

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

CATEGORY 1: PREVENTING THE EMERGENCE OR RELEASE OF PATHOGENS WITH POTENTIAL FOR INTERNATIONAL CONCERN	4
1.1 Antimicrobial resistance (AMR)	4
1.2 Zoonotic disease	7
1.3 Biosecurity	13
1.4 Biosafety	20
1.5 Dual-use research and culture of responsible science	23
1.6 Immunization	26
CATEGORY 2: EARLY DETECTION AND REPORTING FOR EPIDEMICS OF POTENTIAL INTERNATIONAL CONCERN	27
2.1 Laboratory systems strength and quality	27
2.2 Laboratory supply chains	29
2.3 Real-time surveillance and reporting	31
2.4 Surveillance data accessibility and transparency	33
2.5 Case-based investigation	39
2.6 Epidemiology workforce	42
CATEGORY 3: RAPID RESPONSE TO AND MITIGATION OF THE SPREAD OF AN EPIDEMIC	44
3.1 Emergency preparedness and response planning	44
3.2 Exercising response plans	47
3.3 Emergency response operation	49
3.4 Linking public health and security authorities	51
3.5 Risk communications	52
3.6 Access to communications infrastructure	56

3.7 Trade and travel restrictions	57
-----------------------------------	----

CATEGORY 4: SUFFICIENT AND ROBUST HEALTH SECTOR TO TREAT THE SICK AND PROTECT HEALTH WORKERS 59

4.1 Health capacity in clinics, hospitals, and community care centers	59
---	----

4.2 Supply chain for health system and healthcare workers	61
---	----

4.3 Medical countermeasures and personnel deployment	66
--	----

4.4 Healthcare access	68
-----------------------	----

4.5 Communications with healthcare workers during a public health emergency	69
---	----

4.6 Infection control practices and availability of equipment	71
---	----

4.7 Capacity to test and approve new medical countermeasures	72
--	----

CATEGORY 5: COMMITMENTS TO IMPROVING NATIONAL CAPACITY, FINANCING PLANS TO ADDRESS GAPS, AND ADHERING TO GLOBAL NORMS 74

5.1 International Health Regulations (IHR) reporting compliance and disaster risk reduction	74
---	----

5.2 Cross-border agreements on public health and animal health emergency response	75
---	----

5.3 International commitments	76
-------------------------------	----

5.4 Joint External Evaluation (JEE) and Performance of Veterinary Services Pathway (PVS)	78
--	----

5.5 Financing	79
---------------	----

5.6 Commitment to sharing of genetic and biological data and specimens	83
--	----

CATEGORY 6: OVERALL RISK ENVIRONMENT AND VULNERABILITY TO BIOLOGICAL THREATS 85

6.1 Political and security risk	85
---------------------------------	----

6.2 Socio-economic resilience	88
-------------------------------	----

6.3 Infrastructure adequacy	91
-----------------------------	----

6.4 Environmental risks	92
-------------------------	----

6.5 Public health vulnerabilities	92
-----------------------------------	----

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

Estonia has an antimicrobial resistance (AMR) plan in place for the sphere of veterinary medicine that covers surveillance, detection, and reporting, but there is no evidence of an overarching national AMR plan. No evidence of this could be found on the websites for Estonia's Health Board (the country's ministry of health), the Ministry of Rural Affairs (agricultural ministry), its National Institute for Health Development (a government-funded health research body), or in the WHO Library of National Action Plans. [1, 2, 3, 4]

A comprehensive national AMR action plan does not currently exist but one is under development, according to a self-assessment conducted in 2018. [5] In 2019, the Estonian Ministry of Rural Affairs issued a five-year action plan to target AMR in the field of veterinary medicine. [6] The action plan's primary objectives are to strengthen surveillance of AMR, promote scientific studies on the phenomenon, and to raise awareness about the proper use of antibiotics in agriculture and with household pets. [6] A March 2019 country visit report to Estonia by the European Centre for Disease Prevention and Control stated that while there was already a veterinary AMR action plan in place, "the corresponding human health and environmental plans are due this year [2019]". [7] No evidence was found that this plan has been finalized.

[1] World Health Organization (WHO). "Library of National Action Plans". Geneva: World Health Organization. [http://www.who.int/antimicrobial-resistance/national-action-plans/library/en]. Accessed 30 August 2020.

[2] Estonian Health Board. "News". [https://www.terviseamet.ee/et/uudised]. Accessed 30 August 2020.

[3] Estonian Ministry of Rural Affairs. "Home". [http://www.agri.ee]. Accessed 30 August 2020.

[4] National Institute for Health Development. "Main page". [http://www.tai.ee]. Accessed 30 August 2020.

[5] World Health Organization (WHO). 2018. "Global Database for Antimicrobial Resistance Country Self Assessment (Estonia)". Geneva: World Health Organization. [http://amrcountryprogress.org]. Accessed 30 August 2020.

[6] Estonian Ministry of Rural Affairs. 2019. "Action plan for the reduction of antibiotic resistance in veterinary medicine for the period 2019-2023" ("Mikroobide antibiootikumiresistentsuse vÄrshendamise tegevuskava veterinaarmeditsiini valdkonnas aastateks 2017-2021"). [https://www.agri.ee/sites/default/files/content/arengukavad/tegevuskava-amr-2019-2023.pdf]. Accessed 30 August 2020.

[7] European Centre for Disease Prevention and Control. 16 September 2019. "Country visit to Estonia to discuss policies relating to antimicrobial resistance". [https://www.ecdc.europa.eu/en/publications-data/ecdc-and-european-commission-country-visit-estonia-discuss-policies-relating]. Accessed 30 August 2020.

1.1.1b

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

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

Current Year Score: 2

The Estonian Health Board and the National Institute for Health Development coordinate the surveillance of all 7+1 priority AMR pathogens, and there are two participating labs that serve as sentinel sites. [1, 2, 3] The Health Board conducts surveillance for and produces periodic reports on AMR in *E. coli*, *K. pneumoniae*, *S. aureus*, *S. pneumoniae*, *Salmonella* spp., and *N. gonorrhoeae* in Estonia while the National Institute for Health Development conducts surveillance of tuberculosis. [4, 5] Additionally, sentinel surveillance is used to monitor the influenza virus in Estonia. [2]

[1] Estonian Health Board. "News". [<https://www.terviseamet.ee/et/uudised>]. Accessed 30 August 2020.

[2] Estonian Health Board. 2018. "Acute viral infections of the upper respiratory tract" ("Äälemiste hingamisteede Äägedatesse viirusnakkustesse haigestumine"). [<https://www.terviseamet.ee/et/nakkushaigused-menuu/tervishoiutootajale/nakkushaigustesse-haigestumine/grippi-ja-viirusnakkused>]. Accessed 30 August 2020.

[3] Goossens, Herman (2017). "ECRAID: European Clinical Research Alliance on Infectious Diseases".

[https://www.jpamr.eu/wp-content/uploads/2017/10/Goossens-H_ECRAID-JPI-AMR_Stockholm_11102017.pdf]. Accessed 30 August 2020.

[4] Estonian Health Board. 2018. "Surveillance of Antimicrobial Resistance in Estonia, 2012-2017: Overview" ("Antimikroobse resistensuse seire Eestis, 2012-2017: Äälevaade").

[http://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/valmisolek/AMR_Eestis_2012-2017.pdf]. Accessed 30 August 2020.

[5] National Institute for Health Development. 2018. "Tuberculosis Prevention" ("TuberkuloositÄämrje").

[<http://www.tai.ee/et/tegevused/tervise-edendamine/tuberkuloositorje>]. Accessed 30 August 2020.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

No government entity in Estonia appears to be directly involved in conducting surveillance for AMR organisms or antimicrobial residues in the environment. No evidence of this could be found on the websites of the Estonian Ministry of Health, Ministry of Rural Affairs, or Environmental Ministry. [1, 2, 3] Moreover, no evidence of a currently active overarching AMR action plan could be found on the websites for Estonia's Health Board, the Ministry of Rural Affairs, its National Institute for Health Development, or in the WHO Library of National Action Plans [2, 3, 4, 5]. However, the Estonian Ministry of the Environment has contracted the Estonian Environmental Research Centre (EKUK), a private company, to serve as a reference laboratory for the analysis of "water, groundwater, sea and waste water and sewage sludge" [6]. EKUK can analyse water and sewage sludge for the presence of *E. coli*, *Salmonella* spp., and *S. aureus*, although there is no indication that the organization also tests specifically for antimicrobial resistance. [7]

[1] Estonian Environmental Ministry. "Home". [<https://www.envir.ee/en>]. Accessed 30 August 2020.

[2] Estonian Health Board. "News". [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 30 August 2020.

[3] Estonian Ministry of Rural Affairs. "Home". [<http://www.agri.ee/en>] Accessed 30 August 2020.

[4] National Institute for Health Development. "Main page". [<http://www.tai.ee>] Accessed 30 August 2020.

[5] World Health Organization (WHO). "Library of National Action Plans". Geneva: World Health Organization.

[<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en>]. Accessed 30 August 2020.

[6] Estonian Environmental Research Center. "About us". [<http://www.klab.ee/en/about>]. Accessed 30 August 2020.

[7] Estonian Environmental Research Center. 2020. "Water analysis price list as of 2.2.2020" ("Veeanalüüside hinnad alates 02.02.2020"). [http://www.klab.ee/wp-content/uploads/2020/01/veeanalüüsid_hinnad.pdf]. Accessed 30 August 2020.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

Prescriptions are required for antibiotic use for humans, and there is little to no evidence of gaps in enforcement. Section 85, point 6 of the Medicinal Products Act, passed in 2004 and last updated in May 2020, states that "[n]o samples of medicinal products containing narcotic drugs and psychotropic substances, and antibiotics may be supplied to any person"; point 7 of the same section states that "[s]amples of medicinal products must only be supplied to a person qualified to prescribe them".

[1] A 2017 study by the Netherlands Institute for Health Services Research (NIVEL) found that 3% of people who had used antibiotics within the previous 18 months claimed to have received them without a prescription; this percentage was the lowest of the 7 European Union member countries analyzed for the study. [2]

[1] Estonian Parliament. 2020. "Medicinal Products Act" ("Ravimiseadus").

[<https://www.riigiteataja.ee/en/eli/ee/516052016002/consolide/current>]. Accessed 30 August 2020.

[2] Netherlands Institute for Health Services Research (NIVEL). 2017. "The use of antibiotics without a prescription in seven EU Member States".

[https://www.nivel.nl/sites/default/files/chapter_4_the_use_of_antibiotics_without_a_prescription_amr_arna_report_2017_0717_en.pdf]. Accessed 30 August 2020.

1.1.2b

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

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

Current Year Score: 0

There is no public evidence of national regulations or legislation specifically pertaining to the use of antibiotics for animals. No such regulations or legislation are made publicly available by the Estonian Health Board, the Estonian Ministry of Rural Affairs, or the Estonian State Agency of Medicines. [1, 2, 3, 4]

All veterinary medicines and medicated animal feeds are subject to the regulations laid out in subsection 6.3 of the Medical Products Act, passed in 2004 and last updated in May 2020, which does not explicitly require that antibiotics for animals be available only by prescription. [5] While a scan of the Estonian Medication Registry revealed that veterinary antibiotics are primarily available only by prescription, there does not appear to be any legislation specifically requiring this. [6] The Ministry of Rural Affairs in Estonia has reported that producers of medicated feed are sometimes able to acquire feed premixes without a prescription from a veterinarian. [7] The Ministry of Rural Affairs' "Action plan for the reduction of antibiotic resistance in veterinary medicine," published in 2019, envisions the development of a stronger legislative framework for the use of antibiotics with animals and a comprehensive training programme aimed at veterinarians, animal owners, government

overseers, and other interest groups. [7]

- [1] Estonian Health Board. "News". [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 30 August 2020.
- [2] Estonian Ministry of Rural Affairs. "Home". [<http://www.agri.ee>]. Accessed 30 August 2020.
- [3] Estonian State Agency of Medicines. "Ravimiamet" ("State Agency of Medicine"). [<http://www.sam.ee>]. Accessed 30 August 2020.
- [4] Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 30 August 2020.
- [5] Estonian Parliament. 2020. "Medical Products Act" ("Ravimiseadus"). [<https://www.riigiteataja.ee/en/eli/ee/516052016002/consolide/current>]. Accessed 30 August 2020.
- [6] Estonian Medical Registry. [<https://www.ravimiregister.ee>]. Accessed 30 August 2020.
- [7] Estonian Ministry of Rural Affairs. 2019. "Action plan for the reduction of antibiotic resistance in veterinary medicine for the period 2019-2023" ("Mikroobide antibiootikumiresistentsuse v r hendamise tegevuskava veterinaarmeditsiini valdkonnas aastateks 2019-2023"). [<https://www.agri.ee/sites/default/files/content/arengukavad/tegevuskava-amr-2019-2023.pdf>]. Accessed 30 August 2020.

1.2 ZONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a national strategy for monitoring zoonotic diseases in Estonia.

According to the Infectious Animal Disease Control Act, the Ministry of Rural Affairs' Veterinary and Food Board (VFB) is responsible for monitoring zoonotic diseases. [1] This monitoring is carried out for the purpose of "collecting, analyzing and disseminating data on the occurrence of zoonoses, zoonotic agents and drug resistance", per section 29(2).1 of the Infectious Animal Disease Control Act, published in 1999 and last updated in 2019. [1] The VFB is required to submit a report on zoonoses to the European Commission each year by May 31, as per section  42.3 of the Act. [1]

The VFB coordinates the surveillance of food for the following zoonotic diseases: brucellosis, campylobacteriosis, echinococcosis, listeriosis, salmonella, trichinellosis, tuberculosis caused by *Mycobacterium bovis*, and *E. coli*, per the document "Requirements for the Surveillance of Zoonoses," published in 2005. [2] The VFB also tests cattle, pigs, poultry and food products derived from these animals for the presence of antibiotic-resistant *Salmonella* spp., *Campylobacter jejuni*, *Campylobacter coli*, *E. coli*, *Enterococcus faecalis*, and *Enterococcus faecium*. [3]

- [1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomataudit m rje seadus"). [<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 30 August 2020.
- [2] Estonian Ministry of Rural Affairs. 2005. "Requirements for the Surveillance of Zoonoses" ("N mudud zoonooside seire korraldamise kohta"). [<https://www.riigiteataja.ee/akt/921685>]. Accessed 30 August 2020.
- [3] Estonian Veterinary and Food Board. 2019. "2019 Report on Zoonoses" ("Zoonooside aruanne 2019"). [https://vet.agri.ee/sites/default/files/Toit/Aruanded/eesti_zoonooside_aruanne_2019.pdf]. Accessed 2 September 2020.

1.2.1b

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

Yes = 1, No = 0

Current Year Score: 1

Estonia has legislation that includes measures for risk identification and reduction for zoonotic disease spillover events.

The "Infectious Animal Disease Control Act," published in 1999 and last revised in 2019, addresses the spillover of zoonotic diseases from animals to humans. According to Article 7 of this act, livestock owners are required to take a number of biosafety measures, including, for example, restricting animals' movement outside of specifically designated areas. [1] Article 14 addresses the procedure for registering "animal exhibitions, competitions, fairs, auctions and other public events involving bringing animals together," which requires organizers of such events to notify the Veterinary and Food Board and to conduct animal health screenings beforehand. [1] The Veterinary and Food Board "may prohibit the bringing together of certain species of animals or their use in an event where the risk of the spread of an infectious animal disease has become evident following a risk analysis." [1] This act also requires the Veterinary and Food Board to draw up a report each year, describing in detail the measures being taken to reduce the spread of zoonotic diseases, including the number of animals in each region of the country being vaccinated or tested; special attention is paid in these reports to diseases occurring in animals that are consumed by humans. [2]

A 2013 risk analysis by the Veterinary and Food Board also identified a number of potential zoonotic disease spillover scenarios, including improper handling of animal waste, improperly conducted or illegal entertainment events involving animals (i.e., exhibitions, competitions, or auctions), and terrorist attacks. The document stated that measures being undertaken to reduce the risk of these threats included, for example, constant surveillance of animals, proactive vaccination of wild animals, adherence to biosafety measures in enterprises that deal with animals, and cooperation between the Veterinary and Food Board and border/customs authorities. [3]

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[2] Veterinary and Food Board. 2020. "State animal disease reduction program: 2020 action plan" ("Riiklike loomatauditÄµrje programme rakendusmeetmed" 2020. aastal"). [https://vet.agri.ee/sites/default/files/rltp_programm_2020.pdf]. Accessed 9 October 2020.

[3] Veterinary and Food Board. 2013. "Risk analysis: epizootic emergencies" ("Episootia hÄdaolukorra riskianalÄs"). [<https://www.agri.ee/sites/default/files/content/uuringud/2013/uuring-2013-riskianaluus-episootia.pdf>]. Accessed 9 October 2020.

1.2.1c

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

Yes = 1, No = 0

Current Year Score: 0

Estonia has national legislation that accounts for the surveillance of multiple zoonotic pathogens of public health concern; however, it only accounts for the control of one zoonotic pathogen.

The surveillance and control of zoonoses/zoonotic diseases are carried out by the Ministry of Rural Affairs' Veterinary and Food Board (VFB) in accordance with the Infectious Animal Disease Control Act and the Ministry of Agriculture's "Requirements for the Surveillance of Zoonoses" document, effective as of 2005; the Infectious Animal Disease Control Act, published in 1999 and updated in 2019, is the primary document concerning prevention and control of zoonoses. [1, 2] Control measures described in this document include proactive vaccination (paragraph 43), which is carried out by the VFB; however, it appears that only rabies vaccinations are regularly carried out on pets and farm animals. [3]

The VFB also coordinates the surveillance of food for the following zoonotic diseases: brucellosis, campylobacteriosis, echinococcosis, listeriosis, salmonella, trichinellosis, tuberculosis caused by *Mycobacterium bovis*, and *E. coli*. [2] It also tests cattle, pigs, poultry and food products derived from these animals for the presence of antibiotic-resistant *Salmonella* spp., *Campylobacter jejuni*, *Campylobacter coli*, *E. coli*, *Enterococcus faecalis*, and *Enterococcus faecium*. [4]

The VFB reports its findings on a yearly basis to the European Commission, per section 42.3 of the Infectious Animal Disease Control Act. [1] The "Requirements for the Surveillance of Zoonoses" document is supplemented by a separate act stipulating additional requirements for the surveillance of *Salmonella* spp. [5]

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. 2005. "Requirements for the Surveillance of Zoonoses" ("NÄµdud zoonooside seire korraldamise kohta"). [<https://www.riigiteataja.ee/akt/921685>]. Accessed 30 August 2020.

[3] Estonian Veterinary and Food Board. 2020. "Measures for the implementation of the state infectious animal disease program, 2020" ("Riiklike loomatauditÄµrje programmide rakendusmeetmed 2020. aastal").

[https://vet.agri.ee/sites/default/files/rntp_programm_2020.pdf]. Accessed 10 October 2020.

[4] Estonian Veterinary and Food Board. 2019. "2019 Report on Zoonoses" ("Zoonooside aruanne 2019").

[https://vet.agri.ee/sites/default/files/Toit/Aruanded/eesti_zoonooside_aruanne_2019.pdf]. Accessed 2 September 2020.

[5] Estonian Ministry of Rural Affairs. 2019. "Decree on the Prevention of Salmonella" ("Salmonella tÄµrje eeskiri").

[<https://www.riigiteataja.ee/akt/124052013002?leiaKehtiv>]. Accessed 2 September 2020.

1.2.1d

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

Yes = 1, No = 0

Current Year Score: 0

No evidence could be found of a zoonotic disease unit which functions across ministries beyond incidental cooperation. There is no evidence of such a unit on the websites of the Estonian Health Board, the Estonian Veterinary and Food Board (VFB), or the Estonian Ministry of Rural Affairs. [1, 2, 3] The VFB, which bears the primary responsibility for conducting surveillance of zoonoses, belongs only to the Ministry of Rural Affairs. [4, 5] The VFB relies on the Estonian Health Board, whose primary issue area is human health, for information about the occurrence of zoonotic diseases in humans to include in its yearly reports to the European Commission, but there is no evidence that the cooperation runs deeper than this. [5, 6]

[1] Veterinary and Food Board. [<https://vet.agri.ee>]. Accessed 2 September 2020.

[2] Estonian Health Board. [<https://www.terviseamet.ee>]. Accessed 2 September 2020.

[3] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[4] Estonian Veterinary and Food Board. "General information and structure" ("Äldinfo ja struktuur").

[<https://vet.agri.ee/et/kontakt-ametist/organisatsioon/uldinfo-ja-struktuur>]. Accessed 2 September 2020.

[5] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[6] Estonian Veterinary and Food Board. 2019. "2019 Report on Zoonoses" ("Zoonooside aruanne 2019").

[https://vet.agri.ee/sites/default/files/Toit/Aruanded/eesti_zoonooside_aruanne_2019.pdf]. Accessed 2 September 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a hotline, portal, or other mechanism in place for livestock owners to report directly to central authorities about disease surveillance or of a requirement for them to report this information. No evidence was found on the websites of the Ministry of Rural Affairs, Estonian Health Board, or the Veterinary and Food Board. [1, 2, 3]

Section 38 of the Infectious Animal Disease Control Act, last updated in December 2019, enumerates the categories of individuals who are required to notify the Ministry of Rural Affairs' Veterinary and Food Board (VFB) upon suspicion or diagnosis of one of the diseases indicated in the "List of Infectious Animal Diseases Requiring Notification or Registration" [4, 5]. It states that law enforcement authorities, veterinarians, employees of veterinary laboratories, and "other individuals" are bound to these requirements, without specifying who these other individuals may be. A scan of popular Estonian media outlets did not shed any light on this phrase [6, 7, 8].

[1] Estonian Ministry of Rural Affairs. "Home". [<http://agri.ee/en>]. Accessed 3 September 2020.. Accessed 2 September 2020.

[2] Veterinary and Food Board. [<http://www.vet.agri.ee>]. Accessed 2 September 2020.

[3] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020

[4] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[5] Estonian Ministry of Rural Affairs. 2013. "List of Infectious Animal Diseases Requiring Notification or Registration" ("Teatamiskohustuslike ja registreerimiskohustuslike loomataudide loetelu kinnitamine").

[<https://www.riigiteataja.ee/akt/13329161?leiaKehtiv>]. Accessed 2 September 2020.

[6] Postimees. [<https://www.postimees.ee>]. Accessed 2 September 2020.

[7] Eesti RahvusringhÄµling. [<http://www.err.ee>]. Accessed 2 September 2020.

[8] Eesti Ekspress. [<http://www.ekspress.delfi.ee>]. Accessed 2 September 2020.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of legislation or regulations that safeguard the confidentiality of information generated through animal surveillance activities in Estonia. No reference to this was found in the main document regulating surveillance for pathogens in animals (the Infectious Animal Disease Control Act), in the Personal Data Protection Act, or in the Public Information Act, or on the websites of the Estonian Health Board, Ministry of Rural Affairs, or the Veterinary and Food Board. [1, 2, 3]

However, Estonian livestock owners are required to submit identifying information about their animals and themselves to the Estonian Agriculture Register and Information Board (ARIB), according to section 11 of the Infectious Animal Disease Control Act (published in 1999 and last modified in 2019), which claims that this information is safeguarded in accordance with the Personal Data Protection Act (passed in 2018 and last updated in 2019) and the Public Information Act (effective in 2001 and last updated in 2019). [1, 4] Thus, while there is no evidence of specific data privacy regulations for pathogen surveillance, there seem to be broader protections in place for livestock owners' personal information.

However, the Infectious Animal Disease Control Act does not specify which personal information must be entered into the register, merely saying that information about animal owners should be logged in the register alongside information about their animals.[1] The Agriculture Register and Information Board (ARIB) also does not specify which information is safeguarded. [4]

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv]. Accessed 2 September 2020.

[2] Estonian Parliament. 2019. "Personal Data Protection Act" ("Isikuandmete kaitse seadus").

[https://www.riigiteataja.ee/akt/104012019011]. Accessed 2 September 2020.

[3] Estonian Parliament. 2019. "Public Information Act" ("Avaliku teabe seadus").

[https://www.riigiteataja.ee/akt/184506?leiaKehtiv]. Accessed 2 September 2020.

[4] Estonian Agriculture Register and Information Board (ARIB). 2020. "Use of Personal Information" ("Isikuandmete tÄµtlemine"). [https://www.pria.ee/isikuandmete-tootlemine]. Accessed 2 September 2020.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is an agency in Estonia that conducts surveillance of zoonotic disease in wildlife.

The Veterinary and Food Board (VFB) conducts surveillance on zoonoses in several wild animals and reports its findings in its yearly survey of zoonotic diseases in Estonia, as required by the Infectious Animal Disease Control Act (effective as of 1999 and updated in 2019) [1, 2]. There is evidence that the VFB conducts surveillance on wild boars, badgers, red foxes, cattle, martens, raccoons, bats, wild foxes, wild birds, and squirrels for rabies, avian influenza, toxoplasmosis, leptospirosis, transmissible spongiform encephalopathies, cysticercosis, Echinococcus, brucellosis, and tuberculosis. [3]

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv]. Accessed 2 September 2020.

[2] Veterinary and Food Board. 2018. "Zoonoses" ("Zoonoosid"). [https://vet.agri.ee/?op=body&id=820]. Accessed 3 September 2020.

[3] Estonian Veterinary and Food Board. 2019. "2019 Report on Zoonoses" ("Zoonooside aruanne 2019").

[https://vet.agri.ee/sites/default/files/Toit/Aruanded/eesti_zoonooside_aruanne_2019.pdf]. Accessed 2 September 2020.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 1

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: 83.75

2019

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 0.38

2019

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of plans, legislation or regulations that include mechanisms for working with the private sector in controlling or responding to zoonoses. No explicit references to including the private sector in zoonotic disease control could be found in the Infectious Animal Disease Control Act or on the websites for the Estonian Health Board, the Veterinary and Food Board, or the Ministry of Rural Affairs [1, 2, 3, 4, 5]. Section 6.3 of the Infectious Animal Disease Control Act (effective as of 1999 and updated in 2019), the national plan on zoonotic diseases, states that veterinarians may be contracted by the VFB

to help contain outbreaks of infectious animal diseases and are entitled to receive payment for their services [1]. However, it does not specify that this refers to private veterinarians.

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("LoomatauditÄµrje seadus").

[https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. 2005. "Requirements for the Surveillance of Zoonoses" ("NÄµdud zoonooside seire korraldamise kohta"). [https://www.riigiteataja.ee/akt/921685]. Accessed 2 September 2020.

[3] Veterinary and Food Board. [https://vet.agri.ee]. Accessed 2 September 2020.

[4] Ministry of Rural Affairs [http://agri.ee/en]. Accessed 2 September 2020.

[5] Estonian Health Board. [http://www.terviseamet.ee/info/uudised.html]. Accessed 2 September 2020.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Estonia has a record of facilities in which especially dangerous pathogens and toxins are stored [1].

Estonia's 2020 Biological Weapons Convention Confidence Building Measure report lists the following laboratories are biosafety level 3 facilities: Joint Laboratories of Tartu University Clinics, Institute of Biomedicine and Translational Medicine of Tartu University, Laboratory of Communicable Diseases of Estonian Health Board, Synlab/Estonia, Microbiology Laboratory of North-Estonia Regional Hospital, Veterinary & Food Laboratory, and the Laboratory for Mycobacteriosis of University of Life Sciences. [1]. However, there is no further evidence of a public or private record of these facilities, and it is not clear whether this list has been updated within the past 5 years. Additionally, no details are provided about inventory practices in this document, in previous CBM reports, or on the websites of the Estonian Health Board, the Ministry of Rural Affairs, the Estonian Environmental Ministry, the Estonian Defense Ministry, or the National Institute for Health Development. [2, 3, 4, 5, 6] Additionally, no information pertaining to this could be found in the Verification, Research, Training and Information Center (VERTIC) biological weapons and materials legislation database. [7]

[1] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. "Home". [http://agri.ee/en]. Accessed 2 September 2020.

[3] Estonian Environmental Ministry. "Home". [https://www.keskkonnaamet.ee]. Accessed 2 September 2020.

[4] Estonian Defense Ministry. "Home". [http://www.kaitseministeerium.ee]. Accessed 2 September 2020.

[5] National Institute for Health Development. "Main page". [http://www.tai.ee] Accessed 2 September 2020.

[6] BWC1972. 2019. "Estonia CBM 2019". [https://bwc-ecbm.unog.ch/estonia/bwccbm2019estonia]. Accessed 2 September 2020.

[7] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database".

[<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.

1.3.1b

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

Yes = 1, No = 0

Current Year Score: 1

There is evidence of biosecurity legislation in Estonia that addresses physical containment and operation practices. [1, 2, 3]

The decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019) outlines how dangerous biological agents should be handled in the workplace, and the decree "Procedures for Handling Infectious Materials" (published in 2003 and last updated in 2010) establishes additional guidelines for how medical workers and laboratory technicians should process, store, and transport dangerous biological agents. [2, 3] Under section 2.12 of the former decree, employers are required to submit to the Labor Inspectorate a list of activities potentially exposing workers to dangerous biological agents. This decree contains a list of potentially dangerous biological agents and establishes basic guidelines for handling them. [3] These guidelines cover physical containment, labeling, operation practices, and access. For example, it provides three levels of danger for biological agents and states that access to agents in the lowest danger group does not have to be limited, that agents in the medium danger group require limited access, and that agents in the most dangerous group must be handled only by those who require access to them and only in an airlock. [2]

[1] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[2] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest määjutatud tervikkeskkonna terviktervishoiu ja tervikohutuse nõuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.

[3] Estonian Ministry of Social Affairs. 2010. "Procedures for Handling Infectious Materials" ("Nakkusohutliku materjali käsitlemise kord"). [<https://www.riigiteataja.ee/akt/13253234>]. Accessed 2 September 2020.

1.3.1c

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

Yes = 1, No = 0

Current Year Score: 1

There is an established agency responsible for the enforcement of biosecurity legislation in Estonia. The Estonian Labor Inspectorate and the Estonian Health Board are responsible for enforcing the biosecurity regulations outlined in the Occupational Health and Safety Act, the decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019) and the decree "Procedures for Handling Infectious Materials" (published in 2003 and last updated in 2010). [1, 2, 3, 4]

The Estonian Labor Inspectorate (ELI) is to ensure employers' compliance with the requirements enumerated in the Occupational Health and Safety Act and the decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" about how to handle dangerous biological agents [2, 3]. In addition, any person or

other entity who handles infectious materials must obtain the corresponding permit from the Estonian Health Board (EHB) through an application process which involves describing the necessity of obtaining the permit and providing a list of security measures being taken to prevent the mis-handling of the materials. [1]

[1] Estonian Parliament. 2020. "Occupational Health and Safety Act" ("TÄÄÄtervishoiu ja tÄÄÄohutuse seadus"). [https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv]. Accessed 2 September 2020.

[2] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest mÄµjutatud tÄÄÄkeskkonna tÄÄÄtervishoiu ja tÄÄÄohutuse nÄµuded"). [https://www.riigiteataja.ee/akt/1024264?leiaKehtiv]. Accessed 2 September 2020.

[3] Estonian Ministry of Social Affairs. 2010. "Procedures for Handling Infectious Materials" ("Nakkusohtliku materjali kÄitlemise kord"). [https://www.riigiteataja.ee/akt/13253234]. Accessed 2 September 2020.

[4] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Estonia has taken measures to restrict dangerous pathogens and toxins to a minimum number of facilities. [1]

According Estonia's 2020 Biological Weapons Convention Confidence Building Measures Report, the following labs are designated as Biosafety Level 3 facilities: Joint Laboratories of Tartu University Clinics, Institute of Biomedicine and Translational Medicine of Tartu University, Laboratory of Communicable Diseases of Estonian Health Board, Synlab/Estonia, Microbiology Laboratory of North-Estonia Regional Hospital, Veterinary & Food Laboratory, Laboratory for Mycobacteriosis of University of Life Sciences. [1] This designation requires that dangerous pathogens and toxins be handled only at these facilities; however, there is no evidence that efforts have been made to consolidate dangerous pathogens and toxins to these facilities, and no further evidence could be found on the websites of the Estonian Health Board, Ministry of Defense, or Ministry of Rural Affairs, or in the Verification Research, Training and Information Center's biological weapons and materials legislation database. [2, 3, 4, 5]

Estonia does not report having any Biosafety Level 4 facilities. [1]

[1] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[2] Estonian Health Board. [http://terviseamet.ee]. Accessed 11 October 2020.

[3] Estonian Ministry of Rural Affairs. [http://agri.ee]. Accessed 11 October 2020.

[4] Estonian Ministry of Defense. [http://kaitseministeerium]. Accessed 11 October 2020.

[5] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database". [http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/]. Accessed 9 October 2020.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence of in-country capacity in Estonia to conduct Polymerase Chain Reaction (PCR)-based testing for anthrax or ebola. [1, 2] In both cases, the bodily fluids or other specimens collected from the patient must be sent to the Estonian Health Board's Infectious Diseases Laboratory, which sends them on to the Public Health Agency of Sweden. [1, 2] However, the PCR method is used at the Central Laboratory of the Health Board of Estonia to test for a variety of other pathogens that lead to respiratory/gastrointestinal diseases or meningitis. [3, 4] In 2014, an advisor from the Public Health Department of the Estonian Ministry of Social Affairs confirmed that Estonia needed to work together with Sweden because of Estonia's inability to test for Ebola domestically. [5] No further evidence could be found on the website of the Estonian Ministry of Defense. [6]

[1] Estonian Health Board. 2016. "Instructions for the Prevention of Infectious Diseases and the Spread of Epidemics" ("Nakkushaiguste tõrje ja epideemilise leviku tõkestamise juhised").

[http://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/juhendid/Siberi_katku_juhis_2016.pdf]. Accessed 3 September 2020.

[2] Estonian Health Board. 2016. "Ebola Virus" ("Ebola viirushaigus").

[http://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/meedikutele/Ebola_virushaigusest_meedikutele.pdf]. Accessed 3 September 2020.

[3] Estonian Health Board. 2017. "Comprehensive tests for pathogens that can be detected using the PCR method" ("PCR meetodil määratavate tekitajate kompleksanalüüsid").

[http://www.terviseamet.ee/fileadmin/dok/Laborid/Kesklabori_saatelehed/PCR_kompleks.pdf]. Accessed 3 September 2020.

[4] Estonian Health Board. 2018. "Estonian Health Board Central Laboratory" ("Terviseameti Kesklabor").

[<http://www.terviseamet.ee/laborid/kesklabor.html>]. Accessed 3 September 2020.

[5] Änilane, Eleen. 2014. "Eesti haiglad on ebola ravimiseks valmis" ("Estonian hospitals are ready to treat ebola").

[<http://www.delfi.ee/news/paevauudised/eesti/eesti-haiglad-on-ebola-ravimiseks-valmis?id=69865569>]. Accessed 3 September 2020.

[6] Estonian Ministry of Defense. [<http://kaitseministeerium.ee>]. Accessed 11 October 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

No evidence of a standardised biosecurity training in Estonia could be found on the websites of the Estonian Health Board, the Estonian Labor Inspectorate, the Estonian Ministry of Defense, the Estonian Ministry of Rural Affairs, in Estonia's two most recent Biological Weapons Convention Confidence Building Measure Reports, in the primary piece of legislation dealing with occupational health and safety (the Occupational Health and Safety Act) or in the Verification Research, Training and Information Center's biological weapons and materials legislation database.[1, 2, 3, 4, 5, 6, 7, 8]

Employers are required to provide training to new employees before they begin working with dangerous biological materials; however, the content of these trainings is not specified in any of the relevant regulations about workplace safety, including the Occupational Health and Safety Act, the decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present," (effective as of 2000 and last updated in 2019) the decree "Procedures for Occupational Health and Safety Introductory Training and Supplemental Training" (published in 2002 but no longer in effect as of 2019) or the Estonian Labor Inspectorate's 2014 Handbook "Supervising and Training Employees". [7, 9, 10, 11]

There is no evidence that Estonia has formally adopted or endorsed a biosecurity protocol on the websites of the Estonian Health Board, Ministry of Defense, Labor Inspectorate, or Ministry of Agriculture, nor in the Verification Research, Training and Information Center's biological weapons and materials legislation database or Estonia's 2019/2020 Biological Weapons Convention Confidence Building Measure reports. [1, 2, 3, 4, 5, 6, 7, 8]

- [1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.
- [2] Estonian Defense Ministry. "Home". [<http://www.kaitseministeerium.ee/>]. Accessed 2 September 2020.
- [3] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.
- [4] Estonian Labor Inspectorate. "TÄÄÄinspeksioon" ("Labor Inspectorate"). [<http://www.ti.ee>]. Accessed 2 September 2020.
- [5] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.
- [6] United Nations Office at Geneva. 2019. "BWC Electronic Confidence Building Measure Portal: 2019 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_estonia.pdf]. Accessed 11 October 2020.
- [7] Estonian Parliament. 2020. "Occupational Health and Safety Act" ("TÄÄÄtervishoiu ja täÄÄohutuse seadus"). [<https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv>]. Accessed 2 September 2020.
- [8] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database". [<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.
- [9] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest mÄÄjutatud täÄÄkeskkonna täÄÄtervishoiu ja täÄÄohutuse nÄÄuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.
- [10] Estonian Ministry of Social Affairs. 2002. "Procedures for Occupational Health and Safety Introductory Training and Supplemental Training" ("TÄÄÄtervishoiu- ja täÄÄohutusalase vÄÄjaÄÄppe ja täÄÄendÄÄppe kord"). [<https://www.riigiteataja.ee/akt/23105>]. Accessed 2 September 2020.
- [11] Estonian Labor Inspectorate. 2014. "Supervising and Training Employees" ("TÄÄÄÄitajate juhendamine ja vÄÄjaÄÄppe"). [https://www.ti.ee/fileadmin/user_upload/failid/dokumendid/Meedia_ja_statistika/Truekised/tootajate_juhendamine_ja_valjaope.pdf]. Accessed 2 September 2020.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no evidence of regulations or licensing conditions that specify that people with access to dangerous pathogens, toxins, or biological materials must undergo drug tests, background checks, or psychological or mental fitness checks. There is no evidence of such a requirement on the websites of the Estonian Health Board, the Estonian Defense Ministry, or the Estonian Ministry of Rural Affairs, in Estonia's 2019/2020 Biological Weapons Convention Confidence Building Measure reports, or in the Verification Research, Training and Information Center's (VERTIC) biological weapons and materials legislation database [1, 2, 3, 4, 5, 6].

According to the decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019), all individuals who require access to infectious materials must obtain a permit from the Estonian Health Board to do so. [7] Applicants for this permit are required to submit their personal information (name, home and business addresses, personal ID code) and job qualifications, but there is no evidence of any drug tests, background checks or psychological or mental fitness checks [8, 9].

- [1] Estonian Health Board. "News". [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.
- [2] Estonian Defense Ministry. "Home". [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.
- [3] Estonian Ministry of Rural Affairs. "Home". [<http://www.agri.ee>]. Accessed 2 September 2020.
- [4] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.
- [5] United Nations Office at Geneva. 2019. "BWC Electronic Confidence Building Measure Portal: 2019 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_estonia.pdf]. Accessed 11 October 2020.
- [6] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database". [<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.
- [7] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest määjutatud tööajakeskkonna tööajaintervishi ja tööajahoituse nõuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.
- [8] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrjumise seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 2 September 2020.
- [9] Estonian Health Board. 2014. "Instructions for Applying for a Permit to Handle Infectious Materials" ("Nakkusohtliku materjali käsitlemise tegevusloa taotlemise juhend"). [http://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/juhendid/Nakohtl_mat_taotlemise_juhend.pdf]. Accessed 2 September 2020.

1.3.4 Transportation security

1.3.4a

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

Yes = 1, No = 0

Current Year Score: 1

There is publicly available evidence of national regulations on the safe and secure transport of Category A and B infectious substances. [1, 2] The decree "Procedures for the Handling of Infectious Materials" (passed in 2010) gives concrete guidelines on the safe and secure transport of infectious substances, citing the United Nations (UN) "Recommendations on the Transport of Dangerous Goods". [1, 3]

The Infectious Diseases Laboratory of the Estonian Health Board has also issued recommendations on the transport of

infectious substances, providing separate guidelines for Category A and Category B substances. [4] These recommendations are informed by the UN's "Recommendations on the Transport of Dangerous Goods" (published in 2013) and by the World Health Organization's "Guidance on regulations for the transport of infectious substances 2013-2014" - which is confirmed by Estonia's 2020 Biological Weapons Convention Confidence Building Measure Report. [1, 2, 3, 4]

[1] Estonian Ministry of Social Affairs. 2010. "Procedures for the Handling of Infectious Materials" ("Nakkusohtliku materjali käsitlemise kord"). [<https://www.riigiteataja.ee/akt/640883?leiaKehtiv>]. Accessed 3 September 2020.

[2] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[3] Estonian Health Board. 2013. "Recommendations on the transport of Infectious Materials" ("Nakkusohtliku materjali transportimine"). [http://www.terviseamet.ee/fileadmin/dok/Laborid/NH_labor/Nakkusohtliku_materjali_transport.pdf]. Accessed 2 September 2020.

[4] World Health Organization (WHO). "Guidance on regulations for the transport of infectious substances 2013-2014". [http://apps.who.int/iris/bitstream/handle/10665/78075/WHO_HSE_GCR_2012.12_eng.pdf?sequence=1]. Accessed 2 September 2020.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1, No = 0

Current Year Score: 1

Cross-border transfer and end-user screening of infectious substances are regulated in Estonia.

End-user screening is regulated at the European Union level - and Estonia as a Member State is subject to these regulations.

[1] In particular, according to the "Commission Delegated Regulation (EU) 2017/2268 of 26 September 2017 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items" export authorisation is subject to the identification of the end-user and the purpose of end-use. [1] The regulation states that dual-use items, including biological agents, may not be exported when the exporter is informed by Member State authorities that they are intended for the production of weapons of mass destruction, or for military use more broadly where the destination country is subject to an arms embargo imposed by the Organization for Security and Cooperation in Europe or the United Nations Security Council. [1]

At the national level, the decree "Procedures for the Handling of Infectious Materials" (passed in 2010) gives concrete guidelines on the safe and secure transport of infectious substances, including how dangerous biological materials being sent out of the country should be packaged, citing the United Nations (UN) "Recommendations on the Transport of Dangerous Goods" from 2013 - a fact confirmed by Estonia's 2020 Biological Weapons Convention Confidence Building Measure Report. [2, 3, 4]

The Infectious Diseases Laboratory of the Estonian Health Board has also issued recommendations on the transport of infectious substances, stating that infectious materials destined for other countries must be packaged and labeled in accordance with the UN's recommendations. [5]

[1] European Commission. 2017. "Commission Delegated Regulation (EU) 2017/2268 of 26 September 2017 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R2268>]. Accessed 2 September 2020.

[2] Estonian Ministry of Social Affairs. 2010. "Procedures for the Handling of Infectious Materials" ("Nakkusohtliku materjali käsitlemise kord"). [<https://www.riigiteataja.ee/akt/640883?leiaKehtiv>]. Accessed 2 September 2020.

[3] United Nations (UN). 2013. "UN Recommendations on the Transport of Dangerous Goods - Model Regulations, Eighteenth revised edition". [http://www.unece.org/trans/danger/publi/unrec/rev18/18files_e.html]. Accessed 2 September 2020.

[4] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[5] Estonian Health Board. 2013. "Transport of Infectious Materials" ("Nakkusohtliku materjali transportimine"). [http://www.terviseamet.ee/fileadmin/dok/Laborid/NH_labor/Nakkusohtliku_materjali_transport.pdf]. Accessed 2 September 2020.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Estonia has national biosafety regulations in place. [1, 2, 3, 4]

The Occupational Health and Safety Act and a decree titled "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019) provide guidelines for ensuring biosafety in the workplace; the latter provides names of specific agents such as *Campylobacter* spp, *E. coli*, and *S. pneumoniae* [2, 3]. The decree "Procedures for the Handling of Infectious Materials" (passed in 2010) establishes additional guidelines for how medical workers and laboratory technicians should process, store, and transport dangerous biological agents. [4]

Furthermore, Estonia is a signatory of the Cartagena Protocol on Biosafety, which is concerned primarily with genetically modified organisms, and there is national legislation regulating the release of genetically modified organisms into the environment. [5, 6]

[1] Estonian Parliament. 2020. "Occupational Health and Safety Act" ("TÄÄÄtervishoiu ja tÄÄÄohutuse seadus"). [<https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv>]. Accessed 2 September 2020.

[2] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[3] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest mÄÄjutatud tÄÄÄkeskkonna tÄÄÄtervishoiu ja tÄÄÄohutuse nÄÄuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.

[4] Estonian Ministry of Social Affairs. 2010. "Procedures for the Handling of Infectious Materials" ("Nakkusohtliku materjali käsitlemise kord"). [<https://www.riigiteataja.ee/akt/640883?leiaKehtiv>]. Accessed 2 September 2020.

[5] Biosafety Clearing House. 2015. "Third National Report on the implementation of the Cartagena Protocol on Biosafety

(Estonia)". [<https://bch.cbd.int/database/record.shtml?documentid=109162>]. Accessed 2 September 2020.

[6] Estonian Parliament. 2019. "Release into Environment of Genetically Modified Organisms Act" ("Geneetilisel muundatud organismide keskkonda viimise seadus"). [<https://www.riigiteataja.ee/akt/123122010024?leiaKehtiv>]. Accessed 2 September 2020.

1.4.1b

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

Yes = 1, No = 0

Current Year Score: 1

There is an established agency responsible for the enforcement of biosafety regulations in Estonia.

While there is no agency with the specific remit of enforcing biosafety, one of the Estonian Labor Inspectorate's (ELI) responsibilities is ensuring employers' compliance with the biosafety requirements enumerated in the Occupational Health and Safety Act (published in 1999 and last updated in 2020) and the decree "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019) about how dangerous biological agents should be handled. [1, 2, 3, 4, 5] The ELI focuses primarily on protecting the safety of workers and preventing accidents. [6]

In addition, any person or other entity who handles infectious materials must obtain the corresponding permit from the Estonian Health Board. [7] Estonia's 2019 and 2020 Biological Weapons Convention Confidence Building Measure Reports do not make any mention of specific agencies responsible for enforcing biosafety regulations/legislation but does indicate the existence of regulations/legislation. [8]

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[2] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[3] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[4] Estonian Parliament. 2020. "Occupational Health and Safety Act" ("TÄÄÄtervishoiu ja tÄÄÄohutuse seadus"). [<https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv>]. Accessed 2 September 2020.

[5] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest mÄÄjutatud tÄÄÄkeskkonna tÄÄÄtervishoiu ja tÄÄÄohutuse nÄÄuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.

[6] Estonian Labor Inspectorate. "Oversight" ("JÄÄrelevalve"). [<https://www.ti.ee/et/tookeskkond-toosuhted/jarelvalve>]. Accessed 2 September 2020.

[7] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tÄÄrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 2 September 2020.

[8] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

1.4.2 Biosafety training and practices

1.4.2a

Does the country require biosafety training, using a standardized, required approach, such as through a common curriculum or a 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 evidence of a standardised biosafety training in Estonia, according to the country's Health Board, Labor Inspectorate, Ministries of Defence and Rural Affairs, in Estonia's 2019 and 2020 Biological Weapons Convention Confidence Building Measure Reports, or in the Verification Research, Training and Information Center's (VERTIC) biological weapons and materials legislation database. [1, 2, 3, 4, 5, 6]

Employers are required according to the regulation "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" (effective as of 2000 and last updated in 2019) to provide training to new employees before they begin working with dangerous biological materials; however, the content of these trainings is not specified in any of the relevant regulations and documents about workplace safety. [7, 8, 9, 10, 11] Estonia does have legislation/guidelines specifically concerning biosafety. [7, 8, 11]

Estonia is a signatory party to the Cartagena Protocol on Biosafety, which is concerned primarily with genetically modified organisms, and there is national legislation regulating the release of genetically modified organisms into the environment. [5, 12]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[3] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[4] Estonian Labor Inspectorate. "TÄÄÄinspeksioon" ("Labor Inspectorate"). [<http://www.ti.ee>]. Accessed 2 September 2020.

[5] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[6] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database". [<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.

[7] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest määjutatud täÄÄkeskkonna täÄÄtervishoiu ja täÄÄohutuse nõuded"). [<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 2 September 2020.

[8] Estonian Parliament. 2013. "Occupational Health and Safety Act" ("TÄÄÄtervishoiu ja täÄÄohutuse seadus"). [<https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv>]. Accessed 2 September 2020.

[9] Estonian Ministry of Social Affairs. 2002. "Procedures for Occupational Health and Safety Introductory Training and Supplemental Training" ("TÄÄÄtervishoiu- ja täÄÄohutusalase vÄÄjaÄppe ja täÄÄendÄppe kord"). [<https://www.riigiteataja.ee/akt/23105?leiaKehtiv>]. Accessed 2 September 2020.

[10] Estonian Labor Inspectorate. 2014. ""Supervising and Training Employees"" ("TÄÄÄtjate juhendamine ja vÄÄjaÄppe"). [https://www.ti.ee/fileadmin/user_upload/failid/dokumentid/Meedia_ja_statistika/Truekised/tootajate_juhendamine_ja_valjaope.pdf]. Accessed 2 September 2020.

[11] Estonian Ministry of Social Affairs. 2010. "Procedures for the Handling of Infectious Materials" ("Nakkusohtliku materjali käsitlemise kord"). [<https://www.riigiteataja.ee/akt/640883?leiaKehtiv>]. Accessed 2 September 2020.

[12] Estonian Parliament. 2020. "Release into Environment of Genetically Modified Organisms Act" ("Geneetiliselt muundatud organismide keskkonda viimise seadus"). [<https://www.riigiteataja.ee/akt/123122010024?leiaKehtiv>]. Accessed 2 September 2020.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Estonia has conducted an assessment to determine whether dual-use research is being conducted in the country. No such evidence exists in Estonia's most recent Biological Weapons Convention Confidence Building Measure Report, or other websites of the Estonian Health Board, Ministry of Defense, or Ministry of Agriculture. [1, 2, 3, 4] Estonia is obliged under the Biological Weapons Convention to prepare regular Confidence Building Measure reports indicating whether or not offensive/defensive biological research is being carried out. [1] Estonia's 2019 and 2020 CBM reports state that there has been no activity in the area of offensive and/or defensive biological research and development programs; however, dual-use research is not explicitly mentioned. [1] Moreover, certain types of dual-use research using infectious substances are regulated at the European Union level and Estonia as a Member State is subject to these regulations, but they do not mandate any assessment. [5]

There is national-level legislation (the "Strategic Goods Act," passed in 2011 and last updated in 2020) that addresses the licensing and transportation of dual-use agents, but there is no mention in the legislation of research or of regular state assessments. [6] There is no additional information in the Verification Research, Training and Information Center's (VERTIC) biological weapons and materials legislation database. [7]

[1] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[2] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[3] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[4] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[5] European Commission. 2017. "Commission Delegated Regulation (EU) 2017/2268 of 26 September 2017 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R2268>]. Accessed 2 September 2020.

[6] Estonian Parliament. 2020. "Strategic Goods Act" ("Strateegiliste kaupade seadus").

[<https://www.riigiteataja.ee/en/eli/512022020002/consolide>]. Accessed 2 September 2020.

[7] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database".

[<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence on the websites of the Estonian Health Board, Ministry of Defense, or Veterinary and Food Board, or in Estonia's 2019 or 2020 Biological Weapons Convention Confidence Building Measure reports of a policy requiring oversight of dual-use research with especially dangerous pathogens, toxins, and pathogens with pandemic potential in Estonia. [1, 2, 3, 4]

European Commission Delegated Regulation (EU) 2017/2268 from 2017 states that dual-use agents are "subject to controls in the Union", and Estonia is bound to this requirement as a member state of the European Union; however, these are transportation controls, rather than research controls. [5] These "controls" include "the Wassenaar Arrangement, the Missile Technology Control Regime (MTCR), the Nuclear Suppliers' Group (NSG), the Australia Group and the Chemical Weapons Convention (CWC)". [5]

However, no evidence could be found on the websites of the Estonian Health Board, the Ministry of Defense, or the Ministry of Rural Affairs of national-level regulations relating to dual-use research. [2, 3, 4] There is national-level legislation (the "Strategic Goods Act," passed in 2011 and last updated in 2020) that addresses the licensing and transportation of dual-use agents, but there is no mention in the legislation of dual-use research. [6] No additional information could be found in the Verification Research, Training and Information Center's (VERTIC) biological weapons and materials legislation database. [7]

[1] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[2] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[3] Estonian Ministry of Rural Affairs. "Home". [<http://www.agri.ee>]. Accessed 3 September 2020.

[4] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[5] European Commission. 2017. "Commission Delegated Regulation (EU) 2017/2268 of 26 September 2017 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R2268>]

[6] Estonian Parliament. 2020. "Strategic Goods Act" ("Strateegiliste kaupade seadus").

[<https://www.riigiteataja.ee/en/eli/512022020002/consolide>]. Accessed 2 September 2020.

[7] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database".

[<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.

1.5.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence on the websites of the Estonian Health Board, Ministry of Rural Affairs, Defense Ministry, in the Occupational Health and Safety Act, or in Estonia's 2019/2020 Biological Weapons Convention Confidence Building Measure Reports of an agency responsible for overseeing research with pathogens [1, 2, 3, 4, 5].

While employers in workplaces where such pathogens may be present are required to submit certain information to the Estonian Labor Inspectorate, such as the nature of the work being performed, this information seems to be used first and foremost to assess potential threats to employees' health rather than to exercise oversight over dual-use research. Moreover, Estonia's 2020 Biological Weapons Convention Confidence Building Measure report states that

offensive/defensive biological research is not being carried out in the country. [5] While the export of dual-use technology is controlled at the European Union level, it does not appear that the EU conducts direct oversight of dual-use research [6].

Per the "Strategic Goods Act" (passed in 2011 and last updated in 2020), part of the mandate of the Estonian Strategic Goods Commission is to "discuss and decide on issues related to restrictions on the carriage of [strategic] goods" and the "provision of services related to [strategic] goods," but it is not clear whether this mandate includes dual-use research specifically. [7]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[3] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[4] ""Occupational Health and Safety Act"" ("TÄÄÄtervishoiu ja tÄÄÄohutuse seadus").

[<https://www.riigiteataja.ee/akt/106072012060>]. Accessed 3 September 2020.

[5] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[6] European Commission. 2017. "Commission Delegated Regulation (EU) 2017/2268 of 26 September 2017 amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32017R2268>]. Accessed 3 September 2020.

[7] Estonian Parliament. 2020. "Strategic Goods Act" ("Strateegiliste kaupade seadus").

[<https://www.riigiteataja.ee/en/eli/512022020002/consolide>]. Accessed 2 September 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of legislation in Estonia requiring that synthetic DNA be screened for sequences related to dangerous agents. No such evidence exists on the websites of the Estonian Health Board, The Ministry of Rural Affairs, the Defense Ministry, or the Estonian Parliament. [1, 2, 3, 4]

However, the use of synthetic DNA is regulated in Estonia. As per the Release into Environment of Genetically Modified Organisms Act (passed in 2004 and revised last in 2019), any entity that wishes to place a product containing genetically modified organisms on the market must apply for a permit from the Ministry of the Environment's Genetic Technology Commission; the application must include information such as the type of GMO contained in the product, a summary of the results of any studies carried out on the product, and an emergency response plan to be consulted in the event of an accident, per section 7. [4] The applicant must also provide an assessment of how the product could potentially cause harm to humans or to the environment and how these risks can be managed, per section 7. [4] This same act makes specific reference to recombinant DNA, per section 3. [4] While the law does not contain any explicit references to pathogens, its scope is not explicitly limited to agriculture. [4] No further information was found in the Verification Research, Training and Information Center's (VERTIC) biological weapons and materials legislation database or in Estonia's 2019/2020 Biological Weapons Convention Confidence Building Measure Reports. [5, 6]

The Ministry of the Environment published a report on the risks posed by GMOs to human health, in which it mentions that

pathogens may accidentally be synthesized during the process of genetic modification. [7]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[3] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[4] Estonian Parliament. 2015. "Release into Environment of Genetically Modified Organisms Act" ("Geneetiliselt muundatud organismide keskkonda viimise seadus"). [<https://www.riigiteataja.ee/akt/742762?leiaKehtiv>]. Accessed 2 September 2020.

[5] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation Database".

[<http://vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/>]. Accessed 9 October 2020.

[6] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measure Portal: 2020 Estonia". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2020_estonia.pdf]. Accessed 2 September 2020.

[7] Estonian Ministry of the Environment. 2008. "How to Assess the Effect of GMOs on Humans and on Nature" ("Kuidas hinnata GMOde mõju inimestele ja loodusele"). [<https://www.envir.ee/sites/default/files/gmoesti.pdf>]. Accessed 2 September 2020.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 1

2019

World Health Organization

1.6.1b

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

Yes = 1, No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 2

The national laboratory system has the capacity to conduct diagnostic tests for 6 of the WHO-defined core tests.

PCR testing for influenza can be performed at the Estonian Health Board's Infectious Diseases Laboratory, virus culture for poliovirus can be performed at the Estonian Health Board's Infectious Diseases Laboratory, serology for HIV can be performed at 33 primary diagnostic laboratories, microscopy for tuberculosis is performed in 6 laboratories, bacterial culture for typhoid can be performed, though it is not clear in which laboratories, and rapid diagnostic testing for malaria can be performed at the West Tallinn Central Hospital. [1, 2, 3, 4, 5, 6] Estonia does not appear to have publicly defined its four country-specific tests. [7, 8]

Estonia's Health Board has a Central Laboratory with several sub-laboratories (including the Infectious Diseases Laboratory) but there is no overarching national laboratory system, and there does not appear to be any one facility that can perform all of these tests.

- [1] Estonian Health Board. 2017. "Comprehensive tests for pathogens that can be detected using the PCR method" ("PCR meetodil määratavate tekitajate kompleksanalüüs"). [https://web.archive.org/web/20180910165111/http://www.terviseamet.ee/fileadmin/dok/Laborid/Kesklabori_saateled/P CR_kompleks.pdf]. Accessed 2 September 2020.
- [2] Estonian Health Board. 2016. "Laboratory Surveillance of Poliovirus and Enterovirus" ("Polio- ja enteroviiruste laboriseire"). [https://www.terviseamet.ee/fileadmin/dok/Nakkushaigused/19.05_materjalid/Polio-_ja_enteroviiruste_laboriseire.pdf]. Accessed 2 September 2020.
- [3] World Health Organization (WHO). 2011. "HIV Epidemic in Estonia: Analysis of Strategic Information". [http://www.euro.who.int/__data/assets/pdf_file/0020/155630/e96096.pdf]. Accessed 2 September 2020.
- [4] Kliiman, Kai; Viiklepp, Piret; Kummik, Tiina, and Danilovits, Manfrid. 2010. "Tuberkuloosihigestumus Eestis" ("Incidence of tuberculosis in Estonia"). [https://ojs.utlib.ee/index.php/EA/article/download/10706/5891]. Accessed 2 September 2020.
- [5] Estonian Health Board. 2020. "Communicable Disease Statistics in Estonia" ("Nakkushaiguste esinemine Eestis"). [https://www.terviseamet.ee/sites/default/files/Nakkushaigused/Trukised/nakkushaiguste_esinemine_eestis_17.pdf]. Accessed 2 September 2020.
- [6] West Tallinn Central Hospital. "Order Form for Fee-Based Lab Tests" ("Labi tasuliste uuringute tellimiskiri"). [https://www.keskhaigla.ee/wp-content/uploads/2015/04/LAB-P05-L07-Tasuliste-uuringute-tellimiskiri.pdf]. Accessed 3 September 2020.

[7] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[8] National Institute for Health Development. "Main page". [<http://www.tai.ee>]. Accessed 2 September 2020.

2.1.1b

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

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

Current Year Score: 0

There is no evidence of a plan for conducting testing during a public health emergency with considerations for testing for novel pathogens, scaling capacity, or defining goals for testing in Estonia.

No evidence of this could be found on the websites of the Estonian Health Board or Veterinary and Food Board. [1, 2,]

There is also no evidence of a singular COVID-19 testing rollout strategy in Estonia. In April 2020, the Estonian Health Board permitted family doctors to refer any patient with symptoms to be tested for the virus, regardless of age or comorbidities. [3] The Government of Estonia has also endorsed a study meant to determine the spread of coronavirus by testing 2,000 symptomatic and asymptomatic people each week. [4]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[3] Estonian Health Board. April 2020. "37 new positive tests today" ("37 uue positiivset testi"). [<https://www.terviseamet.ee/et/uudised/ooaevaga-lisandus-37-positiivset-testi>]. Accessed 9 September 2020.

[4] Government of Estonia. April 2020. "The Members of the Government supported the University of Tartu research for better mapping of COVID-19 spread". [<https://www.valitsus.ee/en/news/members-government-supported-university-tartu-research-better-mapping-covid-19-spread>]. Accessed 9 September 2020.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is a national laboratory in Estonia that serves as a reference facility which is accredited. The Communicable Diseases Laboratory in Estonian Health Board's Central Laboratory provides reference services and is accredited to ISO 17025 and ISO 15189, in addition to being accredited by the Estonian Accreditation Center. [1, 2]

[1] Estonian Health Board. "Central laboratory". [<https://www.terviseamet.ee/en/laboratories/central-laboratory>] Accessed 2 September 2020.

[2] Estonian Health Board. 2020. "Estonian Health Board laboratories". [<https://www.terviseamet.ee/et/laborid/terviseameti->

laborid-0]. Accessed 2 September 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The Estonian Health Board's Infectious Diseases Laboratory is accredited by the WHO and is subject to yearly quality assessments [1]. In addition, as a member of the European Food and Waterborne Diseases and Zoonoses Network [2], the European Reference Laboratory Network for Human Influenza [3], the European Antimicrobial Resistance Surveillance Network [4], the European Network for HIV/AIDS Surveillance [5], and the European Surveillance of Antimicrobial Consumption Network [6], the Estonian Health Board is subject to external quality assurance by the European Centre for Disease Control (ECDC) [7].

[1] Estonian Health Board. "Infectious Diseases Laboratory" ("Nakkushaiguste labor").

[<https://www.terviseamet.ee/et/labor/uldine/kesklabor/nakkushaiguste-labor>]. Accessed 11 October 2020.

[2] European Center for Disease Prevention and Control / European Food- and Waterborne Diseases and Zoonoses Network (FWD-Net). "Participating Institutions". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/fwd-net>]. Accessed 11 October 2020.

[3] European Center for Disease Prevention and Control / European Reference Laboratory Network for Human Influenza (ERLI-Net). "Laboratory surveillance of influenza". [<https://ecdc.europa.eu/en/about-us/networks/disease-and-laboratory-networks/erlinet-lab-surveillance-influenza>.] Accessed 11 October 2020.

[4] European Center for Disease Prevention and Control / European Antimicrobial Resistance Surveillance Network. "About the Network". [<https://ecdc.europa.eu/en/about-us/networks/disease-networks-and-laboratory-networks/ears-net-about>]. Accessed 11 October 2020.

[5] European Center for Disease Prevention and Control / European Network for HIV/AIDS Surveillance. "About the network". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/european-network-hiv-aids-1>]. Accessed 11 October 2020.

[6] European Center for Disease Prevention and Control / European Surveillance of Antimicrobial Consumption Network. "About the network". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/esac-net-about>]. Accessed 11 October 2020.

[7] European Center for Disease Control. "Disease and laboratory networks". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks>]. Accessed 11 October 2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 0

Estonia has specimen transport systems that operate around the nation, but there is insufficient evidence that it covers at least 80% of the country. [1] The Center of Food and Fermentation Technologies, which performs tests on human waste,

mentions that the following companies may be used for the delivery of specimen to its laboratory: Jet Express, OSC, 24Express, Pakivedu, Omniva, and Smartpost. [1] Omniva acts as the postal service of Estonia and is active in all parts of the country. [1] The guidelines for transporting, labeling, and storing dangerous biological materials are given in the decree "Procedures for the Handling of Infectious Materials" (passed in 2010) and described in more detail in a 2013 Estonian Health Board document titled "Transport of Infectious Materials", although these documents do not suggest that a specific courier system that must be used to transport laboratory specimens. [3, 4] In March 2020, it was reported in the Estonian media that Synlab, a private laboratory network, had a fleet of automobiles that was responsible for collecting COVID-19 samples from medical facilities across the country. The same article reported that representatives from Circle K (an international convenience store chain) and Rally Estonia (an annual motor racing event) had joined forces with Synlab to provide additional transportation support in six cities across the country. [5] No evidence could be found on the websites of the Estonian Health Board or the Ministry of Rural Affairs that 80% of the country is covered by these systems. [6, 7]

[1] Center of Food and Fermentation Technologies. 2016. "Väljaheite analüüside müügitehingu standardtingimused" ("Standards for the purchase of waste analyses"). [<http://tftak.eu/wp-content/uploads/2016/08/tingimusedEst.pdf>]. Accessed 2 September 2020.

[2] Omniva. "ERA". [<http://www.omniva.ee>] Accessed 2 September 2020.

[3] Estonian Ministry of Social Affairs. 2010. "Procedures for the Handling of Infectious Materials" ("Nakkusohtliku materjali käitlemise kord"). [<https://www.riigiteataja.ee/akt/640883?leiaKehtiv>] Accessed 2 September 2020.

[4] Estonian Health Board. 2013. "Transport of Infectious Materials" ("Nakkusohtliku materjali transportimine").

[http://www.terviseamet.ee/fileadmin/dok/Laborid/NH_labor/Nakkusohtliku_materjali_transport.pdf] Accessed 2 September 2020.

[5] Postimees. March 2020. "Virus tests to be transported to laboratories with the help of volunteers and entrepreneurs" ("Viiruseproovid jõuavad laborisse vabatahtlike ja ettevõtjate ühistööga").

[<https://www.postimees.ee/6936538/viiruseproovid-jouavad-laborisse-vabatahtlike-ja-ettevotjate-uhistooga>]. Accessed 2 September 2020.

[6] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 11 October 2020.

[7] Estonian Ministry of Rural Affairs. [<http://agri.ee>]. Accessed 11 October 2020.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence in Estonia of a plan to rapidly authorize/license laboratories to supplement the capacity of the national public health laboratory system during an outbreak. However, there is evidence that private laboratories are active in conducting tests for COVID-19. In March 2020, Prime Minister Jüri Ratas stated in an interview that the Government of Estonia had contracted the private laboratory networks Qvalitas, SYNLAB, and Medicum to supplement its testing capacity. [1] These networks are also mentioned on the Estonian Health Board's COVID-19 testing info portal. [2] However, there is no evidence that these agreements were made on the basis of an existing plan or mechanism. No further information was found on the websites of the Estonian Health Board or the Veterinary and Food Board. [3, 4]

[1] ERR.ee. March 2020. "Ratas: Government to release second economic relief package in the near future" ("Ratas: valitsus loob teise majandusliku leevenduspaketi lähitulevikus"). [<https://www.err.ee/1007107/ratas-valitsus-loob-teise-majandusliku-leevenduspaketi-lahitulevikus>]. Accessed 11 October 2020.

ДгД°Д°ДµÑ,Д%Д% Ñ◆Д°Д%Д%Д%Д%Д,Ñ#ДµÑ◆Д°Д,Ñ... Д%ДµÑ€"). [<https://rus.err.ee/1068593/ratas-v-blizhajshee-vremja-pravitelstvo-vystupit-so-vtorym-paketom-jekonomicheskikh-mer>]. Accessed 9 September 2020.

[2] Estonian Health Board. "Testing" ("Testimine"). [<https://www.terviseamet.ee/et/uuskoroonaviirus/testimine>]. Accessed 9 September 2020.

[3] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 3 September 2020.

[4] Estonian Ministry of Rural Affairs. [<http://agri.ee/en>]. Accessed 3 September 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

Yes, there is evidence of ongoing event-based surveillance and evidence that the data is being analyzed on a daily basis = 2,

Yes, there is evidence of ongoing event-based surveillance, but no evidence that the data are being analyzed on a daily basis

= 1, No = 0

Current Year Score: 0

No evidence could be found on the websites of the Estonian Health Board, the Ministry of Internal Affairs, the Rescue Board, the National Institute for Health Development, or the Ministry of Rural Affairs that ongoing event-based surveillance is being conducted or is able to be conducted in Estonia. [1, 2, 3, 4, 5] In accordance with the 2017 Emergency Act, the Estonian Health Board is responsible for assessing health-related risks that could lead to a national emergency. [6,7] However, there is no evidence that this risk assessment process involves ongoing event-based surveillance. In early 2020, prior to the first case of COVID-19 in Estonia (identified on February 27, 2020), the Estonian Health Board began to publish news articles about the virus and its potential spread to Estonia based on reports from abroad, indicating that some event-based surveillance was being conducted. However, this does not seem to have been part of a permanent operation. [8]

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 3 September 2020.

[2] Estonian Ministry of Internal Affairs. [<https://www.siseministeerium.ee>]. Accessed 3 September 2020.

[3] Estonian Rescue Board. "Home". [<http://www.rescue.ee>]. Accessed 3 September 2020.

[4] National Institute for Health Development. [<http://www.tai.ee>]. Accessed 3 September 2020.

[5] Estonian Ministry of Rural Affairs. [<http://agri.ee/en>]. Accessed 3 September 2020.

[6] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus"). [<https://www.riigiteataja.ee/akt/117052020003>]. Accessed 3 September 2020.

[7] Government of Estonia. 2020. "List of events that could lead to an emergency and that are subject to a risk assessment, and the authorities in charge of preparing an emergency risk assessment" ("Loetelu sündmustest, mis võivad põhjustada hädaolukorra ja mille kohta koostatakse riskianalüüs, ning hädaolukorra riskianalüüsi koostamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/128062017033?leiaKehtiv>]. Accessed 3 September 2020.

[8] Estonian Health Board. January 2020. "Travel plans may need to be reconsidered in light of the nCOV outbreak" ("Uue koroonaviiruse leviku valguses tuleks oma reisiplaanid üle vaadata"). [<https://www.terviseamet.ee/et/uudised/uee-koroonaviiruse-leviku-valguses-tuleks-oma-reisiplaanid-ule-vaadata>]. Accessed 3 September 2020.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

No evidence is available on the World Health Organization's website or on the news page for Estonia's Health Board that the country has reported a public health emergencies of international concern (PHEIC) over the last two years. [1, 2, 3, 4, 5] The first case of COVID-19 in Estonia was identified at the end of February 2020; a nationwide state of emergency was declared on March 12, 2020. [6, 7] Estonia did not declare a PHEIC in relation to COVID-19.

[1] World Health Organization (WHO). "Emergency preparedness, response (2019)".

[<http://www.who.int/csr/don/archive/year/2019/en>]. Accessed 3 September 2020.

[2] World Health Organization (WHO). "Emergency preparedness, response (2018)".

[<http://www.who.int/csr/don/archive/year/2018/en>]. Accessed 3 September 2020.

[3] World Health Organization (WHO). "Emergency preparedness, response (Estonia)".

[<http://www.who.int/csr/don/archive/country/est/en>]. Accessed 3 September 2020.

[4] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 3 September 2020.

[5] World Health Organization. "Estonia: News".

[http://www.euro.who.int/en/countries/estonia/news/news/news?root_node_selection=73341]. Accessed 3 September 2020.

[6] Estonian Health Board. February 2020. "First COVID-19 case diagnosed in Estonia" ("Eestis diagnoositi esimene COVID-19 haigusjuhtum"). [<https://www.terviseamet.ee/et/uudised/eestis-diagnoositi-esimene-covid-19-haigusjuhtum>]. Accessed 3 September 2020.

[7] Estonian Government. March 2020. "Government declares state of emergency through 1 May in Estonia" ("Valitsus kuulutas Eestis v  lja eriolukorra 1. maini"). [<https://www.valitsus.ee/et/uudised/valitsus-kuulutas-eestis-valja-eriolukorra-1-maini>]. Accessed 3 September 2020.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is an electronic surveillance system in place at the national level in Estonia.

The Estonian government uses the Estonian Communicable Diseases Registry (ECDR) to conduct surveillance of infectious diseases at the national level. There is no evidence of a separate sub-national reporting system on the websites of the Estonian Health Board or the National Institute for Health Development, but all healthcare providers in Estonia are able to use the ECDR, an online database and reporting system, to report instances of infectious diseases. [1, 2, 3]. The use of the ECDR is mandated by the Communicable Diseases Prevention and Control Act (passed in 2003 and last revised in 2020); the Government of Estonia also provides a list of contagious diseases that must be reported in the Register. [4, 5, 6]

[1] Estonian Health Board. "Communicable Diseases Registry". [<https://www.nakis.ee/>]. Accessed 3 September 2020.

[2] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[3] National Institute for Health Development. [<http://www.tai.ee>] Accessed 2 September 2020.

[4] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja t  µrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 2 September 2020.

[5] Government of Estonia. 2020. "Statute on the Communicable Diseases Registry" ("Nakkushaiguste registri p  him  stus"). [<https://www.riigiteataja.ee/akt/113032019242?leiaKehtiv>]. Accessed 3 September 2020.

[6] Government of Estonia. 2020. "Procedures for the Reporting of Illnesses, Suspected Illnesses, and Risk Factors for Illnesses and a List of Data which must be Submitted Along with the Personal Information of the Subject of the Data" ("Nakkushaiguste ja nakkushaiguskahtluse esinemise ning haigestumise ohutegurite kohta teabe edastamise kord ja edastatavate andmete koosseis koos andmesubjekti identifitseerivate isikuandmetega").

[<https://www.riigiteataja.ee/akt/113032019241?leiaKehtiv>]. Accessed 2 September 2020.

2.3.2b

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

Yes = 1, No = 0

Current Year Score: 1

The Estonian Communicable Diseases Registry (ECDR) collects ongoing and real-time data. [1]

Laboratories must make a new entry in the Registry within 24 hours after confirming a positive test result; this information then goes directly to the Estonian Health Board. [2, 3] While the Health Board only monitors the system from 8:00-17:00 on business days, it can be accessed 24/7, and workers are notified instantly in the event of a serious outbreak. [4]

[1] Estonian Health Board. "Instructions for Using the Estonian Communicable Diseases Registry" ("Nakkushaiguste infos  steemi kasutusjuhend"). [https://www.terviseamet.ee/sites/default/files/content-editor/Nakkushaigused/NAKIS_dokumendid/NAKIS-Kasutusjuhend.pdf]. Accessed 3 September 2020.

[2] Estonian Health Board. "General overview of the Estonian Communicable Diseases Registry" ("Nakkushaiguste register: infos  steemi   ldkirjeldus"). [<https://www.riha.ee/Infos%C3%BCsteemid/Vaata/nhr>]. Accessed 3 September 2020.

[3] Government of Estonia. 2020. "Procedures for the Reporting of Illnesses, Suspected Illnesses, and Risk Factors for Illnesses and a List of Data which must be Submitted Along with the Personal Information of the Subject of the Data" ("Nakkushaiguste ja nakkushaiguskahtluse esinemise ning haigestumise ohutegurite kohta teabe edastamise kord ja edastatavate andmete koosseis koos andmesubjekti identifitseerivate isikuandmetega").

[<https://www.riigiteataja.ee/akt/113032019241?leiaKehtiv>]. Accessed 2 September 2020.

[4] Estonian Information System Authority. "Information System: Communicable Diseases Registry" ("Infos  steem: Nakkushaiguste register"). [https://vana.riha.ee/riha/main/inf/nakkushaiguste_register]. Accessed 3 September 2020.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 2

Electronic health records are commonly in use in Estonia.

Ninety-nine percent (99%) of health data in Estonia is digitized, 99% of prescriptions are digital, and 100% of billing in

healthcare takes place electronically. [1] According to the World Health Organization, Estonia was "the first country in the world to fully implement [an electronic health record system] nationwide". [2] Use of the state's electronic database, the Health Information System, is mandatory under the Estonian Health Services Organization Act; under this same act, all patients have the right to view their health information on the electronic patient portal. [3, 4]

[1] e-Estonia. "Healthcare". [https://e-estonia.com/solutions/healthcare/e-health-record]. Accessed 3 September 2020.

[2] World Health Organization (WHO). 2016. "E-health in practice".

[http://www.euro.who.int/en/countries/estonia/news/news/016/03/e-health-in-practice]. Accessed 3 September 2020.

[3] Estonian Parliament. 2020. "Health Services Organization Act" ("Tervishoiuteenuste korraldamise seadus").

[https://www.riigiteataja.ee/akt/126022015015?leiaKehtiv]. Accessed 3 September 2020.

[4] Health Information System Patient Portal.

[https://www.digilugu.ee/login;jsessionid=433053CE596BEDDF24CA63021BCCDE8C?locale=en]. Accessed 3 September 2020.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 1

Public healthcare in Estonia is provided by the Ministry of Social Affairs and its various subordinate agencies, including the Estonian Health Board, which by law have access to the entire Health Information System (HIS). [1, 2, 3, 4] As the "chief processor" of the HIS, the Ministry of Social Affairs has the right to grant another person or agency the ability to process data located in the System. [1, 2] The Health Services Organization Act (published in 2016 and last updated in 2020) states that health records are accessible at state datacenters in a de-identified form to "support business processes, develop policy, assess impact and respond to requests for information." [1]

[1] Government of Estonia. 2020. "Statute on the Health Information System" ("Tervise infosüsteemi pühimäärus"). [https://www.riigiteataja.ee/akt/106122016011?leiaKehtiv]. Accessed 3 September 2020.

[2] Estonian Parliament. 2019. "Personal Data Protection Act" ("Isikuandmete kaitse seadus").

[https://www.riigiteataja.ee/akt/104012019011]. Accessed 3 September 2020.

[3] Estonian Hospitals Association. "Healthcare in Estonia". [https://haiglateliit.ee/en/healthcare-in-estonia]. Accessed 3 September 2020.

[4] Estonian Ministry of Social Affairs. "E-Health". [https://www.sm.ee/en/e-health]. Accessed 3 September 2020.

2.4.1c

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

Yes = 1, No = 0

Current Year Score: 1

The data in Estonia's Health Information System (HIS) conform with at least the LOINC, HL7, SNOMED, SOAP, CDA, and ISO OID standardization systems, which concern the way in which health data are communicated among speakers of different languages. [1, 2] The Estonian Center for Health and Well-Being Infosystems is responsible for managing and ensuring compliance with these standards. [3]

[1] Estonian Information System Authority. "Information system: Health Information System" ("Infosüsteem: Tervise infosüsteem"). [https://vana.riha.ee/riha/main/inf/tervise_infosusteem]. Accessed 3 September 2020.

[2] Estonian eHealth Foundation. "Written correspondence" ("Sõnumivahetus"). [<http://www.e-tervis.ee/index.php/et/uudised/uudiste-arhiiv/48-estikeelsed-kategooriad/sihtasutus/tervise-infosysteem/250-sonumivahetus>]. Accessed 3 September 2020.

[3] Center for Health and Well-Being Infosystems. "Standards and classification publishing center" ("Standartide ja klassifikaatorite publitseerimiskeskus"). [<http://pub.e-tervis.ee/classifications>]. Accessed 3 September 2020.

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

2.4.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is a mechanism for the Estonian Health Board and the Veterinary and Food Board (VFB) to share data about the epidemiology of zoonotic diseases, but it appears only to be used once yearly [1, 2]

The Health Board is required to provide the VFB with a report on the results of epidemiological investigations of food-borne disease outbreaks conducted during the previous calendar year. [2] The Health Board must also notify the VFB when a human is diagnosed with a zoonotic disease. [2] Section 29(3);2 of the Infectious Animal Disease Control Act (passed in 1999 and last updated in 2019) also states that the Health Board and the VFB must work together to prevent the spread of zoonotic diseases but it is not entirely clear what this cooperation should involve. [1]

No further evidence of an established mechanism for data sharing between the Estonian Health Board and Veterinary and Food Board could be found on the websites of the Health Board, Veterinary and Food Board, or Ministry of the Environment. [3, 4, 5]

[1] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomatauditõrje seadus"). [<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[2] Estonian Veterinary and Food Board. 2019. "2019 Report on Zoonoses" ("Zoonooside Aruanne 2019"). [https://vet.agri.ee/sites/default/files/Toit/Aruanded/eesti_zoonooside_aruanne_2019.pdf]. Accessed 3 September 2020.

[3] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 20 October 2020.

[4] Estonian Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 20 October 2020.

[5] Estonian Ministry of the Environment. [<http://envir.ee>]. Accessed 20 October 2020.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

Estonia does not make de-identified aggregate surveillance data on infectious diseases publicly available online on a weekly basis.

During influenza season, the Estonian Health Board publishes weekly "flu blogs" with the number of new cases and their regional distribution. [1] However, this is not provided all year. [1] The country's main publication of surveillance data on infectious diseases takes the form of a monthly "Communicable Disease Bulletin" from the Estonian Health Board, which provides the number of cases of the most problematic infectious diseases during any given month, alongside the same number for the same month of the previous year and the incidence rate per 100,000 people. [2, 3, 4] Diseases included in these bulletins include typhoid fever, salmonellosis, brucellosis, influenza and a wide variety of other infectious diseases; in January 2020, the Health Board began to include COVID-19 as part of its monthly bulletin. [2] The National Institute for Health Development also has a searchable database of the incidence rates of select communicable diseases for specific populations. [5] There is no evidence of year-round weekly or more frequent reporting on the websites of the Estonian Health Board or the National Institute for Health Development. [6, 7]

[1] Estonian Health Board. February 2021. "Flu blog, week 4: No new flu cases" ("Gripiblogi, 4. nädal: uusi gripijuhtumeid ei lisandunud"). [<https://www.terviseamet.ee/et/uudised/gripiblogi-4-nadal-uusi-gripijuhtumeid-ei-lisandunud>]. Accessed 1 April 2021.

[2] Estonian Health Board. 2021. "Communicable Disease Bulletin". [<https://www.terviseamet.ee/en/communicable-diseases/communicable-disease-bulletins>]. Accessed 1 April 2021.

[3] Estonian Health Board. 2020. "Nakkushaigustesse haigestumine" ("Incidence rates of communicable diseases").

[<https://www.terviseamet.ee/et/nakkushaigused-menuu/tervishoiutootajale/nakkushaigustesse-haigestumine>]. Accessed 3 September 2020.

[4] Estonian Health Board. 2020. "July 2020: Estonian Communicable Disease Bulletin".

[https://www.terviseamet.ee/sites/default/files/Nakkushaigused/Haigestumine/EEpiR/eepir_july_2020.pdf]. Accessed 3 September 2020.

[5] National Institute for Health Development. "Health Statistics and Health Research Database".

[<https://www.tai.ee/en/health-data/health-statistics-and-health-research-database>]. Accessed 3 September 2020.

[6] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 20 October 2020.

[7] National Institute for Health Development. [<https://www.tai.ee>]. Accessed 20 October 2020.

2.4.3b

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

Yes = 1, No = 0

Current Year Score: 1

De-identified COVID-19 surveillance data is available via daily reports on the website of the Estonian Health Board.

Since the end of February 2020, the Estonian Health Board has posted daily blog entries containing de-identified COVID-19 surveillance data, as well as general advice for preventing the spread of the virus. [1]

Additionally, the Health Board maintains a COVID-19 dashboard that is refreshed daily via a data feed from the Estonian Health Information System. This dashboard displays a variety of regional and nation-level statistics about the virus. [2]

[1] Estonian Health Board. "News" ("Uudised"). [<https://www.terviseamet.ee/et/uudised>]. Accessed 9 September 2020.

[2] Estonian Health Board. "Coronavirus database" ("Koroonaviiruse andmestik").

[<https://www.terviseamet.ee/et/koroonaviirus/koroonaviiruse-andmestik>]. Accessed 9 September 2020.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1, No = 0

Current Year Score: 1

The confidentiality of identifiable health information is safeguarded by law in Estonia.

While no evidence of a law dedicated specifically to safeguarding confidential health information could be found in the database of Estonian legislation, on the Estonian Health Board's website, or on the website of the National Institute for Health Development, institutions that possess such data must process it in accordance with the Estonian Personal Data Protection Act (passed in 2007 and updated in 2019) and the Public Information Act (passed in 2000 and updated in 2019). [1, 2, 3, 4, 5] These laws establish guidelines for how identifiable information must be processed/redacted before being released to the public or used for scientific or statistical purposes, as well as how this information may be shared between institutions.

According to the Personal Data Protection Act, absent the consent of the individual in question, personal data can only be made available in a deidentified form or using pseudonyms for the purpose of research and statistics; additionally, identifying information must be retained "only until this is necessary for achievement of the purpose for which the personal data is processed". [5] The Ministry of Social Affairs has a landing page explaining how patient data is protected in accordance with the Personal Data Protection Act. [6]

In addition, there is a specific list of diseases (including, for example, E. coli, tuberculosis, and malaria) that require healthcare providers to submit identifying information along with the notification of diagnosis to the Estonian Health Board. [7]

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[2] Riigi Teataja (database of Estonian legislation and regulations). [<http://www.riigiteataja.ee>]. Accessed 3 September 2020.

[3] National Institute for Health Development. [<http://www.tai.ee>]. Accessed 3 September 2020.

[4] Estonian Parliament. 2019. "Public Information Act" ("Avaliku teabe seadus"). [<https://www.riigiteataja.ee/akt/184506?leiaKehtiv>]. Accessed 3 September 2020.

[5] Estonian Parliament. 2019. "Personal Data Protection Act" ("Isikuandmete kaitse seadus"). [<https://www.riigiteataja.ee/akt/104012019011>]. Accessed 3 September 2020.

[6] Estonian Ministry of Social Affairs. "Data Protection" ("Andmekaitse"). [<https://www.sm.ee/et/andmekaitse>]. Accessed 7 September 2020.

[7] Government of Estonia. 2020. "Procedures for the Reporting of Illnesses, Suspected Illnesses, and Risk Factors for Illnesses and a List of Data which must be Submitted Along with the Personal Information of the Subject of the Data" ("Nakkushaiguste ja nakkushaiguskahtluse esinemise ning haigestumise ohutegurite kohta teabe edastamise kord ja edastatavate andmete koosseis koos andmesubjekti identifitseerivate isikuandmetega").

[<https://www.riigiteataja.ee/akt/113032019241?leiaKehtiv>]. Accessed 2 September 2020.

2.4.4b

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

Yes = 1, No = 0

Current Year Score: 1

There is public evidence that the laws, regulations, or guidelines safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, include mention of protections from cyber attacks.

The confidentiality of identifiable health information for individuals is safeguarded by the EU's General Data Protection Regulation (GDPR), which came into force in May 2018. GDPR contains stipulations around network and information security, including a requirement that data held by state authorities must be overseen by a dedicated data protection officer who is proficient in dealing with cyber attacks and a requirement to inform all affected individuals within 72 hours of discovering a data breach. [1]

There is no specific mention of protecting identifiable health data from cyber attacks in Estonia's Communicable Diseases Prevention and Control Act (passed in 2003 and last revised in 2020), Cybersecurity Act (passed in 2018), or the Public Information Act (passed in 2000 and revised in 2019). [2, 3, 4] Identifiable health information is covered under the Estonian Personal Data Protection Act and the Estonian Public Information Act, which do not make any mention of cybersecurity. [4,5]

However, a 2020 cybersecurity report by the Estonian Information System Authority mentions that, in light of incidents involving "disruptive ransomware attacks against family clinics" in 2017-2019, efforts are underway to strengthen the security of Estonia's e-health infrastructure, including more stringent requirements and cybersecurity training for family physicians. [6]

[1] Official Journal of the European Union. 27 April 2016. "REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)". [<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>]. Accessed 11 October 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 11 October 2020.

[3] Estonian Parliament. 2018. "Cybersecurity Act" ("Küberturvalisuse seadus"). [<https://www.riigiteataja.ee/akt/122052018001>]. Accessed 11 October 2020.

[4] Estonian Parliament. 2019. "Public Information Act" ("Avaliku teabe seadus"). [<https://www.riigiteataja.ee/akt/184506?leiaKehtiv>]. Accessed 11 October 2020.

[5] Estonian Parliament. 2019. "Personal Data Protection Act" ("Isikuandmete kaitse seadus"). [<https://www.riigiteataja.ee/akt/104012019011>]. Accessed 11 October 2020.

[6] Estonian Information System Authority. 2020. "Cybersecurity in Estonia 2020". [https://www.ria.ee/sites/default/files/content-editors/RIA/cyber_security_in_estonia_2020_0.pdf]. Accessed 11 October 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 2

Estonia has made commitments via legislation and cooperative agreements to share surveillance data with other countries during public health emergencies for more than one disease.

The Estonian Health Board, which is designated under Estonian law as Estonia's national competent health authority, is encouraged by section 9 of EU Decision No 1082/2013/EU from 2013 to use the EU's Early Warning and Response System (EWRS) to share data about any public health emergencies that may pose a cross-border threat. [1] According to Chapter III, Article 6.3 of that Decision, "the national competent authorities referred to in paragraph 2 shall communicate the following information to the participating authorities of the epidemiological surveillance network: [. . .] comparable and compatible data and information in relation to the epidemiological surveillance of communicable diseases". [1]

It is also recommended (in section 9 of Decision No 1082/2013/EU and by Estonia's Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2020) to consult with other EU member states and the European Commission before responding to such emergencies. [1, 2]

[1] Estonian Parliament. 2003. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 1 April 2021.

[2] European Union (EU). 2013 "Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC".

[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf]. Accessed 3 September 2020.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no publicly available evidence of a system in place to provide support at the sub-national level for contact tracing but only during active emergencies in Estonia.

An annex to the Estonian Communicable Disease Prevention Act titled "Requirements for the Prevention of Communicable

Diseases" (adopted in 2003 and updated in 2020) lays out specific guidelines for how and for which diseases contact tracing is to be conducted, and what actions should be taken with regards to close contacts of infected individuals. [1] However, there is no mention of a mechanism or system to provide support for contact tracing at the sub-national level in the event of a public health emergency.

In August 2020, the Estonian Health Board/Ministry of Social Affairs launched a contact tracing mobile phone application called Hoia (Estonian for "Protect"). The app notifies individuals who have been exposed to a known COVID-19 case and is available in Estonian, Russian, and English. [2] The Ministry of Social Affairs has stated that this app is meant to supplement the Estonian Health Board's own COVID-19 contact tracing work (which does not appear to be based on a pre-existing protocol or regulation). [3] There is no further evidence of a plan to provide contact tracing support at the sub-national level on the website of the Estonian Health Board. [4]

[1] Estonian Ministry of Social Affairs. 2020. "Requirements for the Prevention of Communicable Diseases" ("Nakkushaiguste tõrje nõuded"). [<https://www.riigiteataja.ee/akt/641100?leiaKehtiv>]. Accessed 9 September 2020.

[2] HOIA app homepage. [<https://hoia.me>]. Accessed 9 September 2020.

[3] Estonian Ministry of Social Affairs. August 2020. "Coronavirus prevention app HOIA now available for download on smartphones" ("Täna saad laadida nutitelefonile koroonaviiruse levikut piirava mobiilirakenduse HOIA"). [<https://www.sm.ee/et/uudised/tanasest-saab-laadida-nutitelefonile-koroonaviiruse-levikut-piirava-mobiilirakenduse-hoia>]. Accessed 9 September 2020.

[4] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 3 September 2020.

2.5.1b

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

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

Current Year Score: 1

Estonia provides wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, including economic support, but not medical attention.

According to the Estonian Communicable Disease Prevention and Control Act (passed in 2003 and last revised in 2020) and an annex titled "Requirements for the Prevention of Communicable Diseases" (adopted in 2003 and updated in 2020), patients with certain diseases (e.g., COVID-19, Ebola, severe cases of the flu) may be required by medical authorities to undergo self-isolation or, in some cases, hospitalization. [1, 2] The Estonian Health Insurance Fund has established that close contacts of individuals infected with COVID-19 may apply for paid sick leave, which is subject to approval by a doctor. [3]

There is no evidence of special provisions for medical attention for those required to self-isolate. The regulations establishing the self-isolation requirements do not address any requirements for medical attention, and further information could not be located on the website of the Estonian Health Board. [4]

[1] Estonian Parliament. 2018. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[2] Estonian Ministry of Social Affairs. 2020. "Requirements for the Prevention of Communicable Diseases" ("Nakkushaiguste tõrje nõuded"). [<https://www.riigiteataja.ee/akt/641100?leiaKehtiv>]. Accessed 9 September 2020.

[3] Government of Estonia. "Health Insurance Fund services, payment of benefits and pensions" ("TÄHTSUKASSA teenused,

tÄ¶Ä¶hÄ¶vitise maksmine, pensionid"). [<https://www.kriis.ee/et/tootukassa-teenused-toohuvitise-maksmine-pensionid>]. Accessed 9 September 2020.

[4] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 9 September 2020.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 1

Estonia makes de-identified data on contact tracing efforts for COVID-19 available via daily reports.

Since the end of February 2020, the Estonian Health Board has posted daily blog entries containing de-identified COVID-19 surveillance data, as well as general advice for preventing the spread of the virus. These blog entries also include the number of new cases as a result of close contact with an infected person. [1] For example, on September 1, 2020, it was reported that there were four new cases in the LÄ¶Ä¶ne-Virumaa region that had resulted from close contact with one infected person. [2]

[1] Estonian Health Board. "News" ("Uudised"). [<http://terviseamet.ee/et/uudised>]. Accessed 9 September 2020.

[2] Estonian Health Board. September 2020. "COVID-19 blog, September 1: 20 more positive tests today" ("COVID-19 blogi, 1. september: Ä¶Ä¶pÄ¶evaga lisandus 20 positiivset testi"). [<https://www.terviseamet.ee/et/uudised/covid-19-blogi-1-september-oopaevaga-lisandus-20-positiivset-testi>]. Accessed 9 September 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is insufficient evidence of a plan to trace or quarantine the contacts of international travelers in Estonia for future or active public health emergencies.

Per the decree "Prevention of dangerous communicable diseases at the Estonian state border," adopted in 2003, the Estonian Health Board is required to ensure that border authorities are able to conduct emergency sanitary operations at any time. [1] The Health Board must also regularly inspect border crossings to ensure their readiness to enact anti-epidemic measures. Border authorities must also notify public health authorities upon the entry of a vessel carrying an individual with symptoms of a particularly infectious disease or goods that may be infected. [1] Upon notification, Health Board representatives are required to arrive at the border point to inspect the vehicle, clarify the travel plans of the individual(s) in question, and notify the Emergency Response Center, if necessary, and identify an isolation area for the individual and their personal belongings. This decree also states that the Health Board must direct such individuals to a general practitioner along with a special referral letter. [1] However, there is no information in this decree or on the websites of the Estonian Health

Board, Police and Border Guard, or the National Institute for Health Development suggesting that there is a protocol for identifying and quarantining contacts of individuals with suspected communicable disease cases for active or future public health emergencies. [2, 3, 4]

[1] Estonian Government. 2019. "Prevention of dangerous communicable diseases at the Estonian state border" ("Eesti riigipiiril eriti ohtlike nakkushaiguste leviku tõkestamise kord ja tingimused").

[https://www.riigiteataja.ee/akt/117042019013]. Accessed 9 September 2020.

[2] Estonian Health Board. [http://terviseamet.ee]. Accessed 11 October 2020.

[3] Estonian Police and Border Guard. [http://politsei.ee]. Accessed 11 October 2020.

[4] National Institute for Health Development. [http://tai.ee]. Accessed 11 October 2020.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

- Applied epidemiology training program (such as FETP) is available in country

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

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

Current Year Score: 1

Applied epidemiology training is available in Estonia, and resources are provided by the European Centre for Disease Control for Estonians to participate in applied epidemiology programs abroad.

Estonian nationals' participation in FETP programmes abroad is funded through the European Centre for Disease Control's EPIET/EUPHEM fellowship. [1] Through EPIET/EUPHEM, foreign nationals can also travel to Estonia to participate in FETP programmes. The training programme provided by the Health Board at one of its 15 locations nationwide is focused on communicable disease epidemiology. Only one EPIET fellow has been trained in Estonia, and the country is unavailable as a destination for the 2021 fellow cohort. [2]

Additionally, the Estonian University of Life Sciences offers a course in applied epidemiology. [3]

[1] TEPHINET. "European Programme for Intervention Epidemiology Training (EPIET) and the European Programme for Public Health Microbiology Training (EUPHEM)". [https://www.tephinet.org/training-programs/european-programme-for-intervention-epidemiology-training-epiet-and-the-european]. Accessed 3 September 2020.

[2] European Centre for Disease Prevention and Control. "Terviseamet". [https://ecdc.europa.eu/en/terviseamet]. Accessed 3 September 2020.

[3] Estonian University of Life Sciences (Eesti Maa- ja Loomakasvatuse Ülikool). "Basic information, 'Applied epidemiology and risk analysis in veterinary public health'" ("Äärmiselt oluline ja riski hindamine veterinaarses rahvatervishoius"). [https://ois.emu.ee/rwservlet?oa_aine_info.rdf+1000740+PDF+0+application/pdf]. Accessed 3

September 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

Estonian animal health professionals can participate in the EPIET programme, which is explicitly inclusive of animal health professionals. [1]

However, there is no evidence that the European Centre for Disease Prevention and Control-sponsored field epidemiology training within Estonia covers animal health. [2, 3] Although the EPIET/EUPHEM programme includes veterinarians, the training offered by the Estonian Health Board as part of the EPIET/EUPHEM programme seems to focus only on communicable diseases in humans. [2] The Veterinary and Food Board has the primary responsibility for studying animal diseases but does not appear to offer any training programs. [3]

Additionally, while there is a course at the Estonian University of Life Sciences on applied epidemiology, there is no evidence of a full field-based training programme in veterinary epidemiology. [4, 5]

[1] European Centre for Disease Prevention and Control. "Call for ECDC Fellowship Programme (EPIET and EUPHEM paths)". [<https://ecdc.europa.eu/en/about-us/work-us/call-ecdc-fellowship-programme-epiet-and-euphem-paths>]. Accessed 3 September 2020.

[2] European Centre for Disease Prevention and Control. "Terviseamet". [<https://ecdc.europa.eu/en/terviseamet>]. Accessed 3 September 2020.

[3] Veterinary and Food Board. [<http://www.vet.agri.ee>]. Accessed 3 September 2020.

[4] Estonian University of Life Sciences (Eesti Maa- ja Loomulikool). "Basic information, 'Applied epidemiology and risk analysis in veterinary public health'" ("Äppeaine Äldandmed, 'Rakendusepidemioloogia ja riski hindamine veterinaarses rahvatervishoius"). [https://ois.emu.ee/rwservlet?oa_aine_info.rdf+1000740+PDF+0+application/pdf]. Accessed 3 September 2020.

[5] Estonian University of Life Sciences. "Studies". [<https://www.emu.ee/en/studies>]. Accessed 3 September 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

Estonia has an overarching national public health emergency response plan addressing planning for multiple communicable diseases with pandemic potential, and the plan is publicly available.

The steps to be taken during public health emergencies involving outbreaks of communicable diseases are addressed in the Emergency Act, passed in 2017 and revised in 2020 (which concerns what government agencies should take which actions during natural or man-made disasters), the Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2020 (which governs infectious disease control and epidemic response in humans), and the Infectious Animal Disease Control Act, passed in 2003 and revised in 2020 (which governs the control of zoonotic diseases and response to zoonotic disease outbreaks). [1, 2, 3]

During serious outbreaks of communicable diseases, the Estonian Health Board, the Veterinary and Food Board, the Estonian Rescue Board, and the Ministry of Internal Affairs are responsible for drawing up and executing a crisis management plan. [1, 4, 5]

[1] Estonian Parliament. 2020. "Emergency Act" ("Häädalukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[3] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomatauditõrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[4] Government of Estonia. 2020. "List of events that may constitute an emergency and which require the compilation of a risk analysis, and the institutions responsible for compiling the risk analysis" ("Loetelu sündmustest, mis võivad põhjustada häädalukorra ja mille kohta koostatakse riskianalüüsi, ning häädalukorra riskianalüüsi koostamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/128062017033?leiaKehtiv>]. Accessed 3 September 2020.

[5] Estonian Ministry of Internal Affairs. 2017. "Requirements and procedures for compiling an emergency response plan" ("Häädalukorra lahendamise plaani nõuded ja koostamise kord"). [<https://www.riigiteataja.ee/akt/128062017007>]. Accessed 3 September 2020.

3.1.1b

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

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

Current Year Score: 1

Estonia's overarching emergency plans have been updated in the last three years.

The Emergency Act, passed in 2017 and revised in 2020 (which concerns what government agencies should take which actions during natural or man-made disasters), the Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2020 (which governs infectious disease control and epidemic response in humans), and the Infectious Animal Disease Control Act, passed in 2003 and revised in 2020 (which governs the control of zoonotic diseases and response to zoonotic disease outbreaks) have all been updated within the last three years. [1, 2, 3]

[1] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[3] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomatauditõrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

3.1.1c

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

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

Current Year Score: 1

Estonia's overarching public health emergency response legislation includes considerations for pediatric populations, but not other vulnerable groups.

The Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2020 (which governs infectious disease control and epidemic response in humans) stipulates that local divisions of the Estonian Health Board may require that schools and daycare facilities in their districts be closed in order to prevent the spread of illnesses. [2] It also notes that the directors of schools and daycares can ask permission from the Health Board to temporarily close their facilities during disease outbreaks. [2]

None of the relevant emergency response legislation makes specific references to other vulnerable groups, nor was any evidence found of a plan specifically addressing how vulnerable populations should be treated during emergencies. [1, 2, 3, 4, 5, 6]

[1] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[3] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomatauditõrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[4] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[5] Estonian Ministry of Internal Affairs. [<https://www.siseministerium.ee>]. Accessed 3 September 2020.

[6] Veterinary and Food Board. [<http://www.vet.agri.ee>]. Accessed 3 September 2020.

3.1.1d

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

Yes = 1, No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Estonia has specific mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. No evidence of this could be found in the Emergency Act, passed in 2017 and revised in 2020 (which concerns what government agencies should take which actions during natural or man-made disasters), the Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2020 (which governs infectious disease control and epidemic response in humans), and the Infectious Animal Disease Control Act, passed in 2003 and revised in 2020 (which governs the control of zoonotic diseases and response to zoonotic disease outbreaks) of an established mechanism for involving the private sector in the management of disease outbreaks. [1, 2, 3] The Estonian Health Board, the Veterinary and Food Board, and the Ministry of Internal Affairs also give no indication of such a mechanism. [4, 5, 6] There is evidence of private sector participation in Estonia's COVID-19 response. For example, in March 2020, it was reported in the Estonian media that Synlab, a private laboratory network, had a fleet of automobiles that was responsible for collecting COVID-19 samples from medical facilities across the country. The same article reported that representatives from Circle K (an international convenience store chain) and Rally Estonia (an annual motor racing event) had joined forces with Synlab to provide additional transportation support in six cities across the country. [7] However, there is insufficient evidence this participation took place through an established mechanism of collaboration with the government.

[1] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[3] Estonian Parliament. 2019. "Infectious Animal Disease Control Act" ("Loomatauditõrje seadus").

[<https://www.riigiteataja.ee/akt/128122017024?leiaKehtiv>]. Accessed 2 September 2020.

[4] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[5] Estonian Ministry of Internal Affairs. "Home". [<https://www.siseministeerium.ee>]. Accessed 3 September 2020.

[6] Veterinary and Food Board. "VFB in General". [<http://www.vet.agri.ee>]. Accessed 3 September 2020.

[7] Postimees. March 2020. "Virus tests to be transported to laboratories with the help of volunteers and entrepreneurs" ("Viiruseproovid jõuavad laborisse vabatahtlike ja ettevõtjate ühistööga").

[<https://www.postimees.ee/6936538/viiruseproovid-jouavad-laborisse-vabatahtlike-ja-ettevotjate-uhistooga>]. Accessed 2

September 2020.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 2

There is a comprehensive plan to implement non-pharmaceutical interventions during an epidemic or pandemic in Estonia for more than one disease.

Section 28(2) of Estonia's Communicable Diseases Prevention and Control Act, passed in 2003 and last revised in 2021, states that local Health Board authorities may implement measures such as the temporary closure of schools and care facilities, expanded sanitation measures, and required testing during any public health emergency, although no elaboration is given as to when and how exactly these measures should be implemented. [1] However, this act explicitly applies for all infectious diseases, per Article 2. [1]

In March 2020, the Estonian Government declared a state of emergency and a number of non-pharmaceutical interventions to control the spread of COVID-19. These included prohibiting all public events, requiring schools to switch to distance learning, closing all museums and movie theaters, and limiting access to nursing homes, hospitals, and penitentiaries. [2]

[1] Estonian Parliament. 2003. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 1 April 2021.

[2] Government of Estonia. March 2020. "Government declares state of emergency in Estonia through 1 May" ("Valitsus kuulutas Eestis välja eriolukorra 1. maini"). [<https://www.valitsus.ee/et/uudised/valitsus-kuulutas-eestis-valja-eriolukorra-1-maini>]. Accessed 3 September 2020.

[3] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 12 September 2020.

[4] Estonian Emergency Response Centre. [<http://112.ee>]. Accessed 12 September 2020.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?

- Is there evidence that the country has activated their national emergency response plan for an infectious disease outbreak in the past year?

- Is there evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year?

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

Current Year Score: 1

Estonia has activated its national emergency response plan for an infectious disease outbreak within the past year; however, there is no evidence that Estonia has participated in a biological threat-focused exercise over the past year.

In March 2020, a state of emergency was declared in Estonia to contain the spread of COVID-19. In accordance with Estonia's Emergency Act, passed in 2017 and revised in 2020, the Government of Estonia introduced a number of restrictions, including the prohibition of all public events and the closure of movie theaters, night clubs, sporting events, and a variety of other non-essential institutions. [1, 2] However, no evidence of a biological threat-focused exercise conducted during the past year could be found on the World Health Organization's website or the websites of the Estonian Health Board, the Estonian Ministry of Rural Affairs, or the National Institute for Health Development (a government-funded agency that does research on human health issues). [3, 4, 5, 6, 7, 8, 9, 10]

[1] Government of Estonia. March 2020. "Application of measures of emergency situation".

[<https://www.riigiteataja.ee/en/eli/517032020005/consolide>]. Accessed 3 September 2020.

[2] Government of Estonia. March 2020. "Government declares state of emergency in Estonia through 1 May" ("Valitsus kuulutas Eestis välja eriolukorra 1. maini"). [<https://www.valitsus.ee/et/uudised/valitsus-kuulutas-eestis-valja-eriolukorra-1-maini>]. Accessed 3 September 2020.

[3] World Health Organization (WHO). "After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 3 September 2020.

[4] World Health Organization (WHO). "WHO/Europe: Estonia". [<http://www.euro.who.int/en/countries/estonia>]. Accessed 3 September 2020.

[5] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[6] National Institute for Health Development. [<http://www.tai.ee>]. Accessed 3 September 2020.

[7] World Health Organization (WHO). "WHO/Europe". [<http://www.euro.who.int/en/home>]. Accessed 3 September 2020.

[8] World Health Organization (WHO). "Strategic Partnership for IHR and Health Security (SPH)". [<https://extranet.who.int/sph>]. Accessed 3 September 2020.

[9] World Health Organization. "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 11 October 2020.

[10] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

3.2.1b

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

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

Current Year Score: 0

There is no evidence on the World Health Organization's website or the websites of the Estonian Health Board, the Estonian Ministry of Rural Affairs, or the National Institute for Health Development (a government-funded agency that does research on human health issues) that Estonia has identified a list of gaps and best practices in response or developed a plan to improve response capabilities. [1, 2, 3, 4, 5, 6, 7]

[1] World Health Organization (WHO). "After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 3 September 2020.

[2] World Health Organization (WHO). "WHO/Europe: Estonia". [<http://www.euro.who.int/en/countries/estonia>]. Accessed 3 September 2020.

- [3] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.
- [4] National Institute for Health Development. "Main page". [<http://www.tai.ee>] Accessed 3 September 2020.
- [5] World Health Organization (WHO). "WHO/Europe". [<http://www.euro.who.int/en/home>]. Accessed 3 September 2020.
- [6] World Health Organization (WHO). "Strategic Partnership for IHR and Health Security (SPH)". [<https://extranet.who.int/sph>]. Accessed 3 September 2020.
- [7] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Estonia has undergone a national-level biological threat-focused exercise ion the past year.

No evidence of this could be found on the World Health Organization's International Health Regulations database or on the websites of relevant national authorities, including that of the Estonian Health Board, the national emergency response center, or the Ministry of Defense. [1, 2, 3, 4, 5]

- [1] World Health Organization. "Strategic Partnership for International Health Regulations (2005) and Health Security (SPH)". [<https://extranet.who.int/sph/after-action-review>]. Accessed 12 September 2020.
- [2] World Health Organization. "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 11 October 2020.
- [3] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 12 September 2020.
- [4] Estonian Emergency Reponse Centre. [<http://112.ee>]. Accessed 12 September 2020.
- [5] Estonian Ministry of Defense. [<http://www.kaitseministeerium.ee>]. Accessed 12 September 2020.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Estonia has an Emergency Operations Center. The Estonian Emergency Response Center (ERC), a division of the Ministry of Internal Affairs, responds to all emergency notifications and cooperates with other agencies, including the Estonian Health Board, to resolve emergencies. [1] For example, the ERC notifies the Health Board when there is suspicion of a disease outbreak. [2] In addition, local divisions of the Health Board are required to notify the ERC if they learn of an outbreak of plague, cholera, yellow fever, or viral hemorrhagic fever in their communities. [3] In March 2020, the Emergency Response Center and the Estonian Health Board introduced a special 24/7 hotline to respond to coronavirus-related inquiries. [4]

- [1] Estonian Emergency Response Center. "Estonian Emergency Response Centre". [https://www.112.ee/en/?com.dotmarketing.htmlpage.language=2]. Accessed 3 September 2020.
- [2] Estonian Ministry of Internal Affairs. "Plan for Resolving Epidemic Emergencies" ("Epidemia hädaloorra lahendamise plaan"). [https://www.sm.ee/sites/default/files/content-editors/Tervishoid/epideemia_holp.rtf]. Accessed 3 September 2020.
- [3] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv]. Accessed 3 September 2020.
- [4] Estonian Police and Border Guard. March 2020. "Emergency Reponse Center and Health Board launch 1247 hotline in response to the coronavirus outbreak" ("Häirekeskus ja Terviseamet avavad koroonaviiruse levikuga seoses infotelefoni 1247"). [https://www.politsei.ee/et/uudised/hairekeskus-ja-terviseamet-avavad-koroonaviiruse-levikuga-seoses-infotelefoni-1247-1252]. Accessed 3 September 2020.

3.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

No evidence could be found that Estonia's emergency operations center is required to conduct a drill for public health emergencies or that a drill takes places at least once per year.

No evidence of this could be found on the websites of the Estonian Emergency Response Center (ERC), the Ministry of Internal Affairs, in the Estonian Emergency Act, or in Estonia's readiness report for the Sendai Framework (a non-binding agreement urging states to increase disaster preparedness) that the ERC itself is required to conduct yearly drills. [1, 2, 3, 4, 5]

However, each of the four macro-regions of Estonia (North Estonia, South Estonia, West Estonia, and East Estonia) has a "crisis commission" made up of the regional heads of the agencies that would potentially be involved in resolving a crisis, including the heads of the ERC, the Health Board, and the Veterinary and Food Board (VFB). [4, 6] The regional crisis commissions are required to conduct a drill at least once per year, although they are not specifically focused on health. [7] After these drills, the commissions are required to document their conclusions and draw up an action plan. [7] In May 2019, the VFB conducted an exercise in a village of the Tartu region of South Estonia to assess its readiness to address an animal disease outbreak. The Emergency Response Center was not involved in this training. [8]

- [1] PreventionWeb. 2017. "Estonia: Sendai Framework data readiness review report". [https://www.preventionweb.net/files/53188_estoniaest.pdf]. Accessed 3 September 2020.
- [2] Estonian Emergency Response Center. [http://www.112.ee]. Accessed 3 September 2020.
- [3] Estonian Ministry of Internal Affairs. [http://www.siseministerium.ee]. Accessed 3 September 2020.
- [4] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus"). [https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv]. Accessed 3 September 2020.
- [5] Estonian Health Board. [http://www.terviseamet.ee]. Accessed 2 September 2020.
- [6] Estonian Ministry of Internal Affairs. 2017. "Statute on Regional Crisis Committees" ("Regionaalsete kriisikomisjonide põhimõtted"). [https://www.riigiteataja.ee/akt/109062017008]. Accessed 3 September 2020.
- [7] Estonian Ministry of Internal Affairs. 2017. "Requirements for the Planning and Conduct of Crisis Regulation Drills" ("Kriisireguleerimisõppuse läbiviimisele ning õppuse korraldamisele esitatavad nõuded"). [https://www.riigiteataja.ee/akt/109062017006]. Accessed 3 September 2020.

[8] Estonian Hunters Union. 2019. "Veterinary and Food Board conducts drill for dangerous animal diseases" ("Veterinaar- ja Toiduamet korraldab eriti ohtliku loomataudi Äppuse"). [<http://www.ejs.ee/veterinaar-ja-toiduamet-korraldab-eriti-ohtliku-loomataudi-oppuse>]. Accessed 3 September 2020.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence on the websites of the Estonian Emergency Response Centre (ERC), the Ministry of Internal Affairs, in the Estonian Emergency Act, or in Estonia's readiness report for the Sendai Framework (a non-binding agreement urging states to increase disaster preparedness) to demonstrate that the ERC has conducted or is able to conduct an emergency response exercise activated within 120 minutes of the identification of a public health emergency/scenario. [1, 2, 3, 4, 5]

[1] PreventionWeb. 2017. "Estonia: Sendai Framework data readiness review report".

[https://www.preventionweb.net/files/53188_estoniaest.pdf]. Accessed 3 September 2020.

[2] Estonian Emergency Response Centre. [<http://www.112.ee>]. Accessed 3 September 2020.

[3] Estonian Ministry of Internal Affairs. "Home". [<http://www.siseministeerium.ee>]. Accessed 3 September 2020.

[4] Estonian Parliament. 2020. "Emergency Act" ("HÄrdaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[5] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 3 September 2020.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?

- Is there public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack)?

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

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

Current Year Score: 1

There is public evidence that public health and national security authorities have participated in an exercise to respond to a potential deliberate biological event; however, there is no publicly available evidence of standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event in Estonia. [1, 2, 3, 4, 5, 6].

In January 2018, public health and civil protection/security representatives from Estonia participated in the European Commission's Exercise Chimera, which was meant to consider European Union Member States' crisis response in the event of a bioterrorist attack and "challenge the use and usability and the cross-sectoral nature of the existing mechanisms, systems and communication tools in response to a hybrid threat". [7]

No evidence of standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event in Estonia could be found on the websites of the Estonian Health Board, Ministry of Defense, Ministry of Justice, Ministry of Internal Affairs, or the Emergency Response Center, or in the Estonian Emergency Act. [1, 2, 3, 4, 5, 6]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] Estonian Ministry of Internal Affairs. "Home". [<http://www.siseministeerium.ee>]. Accessed 3 September 2020.

[3] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[4] Estonian Ministry of Justice. [<http://www.just.ee>]. Accessed 3 September 2020.

[5] Estonian Emergency Response Centre. [<http://www.112.ee>]. Accessed 12 September 2020.

[6] Estonian Parliament. 2020. "Emergency Act" ("Häädalukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[7] European Commission. January 2018. "Exercise Chimera".

[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/2018_hybridthreatsexercise_en.pdf]. Accessed 3 September 2020.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

The legislation and guidelines on risk communication do not address how different audiences within Estonia should be targeted [1, 2, 3]. While an annex to the Emergency Act, passed in 2017 and revised in 2020, stipulates that risk communication should be carried out "in the manner and language that ensures that the information reaches the people affected by the emergency", it does not provide guidelines as to how this should be done. [4] The Estonian Ministry of Internal Affairs' guidelines state that risk communication should be tailored to different audiences but do not provide detailed instructions. [5] The Estonian Health Board's official website is available in Russian, Estonian, and English, as is its website for up-to-date information about the COVID-19 outbreak. [6, 7] The Veterinary and Food Board's website is also available in Russian, Estonian, and English. [8]

[1] Estonian Parliament. 2020. "Emergency Act" ("Häädalukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Government of Estonia. 2018. "List of Emergencies which Require the Creation of a Management Plan and for which Risk Communication must be Conducted, and the Institutions Responsible for Managing the Emergencies" ("Häädalukorrad, mille kohta tuleb koostada nende lahendamise plaan ja mille puhul korraldada riskikommunikatsiooni, ning hädalukordade

lahendamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/131072018004>]. Accessed 3 September 2020.

[3] Estonian Ministry of Internal Affairs. "Instructions for the Conduct of Emergency Risk Communication" ("HÄrdaolukorra riskikommunikatsiooni juhendmaterjal").

[https://www.siseministerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_riskikommunikatsiooni_juhendmaterjal.pdf]

[4] Government of Estonia. 2017. "Requirements and procedures for the management of emergencies [...], communication with the public, inter-institutional information exchange and evacuation" ("HÄrdaolukorra lahendamise juhtimise, [...] avalikkuse teavitamise ja asutustevahelise teabevahetuse ning ulatusliku evakuatsiooni läbiviimise nõuded ja kord").

[<https://www.riigiteataja.ee/akt/128062017039>]. Accessed 3 September 2020.

[5] Estonian Ministry of Internal Affairs. 2018. "Instructions for the Development of an Emergency Management Plan" ("HÄrdaolukorra lahendamise plaani koostamise juhend").

[https://www.siseministerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_lahendamise_plaani_koostamise_juhendmaterjali_eelnou.pdf]. Accessed 3 September 2020.

[6] Estonian Health Board. [<https://www.terviseamet.ee>]. Accessed 3 September 2020.

[7] Kriis.ee. [<http://kriis.ee>]. Accessed 3 September 2020.

[8] Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 3 September 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1, No = 0

Current Year Score: 1

Estonia has a risk communication plan that is specifically intended for use during a public health emergency.

Section 3 of the Estonian Emergency Act, passed in 2017 and revised in 2020, defines and outlines the purpose of risk communication, and an annex to this Act stipulates that the Estonian Health Board and the Veterinary and Food Board are responsible for informing the public about the outbreak of epidemics and the spread of infectious animal diseases, respectively. [1, 2] The Ministry of Internal Affairs offers extensive guidelines on how risk communication should be conducted in accordance with the Estonian Emergency Act (e.g., what information should be included and what media should be used). [3, 4]

[1] Estonian Parliament. 2020. "Emergency Act" ("HÄrdaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Government of Estonia. 2018. "List of Emergencies which Require the Creation of a Management Plan and for which Risk Communication must be Conducted, and the Institutions Responsible for Managing the Emergencies" ("HÄrdaolukorrad, mille kohta tuleb koostada nende lahendamise plaan ja mille puhul korraldada riskikommunikatsiooni, ning hÄrdaolukordade lahendamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/131072018004>]. Accessed 3 September 2020.

[3] Estonian Ministry of Internal Affairs. "Instructions for the Conduct of Emergency Risk Communication" ("HÄrdaolukorra riskikommunikatsiooni juhendmaterjal").

[https://www.siseministerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_riskikommunikatsiooni_juhendmaterjal.pdf]. Accessed 3 September 2020.

[4] Estonian Ministry of Internal Affairs. 2018. "Instructions for the Development of an Emergency Management Plan"

("HÃ¤daolukorra lahendamise plaani koostamise juhend").

[https://www.siseministeerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_lahendamise_plaani_koostamise_juhendmaterjali_eelnou.pdf]. Accessed 3 September 2020.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

The legislation and guidelines on risk communication do not designate a specific position to serve as the primary spokesperson during a public health emergency in Estonia.

Section 3 of the Estonian Emergency Act, passed in 2017 and revised in 2020, defines and outlines the purpose of risk communication, and an annex to this Act stipulates that the Estonian Health Board and the Veterinary and Food Board are responsible for informing the public about the outbreak of epidemics and the spread of infectious animal diseases, respectively. [1, 2] The Ministry of Internal Affairs offers extensive guidelines on how risk communication should be conducted in accordance with the Estonian Emergency Act (e.g., what information should be included and what media should be used). [3, 4]

However, these documents do not designate a specific government spokesperson for crisis communications. No further information could be found on the Estonian Health Board's website. [5]

[1] Estonian Parliament. 2020. "Emergency Act" ("HÃ¤daolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Government of Estonia. 2018. "List of Emergencies which Require the Creation of a Management Plan and for which Risk Communication must be Conducted, and the Institutions Responsible for Managing the Emergencies" ("HÃ¤daolukorrad, mille kohta tuleb koostada nende lahendamise plaan ja mille puhul korraldada riskikommunikatsiooni, ning hÃ¤daolukordade lahendamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/131072018004>]. Accessed 3 September 2020.

[3] Estonian Ministry of Internal Affairs. "Instructions for the Conduct of Emergency Risk Communication" ("HÃ¤daolukorra riskikommunikatsiooni juhendmaterjal").

[https://www.siseministeerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_riskikommunikatsiooni_juhendmaterjal.pdf]. Accessed 3 September 2020.

[4] Estonian Ministry of Internal Affairs. 2018. "Instructions for the Development of an Emergency Management Plan" ("HÃ¤daolukorra lahendamise plaani koostamise juhend").

[https://www.siseministeerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_lahendamise_plaani_koostamise_juhendmaterjali_eelnou.pdf]. Accessed 3 September 2020.

[5] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 9 September 2020.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 2

Estonia's public health system has actively shared messages online about ongoing public health concerns and has used these platforms to dispel misinformation.

During the 2019-2020 flu season, the Estonian Health Board posted detailed weekly blog entries on its website and Facebook page about the incidence of the virus in the country. Toward the end of 2019, it began to share information about the COVID-19 outbreak in China and its implications for Estonian travelers. At the end of February, it began posting daily bulletins about the incidence of COVID-19 in Estonia, including the numbers of new cases, hospitalizations, deaths, etc, as well as general tips for preventing the spread of the virus. [1, 2, 3, 4]

The Veterinary and Food Board of Estonia also actively shares information and news about animal health and infectious diseases on its website and on Facebook. [5]

The Health Board has also used its website to counter disinformation about COVID-19. For example, in April 2020, it published an article warning Estonians about a phone scam involving a nonexistent at-home test for COVID-19. The agency reminded readers that only certain Health Board-certified laboratories were authorized to perform tests for COVID-19 and that they should remain wary of any phone calls related to the virus. [6]

[1] Estonian Health Board. January 2020. "Flu blog, 1st week of 2020: Three flu virus strains in Estonia" ("Gripiblogi, 2020 aasta 1. nädal: Eestis ringleb kolm gripiviiruse tüüpi"). [<https://www.terviseamet.ee/et/uudised/gripiblogi-2020-aasta-1-nadal-eestis-ringleb-kolm-gripiviiruse-tuupi>]. Accessed 3 September 2020.

[2] Estonian Health Board. "News" ("Uudised"). [<https://www.terviseamet.ee/et/uudised>]. Accessed 3 September 2020.

[3] Estonian Health Board Facebook Page. [<https://www.facebook.com/terviseamet/>]. Accessed 3 September 2020.

[4] Estonian Health Board. February 2020. "Today's coronavirus tests return negative results" ("Täna väämetud koroonaviiruse proovid osutusid negatiivseteks"). [<https://www.terviseamet.ee/et/uudised/tana-voetud-koroonaviiruse-proovid-osutusid-negatiivseteks>]. Accessed 3 September 2020.

[5] Veterinary and Food Board Facebook Page. [<https://www.facebook.com/veterinaarjatoiduamet>]. Accessed 3 September 2020.

[6] Estonian Health Board. April 2020. "Health Board urges caution over scams" ("Terviseamet hoiatab pettuse eest"). [<https://www.terviseamet.ee/et/uudised/terviseamet-hoiatab-pettuse-eest>]. Accessed 3 September 2020.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

No evidence could be found in major Estonian or international media outlets that senior leaders in Estonia have shared misinformation or disinformation on infectious diseases in the past year. [1, 2, 3, 4, 5]

However, in March 2020, Interior Minister Mart Helme of the Estonian Conservative People's Party claimed that unspecified "opposition politicians" were behind the dissemination of fake stories on social media that claimed that alcohol sales would be ceased and freedom of movement in the capital region would be restricted. [6]

[1] Delfi. [<http://delfi.ee>]. Accessed 4 September 2020.

[2] ERR.ee. [<http://err.ee>]. Accessed 4 September 2020.

[3] Postimees. [<http://postimees.ee>]. Accessed 4 September 2020.

[4] Reuters. [<http://reuters.com>]. Accessed 12 September 2020.

[5] Radio Free Europe/Radio Liberty. [<http://rferl.org>]. Accessed 12 September 2020.

[6] ERR.ee. March 2020. "Helme refuses to name politicians behind recent fake news". [<https://news.err.ee/1067724/helme-refuses-to-name-politicians-behind-recent-fake-news>]. Accessed 4 September 2020.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 89.53

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: 147.18

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: 0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 5.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0, No = 1

Current Year Score: 0

Estonia has issued restrictions on the export of medical goods due to an infectious disease outbreak in the past year, and this occurred without international support.

On 15 March 2020, the European Union introduced restrictions on the export of certain personal protective equipment (PPE) outside of the European Union. [1] Specific equipment covered included protective spectacles and visors, mouth-nose protection equipment, and protective garments. [2] As a European Union Member State, Estonia was subject to these restrictions. Estonian exporters of PPE must receive a special authorization from the Estonian Tax and Customs Board. [3]

[1] European Commission. March 2020. "Commission publishes guidance on export requirements for personal protective equipment". [<https://trade.ec.europa.eu/doclib/press/index.cfm?id=2123>]. Accessed 4 September 2020.

[2] European Commission. April 2020. "Export Requirements for Certain Personal Protective Equipment: Frequently Asked Questions". [https://trade.ec.europa.eu/doclib/docs/2020/april/tradoc_158693.pdf]. Accessed 4 September 2020.

[3] European Commission. April 2020. "Export authorisation scheme for personal protective equipment: List of the competent authorities in Member States". [https://trade.ec.europa.eu/doclib/docs/2020/march/tradoc_158674.pdf]. Accessed 4 September 2020.

3.7.1b

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

Yes = 0, No = 1

Current Year Score: 1

No evidence could be found that Estonia has introduced restrictions on the import or export of non-medical goods in the past year due to an infectious disease outbreak.

No evidence of this could be found on the websites of the Estonian Health Board, the Veterinary and Food Board, the Ministry of Foreign Affairs, or the Estonian Tax and Customs Board. [1, 2, 3, 4] Additionally, the European Union, of which Estonia is a Member State, has not introduced restrictions on the movement of non-medical goods over the past year. [5]

[1] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 4 September 2020.

[2] Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 4 September 2020.

[3] Estonian Ministry of Foreign Affairs. [<http://vm.ee>]. Accessed 4 September 2020.

[4] Estonian Tax and Customs Board. [<http://emta.ee>]. Accessed 4 September 2020.

[5] European Commission. "Import and export rules". [<https://ec.europa.eu/trade/import-and-export-rules>]. Accessed 4 September 2020.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0, No = 1

Current Year Score: 0

Estonia has implemented a ban on travelers arriving from specific countries due to an infectious disease outbreak, and this occurred without international support.

In March 2020, the European Union restricted non-essential travel into the European Union from third countries at all parts of the Union's external borders. [1] On 25 June, the European Commission adopted a proposal to lift travel restrictions from select countries based on the recommendations of European and global health authorities. [1] As a European Union Member State, Estonia is subject to these regulations and has implemented them. [2]

[1] European Commission. "Travel and transportation during the coronavirus pandemic". [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/travel-and-transportation-during-coronavirus-pandemic_en]. Accessed 4 September 2020.

[2] Estonian Ministry of Foreign Affairs. "Coronavirus 2019-NCoV" ("Koroonaviirus 2019-nCoV").

[<https://vm.ee/et/koroonaviirus-2019-ncov>]. Accessed 4 September 2020.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 448.33

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 1115.58

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

No evidence of a workforce strategy aimed specifically at health workers could be found on the websites of the Estonian Health Board, the Ministry of Education and Research, the Ministry of Social Affairs, the Estonian Unemployment Insurance Fund (which offers career training and counseling), or in the Estonian Government's current employment strategy. [1, 2, 3, 4, 5] In 2016, the Estonian government adopted a strategy ("Employment Programme 2017 - 2020"), updated in 2019, whose stated objectives are to address labor shortages and reduce unemployment; however, it does not specify which sectors are experiencing shortages and does not present a plan to address a shortage of health workers. [5] A 2017 report co-authored by the Estonian Qualification Authority (a private organization) and the Ministry of Economic Affairs and Communication forecasted that the Estonian health care sector would likely experience significant shortages because of a growth in the number of Estonians requiring medical care (due to the rapid aging of the population). [6]

- [1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.
- [2] Estonian Ministry of Education and Research. [<http://www.hm.ee>]. Accessed 3 September 2020.
- [3] Estonian Ministry of Social Affairs. [<http://www.sm.ee>]. Accessed 3 September 2020.
- [4] Estonian Unemployment Insurance Fund. [<https://www.tootukassa.ee>]. Accessed 3 September 2020.
- [5] Government of Estonia. 2016. "Employment Programme 2017 - 2020" ("Tööhõive programm 2017 - 2020"). [<https://www.riigiteataja.ee/akt/122112016012>]. Accessed 3 September 2020.
- [6] Kutsekoda. 2017. "Overview of the state of the Estonian labour force, labour shortages, and the resulting need for training" ("Ülevaade Eesti tööturu olukorrast, tööjõuvajadusest ning sellest tulenevast koolitusvajadusest"). [http://oska.kutsekoda.ee/wp-content/uploads/2017/02/T%C3%B6%C3%B6turu_uuring_terviktekst.pdf]. Accessed 3 September 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 457

2018

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

Estonia has the capacity to isolate patients with highly communicable diseases. There is evidence of at least four hospitals in Estonia that are able to isolate patients with communicable diseases. [1, 2, 3, 4] However, all hospitals in Estonia are required to have such facilities. At least one hospital, the Narva Hospital, has advanced isolation capacities, including a decontamination unit [1]. The Ministry of Social Affairs decree from 2016 titled "Requirements for the Elements of a Hospital" has specific regulations concerning how these facilities should be equipped; for example, hospitals designated as "central hospitals" must have at least two isolation units, and at least one of these units must be equipped to prevent the spread of communicable diseases through air [5].

- [1] Estonian Ministry of Social Affairs. 2017. "Narva Hospital Department of Emergency Medicine Functional Development Plan: Stage II" ("SA Narva Haigla EMO funktsionaalne arengukava (II etapp)"). [https://www.sm.ee/sites/default/files/sa_narva_haigla_emo_funktsionaalne_arengukava_iietapp_12.2017.pdf]. Accessed 4 September 2020.
- [2] Tartu Postimees. 2003. "Patients with pulmonary conditions will now receive treatment in new rooms" ("Kopsuhaiged kosuvad nüüd uutes palatites"). [<https://tartu.postimees.ee/1994789/kopsuhaiged-kosuvad-nuud-uutes-palatites>]. Accessed 4 September 2020.
- [3] Eesti Ekspress. March 2020. "Hospitals prepare beds for coronavirus patients" ("Haiglad panevad koroonahaigetele valmis ravivooideid"). [<https://ekspress.delfi.ee/teateid-elust/haiglad-panevad-koroonahaigetele-valmis-ravivooideid?id=89183807>].

Accessed 4 September 2020.

[4] University of Tartu Faculty of Medicine. 2018. "Overview of the hospital database and the feedback of interns 2016/2017" ("Haiglabaaside tutvustuv ja praktikantide tagasiside 2016/2017").

[https://meditsiiniteadused.ut.ee/sites/default/files/www_ut/oppimine/praktikabaasid_haiglates_2018-2019_oppeaastal.pdf]. Accessed 4 September 2020.

[5] Estonian Ministry of Social Affairs. 2016. "Requirements for the Elements of a Hospital" ("Haigla liikide nõuded").

[<https://www.riigiteataja.ee/akt/13252715?leiaKehtiv>]. Accessed 4 September 2020.

4.1.2c

Does the country meet one of the following criteria?

- Is there evidence that the country has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years?

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

Yes = 1, No = 0

Current Year Score: 1

Estonia has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years. There is no evidence that it has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years. In response to the COVID-19 outbreak, a number of medical institutions in Estonia constructed facilities to isolate patients with COVID-19 from other patients. For example, wards specifically for COVID-19 patients have been opened at North Estonia Medical Center, Tartu University Hospital, and East Tallinn Central Hospital. [1, 2, 3] However, there is no evidence on the website of the Estonian Health Board of a national plan to expand isolation capacity or that one is being developed. [4]

[1] Tartu University Hospital. April 2020. "COVID-19 ward" ("COVID-19 nakkushaiguste osakond").

[<https://www.kliinikum.ee/covid-19-nakkushaiguste-osakond/>]. Accessed 1 April 2021.

[2] Delfi. March 2021. "Third COVID ward opened at ETCH" ("ITK avas kolmanda Covid osakonna").

[<https://www.delfi.ee/artikkel/92707455/itk-avas-kolmanda-covid-osakonna>]. Accessed 1 April 2021.

[3] North Estonia Medical Center. March 2020. "COVID-19 patient ward built at North Estonia Medical Center" ("Regionaalhaiglas loodi COVID-19 patsientide osakond"). [<https://www.regionaalhaigla.ee/et/regionaalhaiglas-loodi-covid-19-patsientide-osakond>]. Accessed 1 April 2021.

[4] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 1 April 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 2

Estonia has a national procurement portal that can be utilized by health and agriculture authorities to acquire laboratory supplies and medical supplies.

In accordance with the Public Procurements Act (passed in 2017 and last revised in 2020), the Public Procurement Register is a platform used by authorities to announce tenders, create, publish and access tendering documents, submit proposals, and evaluate bids. [1, 2] There is evidence that the Estonian Health Board has used the Register to acquire reagents and contrast media, personal protective equipment, and other medical supplies. [3, 4] The Veterinary and Food Board has also used the Register to acquire personal protective equipment. [3]

There is no evidence of a separate procurement protocol or portal for the Estonian Health Board. [5] The Veterinary and Food Board has a procurement protocol, but it does not address laboratory or other medical equipment. [6]

[1] Estonian Parliament. 2020. "Public Procurements Act" ("Riigihangete seadus").

[<https://www.riigiteataja.ee/akt/101072017001?leiaKehtiv>]. Accessed 4 September 2020.

[2] Public Procurement Register. [<https://riigihanked.riik.ee>]. Accessed 4 September 2020.

[3] Estonian Public Procurement Register. "Personal protective equipment purchasing" ("Isikukaitsevahendite ostmine").

[<https://riigihanked.riik.ee/rhr-web/#/procurement/1943092/general-info>]. Accessed 4 September 2020.

[4] "Reagents for the identification of pathogens using the LAMP method" ("Reaktiivid haigustekitajata määramiseks LAMP meetodil"). [<https://riigihanked.riik.ee/rhr-web/#/procurement/2303033/general-info>]. Accessed 4 September 2020.

[5] Estonian Health Board. [<http://terviseamet.ee>].

[6] Estonian Ministry of Rural Affairs. 2017. "Public Procurement Procedures for the Ministry of Rural Affairs" ("Maaeluministeeriumi hankekord").

[<https://www.agri.ee/sites/default/files/content/ministeerium/majandus/maaeluministeerium-hankekord-2017.pdf>]. Accessed 4 September 2020.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 2

Estonia has a stockpile of medical supplies and countermeasures for national use during a public health emergency.

Per the Health Care Services Organization Act (passed in 2001 and last updated in 2020), the Estonian Health Board is responsible for overseeing a national medical stockpile. [1] The maintenance of a national medical stockpile is also required by the Estonian Emergency Act (passed in 2017 and revised in 2020). [2] While the exact content of the stockpile is not mentioned in either of the above documents, reports from government officials and from media sources indicate that it includes medicines and certain vaccines, including vaccines against influenza. [3, 4, 5, 6] Additionally, in August 2020, the Estonian Government allocated an additional EUR 2.5 million (USD 2.9 million) to the Health Board to allow it to replenish the country's stock of personal protective equipment in light of the COVID-19 outbreak. [7] An October 2020 article by the National Audit Office of Estonia states that at the onset of COVID-19, Estonia's public health emergency stockpile had been

largely outdated, with an inadequate supply of personal protective equipment. [8]

- [1] Estonian Parliament. 2020. "Health Services Organization Act" ("Tervishoiuteenuste korraldamise seadus"). [https://www.riigiteataja.ee/akt/126022015015?leiaKehtiv]. Accessed 3 September 2020.
- [2] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus"). [https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv]. Accessed 3 September 2020.
- [3] Postimees. April 2020. "Ministry of Social Affairs: State reserves should be bigger in the future" ("Sotsiaalminister: riiklikud reservid peavad tulevikus suuremad olema"). [https://www.postimees.ee/6944845/sotsiaalminister-riiklikud-reservid-peavad-tulevikus-suuremad-olema]. Accessed 4 September 2020.
- [4] Delfi.ee. July 2019. "Fearing a measles outbreak, Health Insurance Fund acquires more than 30,000 vaccine doses" ("Haigekassa hangib leetrite riikliku epideemia hirmus üle 30 000 doosi vaktsiini"). [https://www.delfi.ee/news/paevauudised/eesti/haigekassa-hangib-leetrite-riikliku-epideemia-hirmus-ule-30-000-doosi-vaktsiini?id=86749113]. Accessed 4 September 2020.
- [5] Estonian Ministry of Social Affairs. October 2017. "Ministry of Social Affairs signs agreement to purchase HPV vaccine" ("Sotsiaalministeerium sõlmis lepingu HPV-vaktsiini ostmiseks"). [https://www.sm.ee/et/uudised/sotsiaalministeerium-solmis-lepingu-hpv-vaktsiini-ostmiseks]. Accessed 4 September 2020.
- [6] Postimees. 11 October 2020. "Flu vaccines running out in Estonia" ("Gripivaktsiini varud on Eestis juba otsakorral"). [https://www.postimees.ee/7083620/gripivaktsiini-varud-on-eestis-juba-otsakorral]. Accessed 20 October 2020.
- [7] Estonian Ministry of Social Affairs. August 2020. "Government allocates additional 3.5 million euros to support the Health Board and replenish the PPE reserve" ("Valitsus eraldas terviseameti tugevdamiseks ja isikukaitsevahendite varu suurendamiseks kokku 3,5 miljonit eurot"). [https://www.sm.ee/et/uudised/valitsus-eraldas-terviseameti-tugevdamiseks-ja-isikukaitsevahendite-varu-suurendamiseks]. Accessed 4 September 2020.
- [8] National Audit Office of Estonia. October 2020. "Was the crisis brought on by coronavirus too mild to serve as a teaching moment?" ("Kas koroonaviiruse toodud kriis oli liiga leebe, et sellest õpitaks?") [https://www.riigikontroll.ee/Suhtedavalikkusega/Riigikontrolliblogi/tabid/310/ItemId/1298/amid/920/language/et-EE/Default.aspx]. Accessed 11 October 2020.

4.2.2b

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

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

Current Year Score: 0

There is no evidence that Estonia has a stockpile of laboratory supplies for use during a public health emergency.

Per the Health Care Services Organization Act (passed in 2001 and last updated in 2020), the Estonian Health Board is responsible for overseeing a national medical stockpile. [1] However, the required contents of the stockpile are not enumerated in either document or on the Health Board's website, and reports from government authorities that mention the stockpile refer only to medicines and personal protective equipment. [2, 3, 4] No further evidence of a stockpile of laboratory supplies could be found on the websites of the Health Board, the Ministry of Defense, or the National Institute for Health Development. [5, 6, 7]

- [1] Estonian Parliament. 2020. "Health Services Organization Act" ("Tervishoiuteenuste korraldamise seadus"). [https://www.riigiteataja.ee/akt/126022015015?leiaKehtiv]. Accessed 3 September 2020.
- [2] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus"). [https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv]. Accessed 3 September 2020.

[3] Postimees. April 2020. "Ministry of Social Affairs: State reserves should be bigger in the future" ("Sotsiaalminister: riiklikud reservid peavad tulevikus suuremad olema"). [<https://www.postimees.ee/6944845/sotsiaalminister-riiklikud-reservid-peavad-tulevikus-suuremad-olema>]. Accessed 4 September 2020.

[4] Estonian Ministry of Social Affairs. August 2020. "Government allocates additional 3.5 million euros to support the Health Board and replenish the PPE reserve" ("Valitsus eraldas terviseameti tugevdamiseks ja isikukaitsevahendite varu suurendamiseks kokku 3,5 miljonit eurot"). [<https://www.sm.ee/et/uudised/valitsus-eraldas-terviseameti-tugevdamiseks-ja-isikukaitsevahendite-varu-suurendamiseks>]. Accessed 4 September 2020.

[5] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 4 September 2020.

[6] Estonian Ministry of Defense. [<http://kaitseministeerium.ee>]. Accessed 4 September 2020.

[7] National Institute for Health Development. [<http://tai.ee>]. Accessed 4 September 2020.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

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

According to the Health Care Services Organization Act (passed in 2001 and last updated in 2021), the Estonian Health Board is responsible for overseeing a national medical stockpile. [1] The maintenance of a national medical stockpile is also required by the Estonian Emergency Act (passed in 2017 and revised in 2020). [2] However, neither law makes the stockpile subject to an annual review. [1, 2] An October 2020 article by the National Audit Office of Estonia states that at the onset of COVID-19, Estonia's public health emergency stockpile had been largely outdated, with an inadequate supply of personal protective equipment; however, it is not clear whether the National Audit Office conducts regular reviews. [3]

[1] Estonian Parliament. 2020. "Health Services Organization Act" ("Tervishoiuteenuste korraldamise seadus"). [<https://www.riigiteataja.ee/akt/126022015015?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus"). [<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[3] National Audit Office of Estonia. October 2020. "Was the crisis brought on by coronavirus too mild to serve as a teaching moment?" ("Kas koroonaviiruse toodud kriis oli liiga leebe, et sellest õpitaks?") [<https://www.riigikontroll.ee/Suhtedavalikkusega/Riigikontrolliblogi/tabid/310/ItemId/1298/amid/920/language/et-EE/Default.aspx>]. Accessed 11 October 2020.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 1

There is evidence of a mechanism to procure medical supplies for national use during a public health emergency in Estonia, but not of a plan to leverage domestic manufacturing capacity of such supplies.

Estonia is a 2014 signatory party of the European Union Joint Procurement Agreement for Medical Countermeasures, which ensures that countries under the agreement have access to vaccines, antivirals, and medical countermeasures for serious cross-border threats to health [1].

Additionally, article 49-(1)-3 of Estonia's Public Procurement Act (adopted in 2017 and last revised in 2020) allows contracting authorities to use an expedited procurement procedure in the event of unforeseen circumstances and immediate need. [2] An April 2020 report by the Organization for Economic Cooperation and Development claims based on this that such supplies can include, for example, protective masks; however, medical supplies are not explicitly mentioned in the Act itself. [3]

There is no evidence available on the websites of the Estonian Health Board, the Defense Ministry, the National Institute for Health, or the Estonian Ministry of Social Affairs, or in the country's Emergency Act (passed in 2017 and revised in 2020) or its Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2021) that Estonia has a plan to leverage domestic manufacturing of medical supplies during a public health emergency. [4, 5, 6, 7, 8, 9]

[1] European Commission. "Joint Procurement of medical countermeasures".

[https://ec.europa.eu/health/preparedness_response/joint_procurement_en]. Accessed 15 March 2019.

[2] Estonian Parliament. 2020. "Public Procurements Act" ("Riigihangete seadus").

[<https://www.riigiteataja.ee/akt/101072017001?leiaKehtiv>]. Accessed 4 September 2020.

[3] Organization for Economic Cooperation and Development. June 2020. "Stocktaking report on immediate public procurement and infrastructure responses to COVID-19". [www.oecd.org/coronavirus/policy-responses/stocktaking-report-on-immediate-public-procurement-and-infrastructure-responses-to-covid-19-248d0646]. Accessed 4 September 2020.

[4] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[5] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[6] National Institute for Health Development. [<http://www.tai.ee>] Accessed 3 September 2020.

[7] Estonian Ministry of Social Affairs. [<http://www.sm.ee>].

[8] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[9] Estonian Parliament. 2003. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 3 September 2020.

4.2.3b

Does the country meet one of the following criteria?

- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

- Is there evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

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

Current Year Score: 0

There is no evidence that Estonia has a plan to leverage domestic manufacturing capacity to produce laboratory supplies or that there is a plan to procure them in the event of a public health emergency.

Estonia is a 2014 signatory party of the European Union Joint Procurement Agreement for Medical Countermeasures, which ensures that countries under the agreement have access to medical countermeasures from abroad if necessary when a serious cross-border threat to health is registered. [1] However, laboratory supplies are not included in this agreement.

Article 49-(1)-3 of the Public Procurement Act (adopted in 2017 and last revised in 2020) allows contracting authorities to use an expedited procurement procedure in the event of unforeseen circumstances and immediate need. [2] It is unclear whether laboratory supplies would be eligible for this expedited procedure.

Additionally, there is no evidence available on the websites of the Estonian Health Board, the Defense Ministry, the National Institute for Health, or the Estonian Ministry of Social Affairs, or in the country's Emergency Act (passed in 2017 and revised in 2020) or its Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020) that Estonia has a plan to leverage domestic manufacturing capacity to produce laboratory supplies or that there is a plan to procure them in the event of a public health emergency. [3, 4, 5, 6, 7, 8]

[1] European Commission. "Joint Procurement of medical countermeasures".

[https://ec.europa.eu/health/preparedness_response/joint_procurement_en]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Public Procurements Act" ("Riigihangete seadus").

[<https://www.riigiteataja.ee/akt/101072017001?leiaKehtiv>]. Accessed 4 September 2020.

[3] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[4] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[5] National Institute for Health Development. [<http://www.tai.ee>]. Accessed 3 September 2020.

[6] Estonian Ministry of Social Affairs. [<http://www.sm.ee>].

[7] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[8] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 3 September 2020.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Estonia has a plan or guidelines in place for dispensing medical countermeasures for national use during a public health emergency.

No evidence could be found on the websites of the Estonian Health Board, the Ministry of Internal Affairs, the Defense Ministry, the National Institute for Health Development, or the Estonian Ministry of Social Affairs, or in the country's

Emergency Act (passed in 2017 and revised in 2020) or its Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020) that Estonia has a plan for dispensing medical countermeasures during a public health emergency [1, 2, 3, 4, 5, 6].

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[2] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[3] National Institute for Health Development. [<http://www.tai.ee>] Accessed 3 September 2020.

[4] Estonian Ministry of Social Affairs. [<http://www.sm.ee>].

[5] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[6] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 3 September 2020.

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

4.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence available on the websites of the Estonian Health Board, the Defense Ministry, the National Institute for Health Development, or the Estonian Ministry of Social Affairs, or in the Estonian Emergency Act (passed in 2017 and revised in 2020) or its Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020) of a national-level plan on how to receive health care personnel from outside Estonia in the event of a public health emergency. [1, 2, 3, 4, 5, 6] However, Estonia could request assistance from foreign health personnel through the European Union's Civil Protection Mechanism. [7] Under this Mechanism, the European Medical Corps could be dispatched to Estonia to provide emergency medical care. [8] However, neither the Civil Protection Mechanism nor plans via the Estonian government outline how to facilitate the arrival and movement of requested health personnel to the country.

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[2] Estonian Defense Ministry. [<http://www.kaitseministeerium.ee>]. Accessed 2 September 2020.

[3] National Institute for Health Development. [<http://www.tai.ee>] Accessed 3 September 2020.

[4] Estonian Ministry of Social Affairs. [<http://www.sm.ee>].

[5] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[6] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 3 September 2020.

[7] European Commission. "EU Civil Protection Mechanism". [http://ec.europa.eu/echo/what/civil-protection/mechanism_en]

[8] European Commission. "European Medical Corps".

[http://ec.europa.eu/echo/files/aid/countries/factsheets/thematic/European_Medical_Corps_en.pdf]

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.4

2016

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

4.4.1c

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

Input number

Current Year Score: 509.58

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence on the websites of the Estonian Health Board, the Estonian Emergency Response Center, the National Institute for Health Development, or in the Emergency Act (passed in 2017 and revised in 2020) or its Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020) of a policy, public statement, or legislation suggesting that health workers would receive prioritized care after falling ill while responding to a public health emergency. [1, 2, 3, 4, 5] The Estonian Occupational Health and Safety Act (passed in 1999 and revised in 2020) and related legislation outlines the precautions employers must take to prevent workers from being exposed to pathogens; however, these documents do not indicate the existence of any special procedures or benefits for healthcare workers. [6, 7, 8]. Although there is insufficient evidence of a plan to prioritize care, the Estonian Emergency Act dictates that the state must compensate any person who is injured or becomes ill while providing crisis management services for all of their associated medical costs. [5]

[1] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[2] Estonian Emergency Response Center. [<http://112.ee>]. Accessed 2 September 2020.

[3] National Institute for Health Development. [<http://www.tai.ee>] Accessed 3 September 2020.

[4] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[5] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085?leiaKehtiv>]. Accessed 3 September 2020.

[6] Estonian Parliament. 2020. "Occupational Health and Safety Act" ("Töötervishoiu ja tööohutuse seadus").

[<https://www.riigiteataja.ee/akt/106072012060?leiaKehtiv>]. Accessed 2 September 2020.

[7] Government of Estonia. 2019. "Occupational Health and Safety Requirements for Workplaces in which Dangerous Biological Agents are Present" ("Bioloogilistest ohuteguritest mõjutatud töökeskkonna töötervishoiu ja tööohutuse nõuded").

[<https://www.riigiteataja.ee/akt/1024264?leiaKehtiv>]. Accessed 3 September 2020.

[8] Estonian Ministry of Social Affairs. 2010. "Procedures for Handling Infectious Materials" ("Nakkusohutliku materjali käitlemise kord"). [<https://www.riigiteataja.ee/akt/13253234>]. Accessed 3 September 2020.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a system in place for public health officials and healthcare workers to communicate during a public health emergency in Estonia.

The plan for how agencies should exchange information during crisis situations, which is outlined in the Estonian Emergency Act (passed in 2017 and revised in 2020), in the annexes to the Act, and in guidelines by the Estonian Ministry of Internal Affairs, includes health emergencies but there is no evidence of any guidance on communication between officials and workers. [1, 2, 3]

The plan states that these communications must include information about, for example, what is happening, who is involved, who the contact person is within each of the relevant agencies, etc. The plan stipulates that each crisis should be assigned to a "responsible agency", which is in charge of determining how information must be shared across different institutions. The Ministry of Internal Affairs' guidelines specify that they may be used by the Estonian Health Board. [3] There is no emergency communications plan meant to be used specifically by public health workers on the websites of the Estonian Health Board, the Ministry of Internal Affairs, or relevant legislation including the Emergency Act and the Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020) [1, 4, 5, 6].

[1] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[2] Government of Estonia. 2017. "Requirements and procedures for the management of emergencies [...], communication with the public, inter-institutional information exchange and evacuation" ("Hädaolukorra lahendamise juhtimise, [...] avalikkuse teavitamise ja asutustevahelise teabevahetuse ning ulatusliku evakuatsiooni läbiviimise nõuded ja kord").

[<https://www.riigiteataja.ee/akt/128062017039>]. Accessed 3 September 2020.

[3] Estonian Ministry of Internal Affairs. 2018. "Instructions for the Development of an Emergency Management Plan" ("Hädaolukorra lahendamise plaani koostamise juhend").

[https://www.siseministerium.ee/sites/default/files/dokumentid/Kriisireguleerimine/hadaolukorra_lahendamise_plaani_koostamise_juhendmaterjali_eelnou.pdf]. Accessed 3 September 2020.

[4] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[5] Estonian Health Board. [<http://www.terviseamet.ee>]. Accessed 2 September 2020.

[6] Estonian Ministry of Internal Affairs. [<http://www.siseministerium.ee>]. Accessed 3 September 2020.

4.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is not evidence of a system for public health officials and healthcare workers to communicate that encompasses the public and private sector in Estonia.

However, while the Estonian Ministry of Internal Affairs' guidelines for how agencies should exchange information during a crisis do not explicitly reference communication between public and private health workers, they indicate that relevant private sector entities may be included as parties to crisis communications. [1]

Being designated as a party to a crisis entitles that party to receive updates about what is happening and who to contact during a crisis. [1] No emergency communications plan meant to be used specifically by public and private health workers

could be found in the Emergency Act (passed in 2017 and revised in 2020), in an annex to the Emergency Act titled "Requirements and procedures for the management of emergencies [...], communication with the public, inter-institutional information exchange and evacuation" (passed in 2017), in the Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020), or on the websites of the Estonian Health Board or the Ministry of Internal Affairs. [2, 3, 4, 5, 6]

[1] Estonian Ministry of Internal Affairs. 2018. "Instructions for the Development of an Emergency Management Plan" ("Häädalukorra lahendamise plaani koostamise juhend").

[https://www.siseministeerium.ee/sites/default/files/dokumendid/Kriisireguleerimine/hadaolukorra_lahendamise_plaani_koostamise_juhendmaterjali_eelnou.pdf]. Accessed 3 September 2020.

[2] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[3] Estonian Ministry of Internal Affairs. "Home". [<http://www.siseministeerium.ee>]. Accessed 3 September 2020.

[4] Estonian Parliament. 2020. "Emergency Act" ("Häädalukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[5] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[6] Government of Estonia. 2017. "Requirements and procedures for the management of emergencies [...], communication with the public, inter-institutional information exchange and evacuation" ("Häädalukorra lahendamise juhtimine, [...] avalikkuse teavitamise ja asutustevahelise teabevahetuse ning ulatusliku evakuatsiooni läbiviimise nõmmed ja kord").

[<https://www.riigiteataja.ee/akt/128062017039>]. Accessed 3 September 2020.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1, No = 0

Current Year Score: 1

Estonia's national public health system is monitoring healthcare associated infections (HCAIs) that take place in healthcare facilities.

The Estonian Health Board has a landing page dedicated to HCAIs. The page states that Estonia participates in a variety of HCAI surveillance projects, including a European Center for Disease Prevention and Control study to monitor the spread of *C.difficile* in hospital settings, a project to monitor HCAIs in intensive care, and a study to monitor HCAIs in surgical settings.

[1]

Additionally, per the Communicable Diseases Prevention and Control Act (passed in 2003 and revised in 2020), doctors in Estonia are required to report HCAI outbreaks to the Estonian Health Board in a timely manner and to develop guidelines for the prevention of HCAIs. [2, 3]

[1] Estonian Health Board. "Healthcare associate infections" ("Haiglanakkused").

[<https://www.terviseamet.ee/et/nakkushaigused-menuu/tervishoiutootajale/haiglanakkus>]. Accessed 4 September 2020.

[2] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje

seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[3] Estonian Parliament. 2010. "Procedures for developing guidelines on the surveillance, prevention, and liquidation of healthcare associated infections; on the surveillance by microbiology and virology laboratories of healthcare associated infections and drug resistant pathogens; and on the provision of such information to the Health Board" ("Haiglanakkuste seire, ennetamise ja tÄµrje abinÄµude ning sellekohase teabe edastamise kord ning mikrobioloogia- ja viroloogialaborist haiglanakkuse laboratoorse seire ning mikroobide ravimresistentsuse uurimise tulemuste Terviseametile edastamise kord"). Accessed 4 September 2020.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Estonia has a national requirement for ethical review before beginning a clinical trial.

Section 93 of the Estonian Medicinal Products Act (passed in 2004 and last revised in 2020) requires that anyone who wishes to carry out a clinical trial must first receive the approval of a medical ethics committee and the Estonian Agency of Medicines [1]. An application for the authorisation of a clinical trial must be submitted to the Estonian Agency of Medicines no later than two months before the planned start date of the trial; the application must simultaneously be sent to an ethics committee [1, 2].

The two primary medical ethics committees in Estonia are the Tallinn Medical Trials Ethics Committee and the Tartu University Human Trials Ethics Committee [3].

[1] Estonian Parliament. 2020. "Medicinal Products Act" ("Ravimiseadus").

[<https://www.riigiteataja.ee/akt/105122012005?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Ministry of Social Affairs. 2015. "Procedures and Conditions for the Execution of a Clinical Trial" ("Ravimi kliinilise uuringu teostamise tingimused ja kord"). [<https://www.riigiteataja.ee/akt/950921?leiaKehtiv>]. Accessed 3 September 2020.

[3] Estonian Agency of Medicines. 2015. "Ethics committees" ("Eetikakomiteed").

[<https://www.ravimiamet.ee/eetikakomiteed>]. Accessed 3 September 2020.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

No evidence could be found in the Estonian Medicinal Products Act, the Ministry of Social Affairs' regulation on the conduct of clinical trials, or on the websites of the Estonian Health Board or the Estonian Agency of Medicines, of an expedited clinical trial approval process for use during pandemics. [1, 2, 3, 4]

The Estonian Medicinal Products Act (passed in 2004 and last revised in 2020) does require ethics approval for clinical trials, but does not include any detail on expedited approvals. [1] Similarly, there is no information about expedited approvals via the medical ethics committee or the Estonian Agency of Medicines, the two agencies outlined in the Medicinal Products Act (passed in 2004 and last revised in 2020) as responsible for ethics approval of clinical trials.

[1] Estonian Parliament. 2020. "Medicinal Products Act" ("Ravimiseadus").

[<https://www.riigiteataja.ee/akt/105122012005?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Ministry of Social Affairs. 2015. "Procedures and Conditions for the Execution of a Clinical Trial" ("Ravimi kliinilise uuringu teostamise tingimused ja kord"). [<https://www.riigiteataja.ee/akt/950921?leiaKehtiv>]. Accessed 3 September 2020.

[3] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 3 September 2020.

[4] Estonian Agency of Medicines. [<http://ravimiamet.ee>]. Accessed 3 September 2020.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a government agency in Estonia that is responsible for approving new medical countermeasures (MCMs) for humans.

The Estonian Agency of Medicines is responsible for approving new MCMs in coordination with medical ethics committees [1]. The Agency's competencies include marketing authorization, inspection, import control, licensing, market control, quality control, medicines advertising and promotion, clinical trials control, and pharmacovigilance [2]. Once a medicine is approved, it is added to the Register of Medicinal Products along with detailed information about its pharmaceutical properties [1, 3].

[1] Estonian Parliament. 2020. "Medicinal Products Act" ("Ravimiseadus").

[<https://www.riigiteataja.ee/akt/105122012005?leiaKehtiv>]. Accessed 3 September 2020.

[2] World Health Organization (WHO). 2011. "Estonia Pharmaceutical Country Profile".

[http://www.who.int/medicines/areas/coordination/estonia_pharmaceutical_profile.pdf]. Accessed 3 September 2020.

[3] Estonian Register of Medicinal Products. "Ravimiregister" ("Medical Register"). [<http://ravimiregister.ee>]. Accessed 3 September 2020.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 1

There is an expedited process for approving medical countermeasures (MCMs) for human use during public health emergencies.

The Estonian Medicinal Products Act (passed in 2004 and last revised in 2020) stipulates that the Estonian Agency of Medicines may permit the use of certain unregistered medicines or remove certain requirements (e.g., clinical trials) during national emergencies in accordance with the Estonian Emergency Act (passed in 2017 and revised in 2020). [1, 2] The outbreak of a disease constitutes a national emergency pursuant to the Emergency Act and associated legislation. [1, 3]

[1] Estonian Parliament. 2020. "Medicinal Products Act" ("Ravimiseadus").

[<https://www.riigiteataja.ee/akt/105122012005?leiaKehtiv>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 3 September 2020.

[3] Government of Estonia. 2017. "List of events that could lead to an emergency and that are subject to a risk assessment, and the authorities in charge of preparing an emergency risk assessment" ("Loetelu sündmustest, mis võivad põhjustada hädaolukorra ja mille kohta koostatakse riskianalüüs, ning hädaolukorra riskianalüüsi koostamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/128062017033>]. Accessed 3 September 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1, No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is a national disaster risk reduction strategy for epidemics and pandemics.

In 2018, the Estonian Health Board published a risk analysis with an overview of Estonia's vulnerabilities to infectious diseases, as well as several possible risk scenarios, their likelihood, and potential mitigation strategies. The document addresses a number of specific infectious diseases, including the flu, MERS, SARS, E. coli, Ebola, measles, and Hepatitis A. This risk analysis is written in accordance with the requirements of the Estonian Emergency Act and its annexes [2, 3].

[1] Estonian Health Board. 2018. "Healthcare-related event risk analysis" ("TervishoiusÄndmuse riskianalÄs"). [https://www.terviseamet.ee/sites/default/files/Tervishoid/tervishoiusundmuse_riskianaluus.pdf]. Accessed 4 September 2020.

[2] Estonian Parliament. 2020. "Emergency Act" ("HÄdaolukorra seadus").

[https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv]. Accessed 3 September 2020.

[3] Government of Estonia. 2020. "List of events that could lead to an emergency and that are subject to a risk assessment, and the authorities in charge of preparing an emergency risk assessment" ("Loetelu sÄndmustest, mis vÄivad pÄhjustada hÄdaolukorra ja mille kohta koostatakse riskianalÄs, ning hÄdaolukorra riskianalÄsi koostamist juhtivad asutused"). [https://www.riigiteataja.ee/akt/128062017033?leiaKehtiv]. Accessed 3 September 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

Estonia has cross-border agreements with neighboring countries with regards to public health emergencies, and there is no evidence of gaps in implementation.

As a member state of the European Union (EU), Estonia is one of the stakeholders of the European Center for Disease Prevention and Control (ECDC). [1, 2] The ECDC, among other responsibilities, provides support to EU member states during public health emergencies. In addition, within the EU, the Health Security Committee (HSC) provides a platform for the health ministries of member states (including Estonia) to coordinate national responses to cross-border public health emergencies. [3, 4]

[1] European Centre for Disease Prevention and Control. "ECDC activities on epidemic intelligence and outbreak response". [https://www.ecdc.europa.eu/en/about-us/what-we-do/ecdc-activities-epidemic-intelligence-and-outbreak-response]. Accessed 4 September 2020.

[2] European Centre for Disease Prevention and Control. "ECDC activities on preparedness".

[https://ecdc.europa.eu/en/about-us/what-we-do/preparedness]. Accessed 4 September 2020.

[3] European Commission. "Health Security Committee members".

[https://ec.europa.eu/health/preparedness_response/risk_management/hsc/members_en]. Accessed 4 September 2020.

[4] European Union (EU). 2013. "Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC".
[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf]. Accessed 4 September 2020.

5.2.1b

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

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

Current Year Score: 2

Estonia has cross-border protocols with regards to animal health emergencies.

As a European Union (EU) member state, Estonia is entitled to request assistance from the Veterinary Emergency Team. [1, 2] The members of this team are experts in "veterinary sciences, virology, wildlife, laboratory testing, risk management and other relevant areas". [1] It was established by the European Commission and works in coordination with the EU's Community Reference Laboratory. [2] The Veterinary Emergency Team has carried out three emergency missions in Estonia to combat African Swine Fever: one in October 2014, one in March 2016, and a third in August 2016. [3]

[1] European Commission. "Veterinary Emergency Team". [https://ec.europa.eu/food/animals/animal-diseases/emergency-team_en]. Accessed 4 September 2020.

[2] European Commission. 2007. "Decision No 2007/142/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32007D0142&from=EN>]. Accessed 4 September 2020.

[3] European Commission. 2018. "Community Veterinary Emergency Team missions". [https://ec.europa.eu/food/sites/food/files/animals/docs/ad_emergency_cvvet_experts_missions.pdf]. Accessed 4 September 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1, No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 4

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

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

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

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

Current Year Score: 1

2021

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

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

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

5.4.1a

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

Yes = 1, No = 0

Current Year Score: 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 evidence that Estonia has allocated national funds to improve capacity to address epidemic threats within the past three years.

While the Ministry of Social Affairs' National Health Action Plan for 2020-2030 proposes several measures related to infectious diseases, including raising the public's awareness of such diseases and making vaccines more available, although no specific amounts of financial support are indicated. [1]

However, Estonia has allocated national funds to support COVID-19 relief. In April 2020, Ministry of Finance Martin Helme proposed tapping into the country's Stabilization Fund and approving a support package of around USD 3 million to purchase supplies for the health facilities and to support workers and businesses. [2, 3]

No further evidence could be found on the websites of the Estonian Health Board, Veterinary and Food Board, or on the website of the Estonian Government. [4, 5, 6]

[1] Estonian Ministry of Social Affairs. 2020. "Public Health Development Plan 2020-2030" ("Rahvastiku tervise arengukava 2020-2030"). [https://www.sm.ee/sites/default/files/content-editors/eesmargid_ja_tegevused/Tervis/rta_2016._aasta_tegevuskava_en.pdf]. Accessed 9 September 2020.

[2] Estonian Ministry of Finance. April 2020. "Minister of Finance Martin Helme's speech before the Parliament on 7 April 2020 in support of the first reading of the decision on utilizing the Stabilization Fund" ("Rahandusminister Martin Helme kõne Riigikogu tõi riskokogu istungil 7. aprillil 2020 otsuse eelnõu "Stabiliseerimisreservi vahendite kasutusele võtmise" (168 OE) esimesel lugemisel"). [https://www.rahandusministeerium.ee/system/files_force/document_files/stabiliseerimisreservi-kasutusele-votmine-rahandusminister-martin-helme-kone-riigikogus-06042020.pdf]. Accessed 9 September 2020.

[3] Estonian Ministry of Finance. April 2020. "Minister of Finance Martin Helme's speech before the Parliament on 7 April 2020 in support of the first reading of the motion on adopting an additional budget in 2020" ("Rahandusminister Martin Helme kõne 2020. aasta riigi lisaeelarve seaduse eelnõu (171 SE) esimesel lugemisel Riigikogu tõi riskokogu istungil 7. aprillil 2020"). [https://www.rahandusministeerium.ee/system/files_force/document_files/rahandusminister-martin-helme-kone-2020-lisaeelarve-esimesel-lugemisel.pdf]. Accessed 9 September 2020.

[4] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 9 September 2020.

[5] Estonian Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 9 September 2020.

[6] Government of Estonia. [<http://valitsus.ee>]. Accessed 9 September 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 1

There is a publicly identified special emergency public financing mechanism and funds which Estonia can access in the face of a public health emergency.

The Stabilization Reserve Fund is administered by the Estonian Ministry of Finance and can be accessed for the resolution of "an emergency situation, a state of emergency, a state of war or other extraordinary situation or a crisis with material effect".

[1] While the relevant law does not explicitly state that the Fund can be used during public health emergencies, the definition of "emergency" used in the Estonian Emergency Act (passed in 2017 and revised in 2020) includes infectious disease outbreaks and other health crises. [3, 4] The Ministry of Finance reports on the status of the Reserve Fund on a quarterly

basis. [1, 2] In April 2020, the Government of Estonia adopted a resolution to tap into the Reserve Fund to mitigate the economic impacts of the COVID-19 outbreak. [5]

Estonia is not eligible for the World Bank pandemic financing facility. [6, 7].

[1] Estonian Parliament. 2020. "State Budget Act" ("Riigieelarve seadus").

[<https://www.riigiteataja.ee/akt/121042020030?leiaKehtiv>]. Accessed 4 September 2020.

[2] Estonian Ministry of Finance. "Stabilization Reserve Fund".

[<https://www.rahandusministeerium.ee/et/stabiliseerimisreserv>]. Accessed 4 September 2020.

[3] Estonian Parliament. 2020. "Emergency Act" ("Hädaolukorra seadus").

[<https://www.riigiteataja.ee/akt/103032017001?leiaKehtiv>]. Accessed 4 September 2020.

[4] Government of Estonia. 2020. "List of events that could lead to an emergency and that are subject to a risk assessment, and the authorities in charge of preparing an emergency risk assessment" ("Loetelu sündmustest, mis võivad põhjustada hädaolukorra ja mille kohta koostatakse riskianalüüs, ning hädaolukorra riskianalüüsi koostamist juhtivad asutused"). [<https://www.riigiteataja.ee/akt/128062017033?leiaKehtiv>]. Accessed 4 September 2020.

[5] Parliament of Estonia. April 2020. "Parliament adopts resolution to exploit Stabilization Fund" ("Riigikogu võttis vastu otsuse stabiliseerimisreservi kasutamise kohta"). [<https://www.riigikogu.ee/istungi-ulevaated/riigikogu-vottis-vastu-otsuse-stabiliseerimisreservi-kasutamise-kohta>]. Accessed 4 September 2020.

[6] IDA. "Borrowing Countries". [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 4 September 2020.

[7] Pandemic Emergency Financing Facility. 2017. "Pandemic Emergency Financing Facility (PEF): Operational Brief for Eligible Countries". [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 4 September 2020.

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

5.5.4a

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

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

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

Current Year Score: 0

There is insufficient evidence that senior leaders in Estonia have made public commitments to support other countries' capacity to address epidemic threats or to support domestic capacity to respond to such threats. While there is evidence of support for funding to combat the COVID-19 pandemic, there is insufficient evidence of support capacity improvements to address COVID-19 or future threats. In April 2020, Minister of Foreign Affairs Urmas Reinsalu pledged to allocate EUR 100,000 (USD 118,150) to the International Red Cross to support the fight against COVID-19 in Italy in Spain, in addition to 30,000 face masks and 2,000 units of disinfectant. [1] Reinsalu has also publicly stated that Estonia may be able to contribute its expertise in digitization to the fight against the pandemic, although no specific commitments have been made. [2] The website of the Ministry of Foreign Affairs also reports that Estonia has supported Ukraine, Syria, Mali, Iraq and Palestine with EUR 525,000 (USD 620,053) in coronavirus response support through the United Nations Office for the Coordination of Human Affairs (OCHA), although a corresponding statement from the Ministry of Foreign Affairs could not be found. [3] In April 2020, Ministry of Finance Martin Helme proposed tapping into the country's Stabilization Fund and approving a support

package of around USD 3 million to purchase supplies for the health facilities and to support workers and businesses. [4, 5] Finally, the Ministry of Social Affairs' National Health Action Plan for 2020-2030 proposes several measures related to infectious diseases, including raising the public's awareness of such diseases and making vaccines more available, although no specific amounts of financial support are indicated. [6] However, these efforts concentrate on disease response rather than capacity improvement explicitly. No evidence was found on the websites of the Estonian Health Board, World Health Organization, or Ministry of Foreign Affairs that senior leaders in Estonia have committed to supporting domestic or other countries' capacity to respond to disease threats. [7, 8, 9]

- [1] Estonian Ministry of Foreign Affairs. April 2020. "Estonia joins efforts to support Italy and Spain in prevention of the spread of the coronavirus". [<https://vm.ee/en/news/estonia-joins-efforts-support-italy-and-spain-prevention-spread-coronavirus>]. Accessed 9 September 2020.
- [2] Estonian Ministry of Foreign Affairs. May 2020. "Minister Reinsalu stressed the importance of digitalisation in the fight against COVID-19 at a UN digital cooperation webinar today". [<https://vm.ee/en/news/minister-reinsalu-stressed-importance-digitalisation-fight-against-covid-19-un-digital>]. Accessed 9 September 2020.
- [3] Estonian Ministry of Foreign Affairs. May 2020. "Estonia's contribution to international cooperation in fighting the spread of the coronavirus". [<https://vm.ee/en/estonias-contribution-international-cooperation-fighting-spread-coronavirus>]. Accessed 9 September 2020.
- [4] Estonian Ministry of Finance. April 2020. "Minister of Finance Martin Helme's speech before the Parliament on 7 April 2020 in support of the first reading of the decision on utilizing the Stabilization Fund" ("Rahandusminister Martin Helme kõne Riigikogu täiskogu istungil 7. aprillil 2020 otsuse eelnõu 'Stabiliseerimisreservi vahendite kasutusele võtmine' (168 OE) esimesel lugemisel"). [https://www.rahandusministeerium.ee/system/files_force/document_files/stabiliseerimisreservi-kasutusele-votmine-rahandusminister-martin-helme-kone-riigikogu-06042020.pdf]. Accessed 9 September 2020.
- [5] Estonian Ministry of Finance. April 2020. "Minister of Finance Martin Helme's speech before the Parliament on 7 April 2020 in support of the first reading of the motion on adopting an additional budget in 2020" ("Rahandusminister Martin Helme kõne 2020. aasta riigi lisaeelarve seaduse eelnõu (171 SE) esimesel lugemisel Riigikogu täiskogu istungil 7. aprillil 2020"). [https://www.rahandusministeerium.ee/system/files_force/document_files/rahandusminister-martin-helme-kone-2020-lisaeelarve-esimesel-lugemisel.pdf]. Accessed 9 September 2020.
- [6] Estonian Ministry of Social Affairs. 2020. "Public Health Development Plan 2020-2030" ("Rahvastiku tervise arengukava 2020-2030"). [https://www.sm.ee/sites/default/files/content-editors/eesmargid_ja_tegevused/Tervis/rta_2016._aasta_tegevuskava_en.pdf]. Accessed 9 September 2020.
- [7] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 11 October 2020.
- [8] Estonian Ministry of Foreign Affairs. [<https://vm.ee/en>]. Accessed 11 October 2020.
- [9] World Health Organization. "Estonia". [<https://www.who.int/countries/est/>]. Accessed 11 October 2020.

5.5.4b

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

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

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

Current Year Score: 0

There is insufficient evidence that Estonia has provided other countries with financing or technical support to improve capacity to address epidemic threats or requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats. No evidence could be found on the websites of the Estonian Health Board or Ministry of Foreign Affairs, on the website of the World Health Organization, or in the Georgetown Global Health Security

Tracker. [1, 2, 3, 4] While there is evidence of funding support to address the COVID-19 crisis unilaterally and through multi-donor support funds, there is insufficient evidence that these funds have been used for capacity improvements. [4]

[1] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 11 October 2020.

[2] Estonian Ministry of Foreign Affairs. [<https://vm.ee/en>]. Accessed 11 October 2020.

[3] World Health Organization. "Estonia". [<https://www.who.int/countries/est/>]. Accessed 11 October 2020.

[4] Georgetown Global Health Security Tracking. "Funder Profile: Estonia". [<https://tracking.ghscosting.org/details/937/funder>]. Accessed 20 October 2020.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence of a plan for sharing biological materials with other countries that goes beyond influenza. According to Article 19(6) of the Communicable Disease Prevention Act (adopted in 2003 and revised in 2020), "for the purpose of diagnosing an individual with an infectious disease, the Estonian Health Board is permitted to send biological materials to the appropriate laboratory in a foreign country or to an international reference library with the objective of preventing the spread of communicable diseases." However, there is no evidence in this act that materials are shared for the purpose of emergency or non-emergency research. [1] Data shared with a foreign country or international organization must be safeguarded in accordance with the Personal Data Protection Act (passed in 2007 and last updated in 2019). [2] No further evidence of biological materials being shared for emergency or nonemergency research could be found on the websites of the Estonian Health Board, Ministry of Rural Affairs, or National Institute for Health Development. [3, 4, 5]

[1] Estonian Parliament. 2020. "Communicable Diseases Prevention and Control Act" ("Nakkushaiguste ennetamise ja tõrje seadus"). [<https://www.riigiteataja.ee/akt/104072017085>]. Accessed 3 September 2020.

[2] Estonian Parliament. 2019. "Personal Data Protection Act" ("Isikuandmete kaitse seadus").

[<https://www.riigiteataja.ee/akt/104012019011>]. Accessed 2 September 2020.

[3] Estonian Health Board. [<http://terviseamet.ee>]. Accessed 11 October 2020.

[4] Estonian Ministry of Rural Affairs. [<http://agri.ee>]. Accessed 11 October 2020.

[5] National Institute for Health Development. [<http://tai.ee>]. Accessed 11 October 2020.

5.6.1b

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

Yes = 0, No = 1

Current Year Score: 1

No evidence could be found after a survey of the WHO website and international/local media outlets that Estonia has not shared samples in accordance with the PIP framework in the past two years [1].

[1] World Health Organization (WHO). "News: Estonia".

[http://www.euro.who.int/en/countries/estonia/news/news/news?root_node_selection=73341]. Accessed 3 September 2020.

5.6.1c

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

Yes = 0, No = 1

Current Year Score: 1

There is no public evidence that Estonia has failed to share pandemic pathogen samples during an outbreak in the past two years. There is no evidence of Estonia either sharing or failing to share pathogen samples, including coronavirus samples, on the websites of the Estonian Health Board, the National Institute for Health Development, the Ministry of Rural Affairs, the Veterinary and Food Board, or the World Health Organization, or in the Estonian media. [1, 2, 3, 4, 5]

[1] Estonian Health Board. [<http://www.terviseamet.ee/info/uudised.html>]. Accessed 2 September 2020.

[2] National Institute for Health Development. [<http://www.tai.ee>]. Accessed 3 September 2020.

[3] Estonian Ministry of Rural Affairs. [<http://www.agri.ee>]. Accessed 2 September 2020.

[4] Veterinary and Food Board. [<http://vet.agri.ee>]. Accessed 3 September 2020.

[5] World Health Organization (WHO). "Disease Outbreak News". [<http://www.who.int/csr/don/en>]. Accessed 3 September 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 75

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 4

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: 3

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 4

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: 4

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 99.9

2011

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: 0.91

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: 0.2

2017

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 0

The latest available figures indicate that informal sector employment accounts for less than 25% of total employment in Estonia.

A 2011 report from the World Bank stated that 9.8% of Estonia's population was employed in the informal sector, according to figures from 2007. [1]

The statistical databases maintained by the World Bank and the International Labor Organization do not provide statistics on informal employment in Estonia. [2, 3, 4]

There is no evidence of relevant statistics on the website of Statistics Estonia, Estonia's state statistics bureau. [5]

A journal article from 2015 notes that informal employment accounted for 15.7% of Estonia's gross domestic product (GDP) in 2013, but does not provide informal employment as a percentage of total employment. [6]

- [1] Mihails Hazans. December 2011. "Informal Workers across Europe. Evidence from 30 European Countries." World Bank. [https://openknowledge.worldbank.org/bitstream/handle/10986/3681/WPS5912.pdf?sequence=1&isAllowed=y]. Accessed 9 August 2020.
- [2] World Bank. "Informal employment (% of total non-agricultural employment) - Estonia" [https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=EE]. Accessed 9 August 2020.
- [3] International Labor Organization. "Country profiles." [https://ilostat.ilo.org/data/country-profiles/]. Accessed 9 August 2020.
- [4] International Labor Organization. "Statistics on the informal economy." [https://ilostat.ilo.org/topics/informality/]. Accessed 9 August 2020.
- [5] Statistics Estonia. [http://stat.ee].
- [6] Williams, C. and Horodnic, I. "Explaining and tackling the shadow economy in Estonia, Latvia and Lithuania: a tax morale approach". Baltic Journal of Economics 15/2. [https://www.tandfonline.com/doi/full/10.1080/1406099X.2015.1114714]. Accessed 9 September 2020.

6.2.3c

Coverage of social insurance programs (% of population)

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

Current Year Score: 3

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 2

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: 0.3

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 3

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 69.05

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: 1.44

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 78.24

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: 426.5

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 19.99

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 30.5

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 21.2

2016

WHO

6.5.2 Access to potable water and sanitation

6.5.2a

Percentage of homes with access to at least basic water infrastructure

Input number

Current Year Score: 99

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 99

2017

UNICEF; Economist Impact

6.5.3 Public healthcare spending levels per capita

6.5.3a

Domestic general government health expenditure per capita, PPP (current international \$)

Input number

Current Year Score: 1786.11

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: 2

2018

Wellcome Trust Global Monitor 2018