health Network (CaribVET). "Veterinary Public Health". [<https://www.caribvet.net/thematics/veterinary-public-health>]. Accessed 14 March, 2021.

[3] Caribbean Animal Health Network (CaribVET). "Caribbean Animal Health Network Charter". [https://www.caribvet.net/content/download/4499/33474/version/1/file/CaribVET_CHARTER_FINAL_EN2011%28detailed%29.pdf]. Accessed 14 March, 2021.

[4] Caribbean Animal Health Network (CaribVET). "The Caribbean Animal Health Network (CaribVET) establishes high-level ties with Caribbean Disaster Emergency Management Agency (CDEMA)". [<https://www.caribvet.net/news/the-caribbean-animal-health-network-caribvet-establishes-high-level-ties-with-caribbean-disaster-emergency-management-agency-cdema>]. Accessed 14 March, 2021.

[5] Caribbean Community (CARICOM) "Working towards Regional Health Security in the Caribbean". [<https://caricom.org/working-towards-regional-health-security-in-the-caribbean/>]. Accessed 14 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: 0

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 1

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

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

- Membership in Global Health Security Agenda (GHSA)
- Membership in the Alliance for Country Assessments for Global Health Security and IHR Implementation (JEE Alliance)
- Membership in the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP)
- Membership in the Australia Group (AG)
- Membership in the Proliferation Security Initiative (PSI)

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

Current Year Score: 0

2021

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

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

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

5.4.1a

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

Yes = 1, No = 0

Current Year Score: 0

2021

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

5.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

2021

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

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

5.4.2a

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

Yes = 1, No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

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

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that Trinidad and Tobago has allocated national funds to improve capacity to address epidemic threats within the past three years. There is no such evidence on the websites of the Ministry of Health, the Ministry of Agriculture, Land & Fisheries, the Ministry of Finance nor on the government's main portal [1, 2, 3, 4]. Furthermore, all funding to improve Trinidad and Tobago's capacity to address the Covid-19 pandemic has come from international financing or loans from, for example, the World Bank [5].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[2] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 14 March, 2021.

[3] Ministry of Finance of Trinidad and Tobago. [<https://www.finance.gov.tt/>]. Accessed 14 March, 2021.

[4] Office of the Prime Minister of the Republic of Trinidad and Tobago. [<https://www.opm.gov.tt/>].

[5] World Bank. 7 July, 2020. "World Bank Approves US\$20 Million to Support COVID-19 Response in Trinidad and Tobago". [<https://www.worldbank.org/en/news/press-release/2020/07/07/world-bank-approves-us20-million-to-support-covid-19-response-in-trinidad-and-tobago>]. Accessed 14 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

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: 1

There is a publicly identified special emergency public financing mechanism and funds that Trinidad and Tobago can access in the face of a public health emergency. The Stop Epidemics There and Here (SETH) Fund provides financial support and assistance to the Caribbean Public Health Agency (CARPHA) and its Member States, which includes Trinidad and Tobago, in managing outbreaks and emergencies with health and humanitarian consequences [1]. The SETH Fund was started in 2014 at a Caribbean Community (CARICOM) special session to discuss two public health challenges facing the Community: Ebola Virus Disease (EVD); and the Chikungunya outbreak [1]. Activities of the SETH Fund include immediate response interventions against vaccine-preventable diseases and deployment of rapid response personnel during outbreaks, public health emergencies, severe natural disasters, chemical and other events with health consequences [1]. Trinidad and Tobago is not eligible for World Bank pandemic financing [2].

[1] Caribbean Public Health Agency (CARPHA) Foundation. "Stop Epidemics There and Here (SETH) Fund".

[<http://carphafoundation.carpha.org/SETH-Fund>]. Accessed 14 March, 2021.

[2] International Development Association (IDA) - World Bank Group. "Borrowing Countries".

[<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 14 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 available evidence that, in the past three years, senior leaders in Trinidad and Tobago have made a public commitment to support other countries to improve capacity to address epidemic threats by providing financing or support and there is insufficient evidence that they have made a public commitment to Improve the country's domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity. There is no evidence of such a public commitment on the websites of the Ministry of Health, the government's main portal nor on the one for the Ministry of Ministry of Foreign and CARICOM Affairs [1, 2, 3]. The Caribbean Public Health Agency (CARPHA) was established in 2013 as the public health agency for the Caribbean Community (CARICOM)—headquartered in Port-of-Spain, Trinidad—and coordinates responses to public health crisis in the Caribbean by providing resources for disease prevention and control strategies in outbreak and epidemic situations [4, 5]. Caribbean Community Member States contribute quotas to make up CARPHA's funding, in addition to funding obtained from partners supporting health and development work in the Caribbean, though there is no publicly available detail on financial or technical commitments Trinidad and Tobago has made towards CARPHA [6]. Beyond the regional commitment through CARPHA, there is no evidence that senior leaders in Trinidad and Tobago have made a public commitment to support other countries to improve capacity to address epidemic threats from the Global Health Security Funding Tracking Dashboard [7]. Trinidad and Tobago is not among the countries that contribute to the World Health Organization (WHO)'s Contingency Fund for Emergencies (CFE), and the WHO makes no other mention of this type of public commitment by Trinidad and Tobago [8]. Furthermore, although Trinidad and Tobago received a \$50 million loan from the Development Bank of Latin American and a \$20 million credit from the World Bank for its response to the Covid-19 pandemic, these announcements or commitments were made by these organizations and not by the country's senior leaders [9, 10].

[1] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[2] Office of the Prime Minister of the Republic of Trinidad and Tobago. [<https://www.opm.gov.tt/>]. Accessed 14 March.

[3] Ministry of Foreign and CARICOM Affairs of Trinidad and Tobago. [<https://foreign.gov.tt/contact-us/>]. Accessed 14 March, 2021.

[4] Caribbean Public Health Agency (CARPHA) Foundation. "About CARPHA". [<http://carphafoundation.carpha.org/Who-We-Are/About-CARPHA>]. Accessed 14 March, 2021.

[5] Caribbean Public Health Agency (CARPHA). "The Role and Functions of the Caribbean Public Health Agency (CARPHA)". [<http://carpha.org/Who-We-Are/Role-and-Functions>]. Accessed 14 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Frequently Asked Questions - How is CARPHA funded?". [<http://carpha.org/who-we-are/faqs>]. Accessed 14 March, 2021.

[7] Global Health Security Funding Tracking Dashboard. [<https://tracking.ghscosting.org/details/1067/funder>]. Accessed 14 March, 2021.

[8] World Health Organization (WHO). "Contingency Fund for Emergencies (CFE)". [<http://www.who.int/emergencies/funding/contingency-fund/en/>]. Accessed 14 March, 2021.

[9] CAF -Development Bank of Latin America. 15 April, 2020. "CAF lends USD 50 million to fight Covid-19 in Trinidad and Tobago". [<https://www.caf.com/en/currently/news/2020/04/caf-lends-usd-50-million-to-fight-covid-19-in-trinidad-and-tobago/>]. Accessed 14 March, 2021.

[10] World Bank. 7 July, 2020. "World Bank Approves US\$20 Million to Support COVID-19 Response in Trinidad and Tobago". [<https://www.worldbank.org/en/news/press-release/2020/07/07/world-bank-approves-us20-million-to-support-covid-19-response-in-trinidad-and-tobago>]. Accessed 14 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 evidence that Trinidad and Tobago has invested finances from donors to improve its own domestic capacity to address epidemic threats in the past three years, however there is no evidence that the country has invested resources to support other countries to improve capacity to address epidemic threats in the past three years. According to the Georgetown Global Health Security Tracking database, Trinidad and Tobago received \$4.77 million in 2018, \$4.91 million in 2019 and \$6.93 million in 2020 in donor support to address epidemic threats [1]. Among the main donors were Inter-American Development Bank, the International Bank for Reconstruction and Development and the US government. The funds were mainly used for emergency response and workforce development [1]. Furthermore, in July of 2020, the country received a \$20 million credit from the World Bank to "respond to the Covid-19 pandemic and strengthen national systems for public health preparedness" [2]. However, there is no evidence on the websites of the Ministry of Health, the government's main portal nor on the one for the Ministry of Foreign and CARICOM Affairs that Trinidad and Tobago invested finances or provided technical support to help other countries combat epidemic threats [3, 4, 5]. In addition, Caribbean Community Member States contribute quotas to make up funding for the Caribbean Public Health Agency (CARPHA), which coordinates responses to public health crisis in the Caribbean, though there is no publicly available detail on financial or technical commitments Trinidad and Tobago has made towards CARPHA [6, 7].

[1] Georgetown Global Health Security Tracking database. "Trinidad and Tobago".

[<https://tracking.ghscosting.org/details/1067/recipient>]. Accessed 14 March, 2021.

[2] World Bank. 7 July, 2020. "World Bank Approves US\$20 Million to Support COVID-19 Response in Trinidad and Tobago".

[<https://www.worldbank.org/en/news/press-release/2020/07/07/world-bank-approves-us20-million-to-support-covid-19-response-in-trinidad-and-tobago>]. Accessed 14 March, 2021.

[3] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[4] Office of the Prime Minister of the Republic of Trinidad and Tobago. [<https://www.opm.gov.tt/>]. Accessed 14 March.

[5] Ministry of Foreign and CARICOM Affairs of Trinidad and Tobago. [<https://foreign.gov.tt/contact-us/>]. Accessed 14 March, 2021.

[6] Caribbean Public Health Agency (CARPHA). "Frequently Asked Questions - How is CARPHA funded?".

[<http://carpha.org/who-we-are/faqs>]. Accessed 14 March, 2021.

[7] Caribbean Public Health Agency (CARPHA) Foundation. "About CARPHA". [<http://carphafoundation.carpha.org/Who-We-Are/About-CARPHA>]. Accessed 14 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: 0

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 insufficient evidence that Trinidad and Tobago has 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. Trinidad and Tobago has committed to sharing some infectious disease-related data with other countries in the region through its membership of the Caribbean Public Health Agency (CARPHA) [1, 2]. A presentation at the 2014 Meeting of Caribbean National Epidemiologists and Laboratory Directors proposed a CARPHA public health information sharing agreement between CARPHA and CARPHA Member States, however there is no evidence that such an information sharing agreement was created [3]. Furthermore, during the Covid-19 Pandemic, CARPHA, on its dashboard page, released the number of Covid-19 samples received, tested and reported as well as the number of members participating in this. However, it does not state the individual names of the countries participating nor is there evidence that this is part of a publicly available plan for sharing genetic data [4]. In addition, there is no evidence of such a sharing plan or policy on the Ministry of Health's website nor on the one for the Ministry of Agriculture, Land and Fisheries [5, 6].

[1] Caribbean Public Health Agency (CARPHA). Official website. [<http://carpha.org/>]. Accessed 14 March, 2021.

[2] Caribbean Public Health Agency (CARPHA). June 2011. "Agreement establishing the Caribbean Public Health Agency (CARPHA)." [https://carpha.org/Portals/0/Documents/CARPHA_IGA.pdf]. Accessed 14 March, 2021.

[3] Caribbean Public Health Agency (CARPHA). 12th Meeting of Caribbean National Epidemiologists and Laboratory Directors, 2014. "CARPHA Data and Information Sharing Agreement: A Proposal" [http://carpha.org:8086/Portals/0/docs/MEETINGS/Epid_LabDir/Crooks_CARPHA_Data_and_Information_Sharing_Agreement.pdf]. Accessed 14 March, 2021.

[4] CARPHA. Coronavirus. Caribbean region dashboard. 28th February to 6th March, 2021. [<https://www.carpha.org/Portals/0/Images/LabDashboard.jpg>]. Accessed 14 March, 2021.

[5] Ministry of Health of Trinidad and Tobago. [<http://www.health.gov.tt/>]. Accessed 14 March, 2021.

[6] Ministry of Agriculture, Land & Fisheries of Trinidad and Tobago. [<https://agriculture.gov.tt/>]. Accessed 14 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 Trinidad and Tobago has not shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years year [1]. Furthermore, there is no evidence on the website and press release pages of the World Health Organization (WHO) nor are there any media reports by the WHO of any non-compliance by Trinidad and Tobago in the past two years [2, 3].

[1] World Health Organization (WHO). "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 13 March, 2021.

[2] World Health Organization (WHO). [<http://www.who.int>]. Accessed 13 March, 2021.

[3] World Health Organization (WHO) newsroom. [<https://www.who.int/news-room>]. Accessed 13 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 that Trinidad and Tobago has not shared pandemic pathogen samples, including for Covid-19, during an outbreak in the past two years [1]. Furthermore, there is no evidence on the website and press release pages of the World Health Organization (WHO) nor are there any media reports by the WHO of any non-compliance by Trinidad and Tobago in the past two years [2, 3].

[1] World Health Organization (WHO). "Virus Sharing." [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 13 March, 2021.

[2] World Health Organization (WHO). [<http://www.who.int>]. Accessed 13 March, 2021.

[3] World Health Organization (WHO) newsroom. [<https://www.who.int/news-room>]. Accessed 13, 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: 3

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 40

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 2

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 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: 1

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 98.7

2010

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: 0.68

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: 0.3

2008-2018

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 1

According to a study done by the Inter-American Development Bank, Trinidad and Tobago's share of employment in the informal sector was at 26-33 percent in 2017 [1].

[1] Inter-American Development Bank. August 2017. Amos Peters. "Estimating the Size of the Informal Economy in Caribbean States". [<https://publications.iadb.org/publications/english/document/Estimating-the-Size-of-the-Informal-Economy-in-Caribbean-States.pdf>]. Accessed 14 March, 2021.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 1

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 2

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.4

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 2

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: 53.19

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: -0.82

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

What is the risk that the economy will suffer a major disruption owing to a natural disaster?

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

Current Year Score: 2

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 73.38

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: 439

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 11.12

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 14.78

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 18.6

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: 98.18

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 93.4

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: 1034.84

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