

Netherlands

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

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

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

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

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

Current Year Score: 1

The Netherlands has an up-to-date national antimicrobial resistance (AMR) plan but there is insufficient evidence of surveillance, detection, and reporting of AMR pathogens. [1] In 2015, the Ministries of Health, Welfare, Sport and Economic Affairs of the Netherlands drafted the Dutch National Action Plan on Antimicrobial Resistance (AMR), based on strategic objectives listed by the World Health Organization (WHO) Global Action Plan for AMR. [2] The plan acknowledges the importance of surveillance, but provides little information about the methods of surveillance. This plan lasted until 2019, since then no updated plan has been published. That said, AMR still ranks high on the Dutch political agenda, and the six objectives mentioned in the 2015 AMR plan continue to be developed. [1,2] For example, the 10 Regional cooperative networks for AMR (Regionale zorgnetwerken voor antibioticaresistentie) that were set up in 2017 continue to play a significant role in controlling antibiotic resistance in a future-proof manner. [3] Finally, the Netherlands is involved in the Global Health Security Agenda and the Joint Action on Antimicrobial Resistance and the Dutch model on AMR serves as a model system for other WHO members [3,4].

[1] Government of the Netherlands. 2019. "Letter to the house of representatives on the antimicrobial resistance approach". ("Kamerbrief over aanpak antibioticaresistentie").

[<https://www.rijksoverheid.nl/documenten/kamerstukken/2019/10/14/kamerbrief-over-aanpak-antibioticaresistentie>]. Accessed 15 January 2021.

[2] Ministry of Health, Welfare and Sports of the Kingdom of the Netherlands. 24 June 2015. "Dutch National Action Plan on AMR". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed on 15 January 2021.

[3] Government of the Netherlands. "Antimicrobial resistance approach". ("Aanpak antibioticaresistentie").

[<https://www.rijksoverheid.nl/onderwerpen/antibioticaresistentie/aanpak-antibioticaresistentie>]. Accessed 15 January 2021.

[4] Global Health Security Agenda. 2021. "Member Commitments". [<https://ghsagenda.org/member-commitments/>]

Accessed on 15 January 2021.

1.1.1b

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

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

Current Year Score: 2

The Netherlands has a national laboratory system that can test for all 7+1 AMR pathogens. Since 2008, a large portion of the Dutch microbiology laboratories share their susceptibility data on AMR pathogens via the Infectious Diseases Surveillance

Information System for Antibiotic Use (abbreviated ISIS-AR) with the National Institute for Public Health and the Environment (the Rijksinstituut voor Volksgezondheid en Milieu; RIVM), which reports to the Ministry of Health, Welfare and Sport [1]. According to the 2019 European Centre for Disease Prevention and Control AMR resistance report, there are national laboratories testing for Escherichia coli, Klebsiella pneumoniae, Streptococcus pneumoniae and Staphylococcus aureus [2]. There is also a national tuberculosis reference laboratory for M. tuberculosis susceptibility testing [3]. The Netherlands is part of the Gonococcal Antimicrobial Surveillance Program (GASP) for N. gonorrhoea testing [4]. According to the National Institute for Public Health and the Environment's document Monitoring of Antimicrobial Resistance and Antibiotic Usage in Animals in the Netherlands in 2016, there are reference laboratories for Shigella and Salmonella spp. [5].

[1] The National Institute for Public Health and the Environment. 2019. "ISIS-AR". [<https://www.rivm.nl/isis-ar>]. Accessed 16 January 2021.

[2] European Centre for Disease Prevention and Control (ECDC). 2020. "Country summaries - antimicrobial resistance in the EU/EEA 2019 Open file in new window".
[<https://www.ecdc.europa.eu/sites/default/files/documents/Country%20summaries-AER-EARS-Net%20202019.pdf>]

Accessed 16 January 2021.

[3] European Centre for Disease Prevention and Control (ECDC). 2020. "Tuberculosis surveillance and monitoring in Europe 2020 - 2018 data". [<https://www.ecdc.europa.eu/en/publications-data/tuberculosis-surveillance-and-monitoring-europe-2020-2018-data>] Accessed 16 January 2021.

[4] World Health Organisation. "The Gonococcal Antimicrobial Surveillance Programme (GASP)".

[https://www.who.int/reproductivehealth/topics/rtis/gasp_network/en/]. Accessed 16 January 2021.

[5] The National Institute for Public Health and the Environment. 2020. "NethMap 2020 - Consumption of antimicrobial agents and antimicrobial resistance among medically important bacteria in the Netherlands in 2019".

[<https://www.wur.nl/en/Research-Results/Research-Institutes/Bioveterinary-Research/In-the-spotlight/Antibiotic-resistance-2/MARAN-reports.htm>]. Accessed 16 January 2021.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands conducts on-going surveillance activities of antimicrobial residues and AMR organisms in soil, air and water. The National Institute for Public Health and the Environment (RIVM), which reports to the Ministry of Health, Welfare and Sport, conducts regular evaluations of antibiotic amounts in the soil and air around farms [1]. In addition, in 2017 the RIVM ran a study that included testing for such residues in open waters where people swim, and another study that included testing for such residues in waste and sewage water [2, 3]. In 2017 RIVM also published a report that discusses how AMR organisms in the environment can be reduced. [4]

[1] The National Institute for Public Health and the Environment. "Antimicrobial resistance in animals, food, and the environment". ("Antibioticaresistentie in dieren, voedsel en milieu").

[<https://www.rivm.nl/antibioticaresistentie/antibioticaresistentie-in-dieren-voedsel-milieu>]. Accessed 16 January 2021.

[2] The National Institute for Public Health and the Environment. 2017. Resistant Bacteria in open waters: a study in City Swims". ("Zwemmersstudie: onderzoek naar antibioticaresistente bacteriën in open water").

[<https://www.rivm.nl/antibioticaresistentie/antibioticaresistentie-bacterien-in-open-water-onderzoek-bij-city-swims>].

Accessed 16 January 2021.

[3] The National Institute for Public Health and the Environment. 2017. "Resistant Bacteria in Sewage Water ". ("Resistente

bacteriën in afvalwater"). [<https://www.rivm.nl/nieuws/resistente-bacterien-in-afvalwater>]. Accessed 16 January 2021.
[4] The National Institute for Public Health and the Environment. 2017. "Sources of AMR in the environment and potential counter measures". ("Bronnen van antibioticaresistentie in het milieu en mogelijke maatregelen").
[<https://www.rivm.nl/bibliotheek/rapporten/2017-0058.pdf>]. Accessed 16 January 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

The Netherlands has regulations for sale or prescribing antibiotics in humans, and there is no evidence of gaps in enforcement. Human antibiotics can only be prescribed by doctors, who must comply with strict guidelines and indications [1]. The Healthcare and Youth Inspectorate monitors compliance with the guidelines that are established by the Medicine Evaluation Board (College voor de Beoordeling van Geneesmiddelen) under the Human Medicines Law [2, 3]. The Healthcare and Youth Inspectorate runs a project called "Supervision of Infection Prevention and Regional Care Networks' Antimicrobial Resistance" (Toezicht Infectiepreventie en Regionale Zorgnetwerken Antibioticaresistentie; TIRZA) to ensure adherence to these rules. [2] In particular, the Healthcare and Youth Inspectorate visits facilities to check compliance. [2]

[1] The Government of the Netherlands. "Antibiotic resistance in healthcare services". ("Antibioticaresistentie in de zorg"). [<https://www.rijksoverheid.nl/onderwerpen/antibioticaresistentie/antibioticaresistentie-in-de-gezondheidszorg>]. Accessed 16 January 2021.

[2] Healthcare and Youth Inspectorate. "Regional AMR healthcare networks". ("Regionale zorgnetwerken antibioticaresistentie"). [<https://www.igj.nl/onderwerpen/infectieziekten/antibioticaresistentie>]. Accessed 16 January 2021.

[3] Medicine Evaluation Board. 2018. "Home". [<https://www.cbg-meb.nl>]. Accessed 16 January 2021.

1.1.2b

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

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

Current Year Score: 2

The Netherlands has legislation in place requiring prescriptions for antibiotic use in animals, and there is no evidence of gaps in enforcement. Only veterinary physicians can prescribe animal antibiotics, and cattle owners can only provide antibiotics under strict supervision. [1] The Dutch Authority for Food and Consumer Product Safety (Nederlandse Voedsel- en Warenautoriteit; NVWA) is in charge of control of the use of antibiotics by veterinary physicians, farmers and cattle breeders [2]. The NVWA regularly checks whether or not farmers and veterinarians adhere to strict rules, the NVWA does this on a project basis or when it receives a notification that something might have gone wrong. [3] The Dutch Veterinary Medicine Institute (Stichting Diergeneesmiddelen Autoriteit; SDA) promotes the correct use of antibiotics in Dutch animal husbandry [4]. Additionally, poultry, dairy, veal, and pig farmers have to inform the SDA when they are using antibiotics for animals. [4] That way the SDA has better control over the proper use of antibiotics in animals.

[1] National Institute for Public Health and the Environment. 2017. "Livestock farming rules use antibiotics". ("In de veehouderij gelden strenge regels voor het gebruik van antibiotica:").

[<https://www.rivm.nl/antibioticaresistentie/antibioticaresistentie-in-dieren-voedsel-en-milieu/maatregelen>]. Accessed 16

January 2021.

- [2] Dutch Authority for Food and Consumer Product Safety. "Antibiotics in Animal Husbandry. ("Antibiotica in de veehouderij"). [<https://www.nvwa.nl/onderwerpen/antibiotica-in-de-veehouderij>]. Accessed 16 January 2021.
- [4] Dutch Authority for Food and Consumer Product Safety. "The role of the NVWA in regards to animal medicine guidelines". ("Rol NVWA bij toezicht op regels diergeneesmiddelen"). [<https://www.nvwa.nl/onderwerpen/antibiotica-in-de-veehouderij/rol-nvwa>]. Accessed 23 February 2021
- [4] Dutch Veterinary Medicine Institute. "Home". [<https://www.autoriteitdiergeesmiddelen.nl/nl>]. Accessed 16 January 2021.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has national plans on zoonotic diseases. In 2016, the Dutch government published the Policy Handbook on Crisis Decision Making and Crisis Communication and Zoonosis, which had been drafted by the Ministries of Health, Welfare and Sports and Economic Affairs. [1] This document specifically deals with risks that are associated with zoonoses, and outlines how best to inform the public on the effects of a zoonotic crisis. In addition, in 2017 the government adopted the Strategic Policy Plan for the Control of Infectious Diseases 2016-2021, which had been drafted by the National Institute for Public Health and the Environment, and which details national guidelines on surveillance and control of zoonotic pathogens, alongside other infectious diseases [2]. Furthermore, in 2015 the Netherlands issued the Decree on Zoonotic Diseases, which implements European Union (EU) Directive 2003/99/EG. [3] This decree outlines how research pertaining to zoonotic diseases should be done, and how long results and samples may be stored.

[1] Government of the Netherlands. 2016. "Policy Handbook on Crisis Decision Making and Crisis Communication and Zoonosis". ("Beleidshandboek crisisbesluitvorming en crisiscommunicatie zoönose").

[<https://www.rijksoverheid.nl/documenten/publicaties/2016/11/23/beleidshandboek-crisisbesluitvorming-en-crisiscommunicatie-zoonose>]. Accessed 17 January 2021.

[2] National Institute for Public Health and the Environment. 2017. "Strategic Policy Plan for the Control of Infectious Diseases 2016-2021". ("RIVM-Centrum Infectieziekte-bestrijding Strategie 2016-2021").

[<https://www.rivm.nl/documenten/strategisch-beleidsplan-centrum-infectieziektenbestrijding-2016-2021>]. Accessed 17 January 2021.

[3] Government of the Netherlands. 2015. "Decree on zoonotic diseases". ("Besluit zoönosen").

[<https://wetten.overheid.nl/BWBR0036054/2015-01-01>]. Accessed 17 January 2021.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has documents that include measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. In 2015, the Ministries of Health, Welfare, Sport and Economic Affairs of the Netherlands drafted the "Dutch National Action Plan on Antimicrobial Resistance (AMR)", which highlights the use of the One Health program as a risk identification system. [1] While this action plan ceased to be effective in 2019, the One Health concept continues to be used to promote the information exchange and cooperation between the medical and veterinary sector. [2] In so doing, One Health aims to eradicate zoonotic disease spillover events. The One Health platform specifically highlights the importance of zoonotic diseases and how these can affect both humans and animals. [3] Furthermore, the 2019 State of Zoonosis report advocates for better hygienic measures in order to prevent zoonosis in slaughterhouses. [4] Those working in slaughterhouses must wear protective clothing and vehicles, buildings, and products must be thoroughly cleaned to prevent zoonoses from spreading to humans. [4] The Netherlands specifically tries to prevent the spreading of Chlamydia psittaci, Coxiella burnetii, Echinococcus multilocularis between humans and animals.

[1] Ministry of Health, Welfare and Sports. 2015. "Dutch National Action Plan on Antimicrobial Resistance (AMR)". ("Aanpak antibioticaresistentie"). [<https://www.rijksoverheid.nl/documenten/kamerstukken/2019/10/14/kamerbrief-over-aanpak-antibioticaresistentie>]. Accessed 15 January 2021.

[2] The National Institute for Public Health and the Environment. 2020. "Zoonotic diseases". ("Zoönosen"). [<https://www.rivm.nl/zo-nosen>]. Accessed 17 January 2021.

[3] The National Institute for Public Health and the Environment. 2015. "Signalling and risk assessment of emerging zoonoses a One Health approach in the Netherlands". [<https://onehealth.nl/sites/default/files/2018-06/Risk%20analysis%20structure%20brochure.pdf>]. Accessed 17 January 2021.

[4] National Institute for Public Health and the Environment. 2020. "State of Zoonosis". ("Staat van Zoönosen"). [<https://www.rivm.nl/bibliotheek/rapporten/2020-0130.pdf>]. Accessed 27 February 2021.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands has guidelines that account for the surveillance of at least three zoonotic pathogens of public health concern, but there is insufficient evidence of guidelines that account for control measures. The Strategic Policy Plan for the Control of Infectious Diseases 2016-2021, which was drafted by the National Institute for Public Health and the Environment (RIVM), mentions there are systems in place for the surveillance of familiar zoonoses such as salmonella, campylobacter and toxoplasma, as well as of "new" zoonoses such as Q fever, livestock-associated MRSA (methicillin-resistant Staphylococcus aureus) and avian influenza [1]. In particular, the RIVM uses Whole Genome Sequencing (WGS) to improve surveillance systems in regards to Salmonella and Listeria [1]. Furthermore, the RIVM engages in clinical research, for example they calculated the effect of hygienic protocols on the existence of campylobacter in poultry. [1] In so doing, the RIVM aims to control the spreading of zoonoses. In addition, the yearly State of Zoonoses in the Netherlands report from 2020 shows trends in the prevalence of a plethora of zoonotic diseases, including the ones mentioned in the Strategic Policy Plan, as well as leptospirosis, hantavirus infection, brucellosis, and food-borne bacterial infections [2]. RIVM advises and reports to various Dutch ministries, including the Ministry of Health, Welfare and Sport [3]. There is no evidence of guidelines that account for control of zoonotic pathogens on the websites of the Ministry of Health, Welfare and Sport, the National Institute for Public Health and the Environment, or the Ministry of Agriculture, Nature, and Food Quality. [4, 5, 6]

[1] National Institute for Public Health and the Environment. 2017. "Strategic Policy Plan for the Control of Infectious Diseases 2016-2021". ("RIVM-Centrum Infectieziekte-bestrijding Strategie 2016-2021").

[<https://www.rivm.nl/documenten/strategisch-beleidsplan-centrum-infectieziektebestrijding-2016-2021>]. Accessed 17 January 2021.

[2] National Institute for Public Health and the Environment. 2020. "State of Zoonoses in the Netherlands -2019". ("Staat van Zoonosen 2019"). [<https://www.rivm.nl/bibliotheek/rapporten/2020-0130.pdf>]. Accessed 17 January 2021.

[3] Government of the Netherlands. "National Institute for Public Health en the Environment". ("Rijksinstituut voor Volksgezondheid en Milieu - RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 17 January 2021.

[4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.

[5] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.

[6] Ministry of Agriculture, Nature, and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 3 March 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the Netherlands has a united dedicated to zoonotic diseases that functions across ministries through joint funding/operations.

Within the National Institute for Public Health and the Environment (RIVM), the Center for Zoonoses and Environmental Microbiology (Z&O) is responsible for the early warning and risk assessment of the transmission of pathogenic microorganisms from animals, food and the environment to humans [1]. As part of the RIVM, the Z&O advises and reports to different Dutch ministries, including the Ministry of Health, Welfare and Sports, the Ministry of Agriculture and the Ministry of Economic Affairs and Climate. [2]

[1] National Institute for Public Health and the Environment. 2018. "Centre for Zoonoses and Environmental Microbiology". [https://www.rivm.nl/en/About_RIVM/Organisation/Centres/Centre_for_Zoonoses_and_Environmental_Microbiology]. Accessed 17 January 2021

[2] Government of the Netherlands. 2018. " National Institute for Public Health and the Environment'. ("Rijksinstituut voor Volksgezondheid en Milieu RIVM".) [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 17 January 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. Livestock owners and veterinarians must report dangerous animal diseases through the National Reporting Line for Veterinary Diseases (Landelijk Meldpunt Dierziekten) of the Netherlands Food and Consumer Product

Safety Authority (NVWA) [1]. The National Reporting Line for Veterinary Diseases can be reached at +31 45 546 31 88. [1] Within the National Institute for Public Health and the Environment (RIVM), the Center for Zoonoses and Environmental Microbiology (Z&O) is responsible for the early warning and risk assessment of the transmission of pathogenic microorganisms from animals, food and the environment to humans, and to this end the Z&O monitors livestock infections [2]. As part of the RIVM, Z&O advises and reports to different Dutch ministries, including the Ministry of Health, Welfare and Sports [3]. Since 2005, the Netherlands also has a regulation on the prevention, control, and monitoring of contagious animal diseases, zoonoses, and transmissible spongiform encephalopathy. [4] This regulation was last updated on 1 January 2021.

- [1] Food and Consumer Product Safety Authority. National Reporting Line Veterinary Diseases ("Landelijk Meldpunt Dierziekten"). [<https://www.nvwa.nl/onderwerpen/dierziekten/melden-dierziekte>]. Accessed 18 January 2021.
- [2] National Institute for Public Health and the Environment. 2018. "Centre for Zoonoses and Environmental Microbiology". [https://www.rivm.nl/en/About_RIVM/Organisation/Centres/Centre_for_Zoonoses_and_Environmental_Microbiology]. Accessed 18 January 2021.
- [3] Government of the Netherlands. 2018. " National Institute for Public Health and the Environment'. ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 17 January 2021.
- [4] Government of the Netherlands. 1 January 2021. "Regulation on the prevention, control, and monitoring of contagious animal diseases, zoonoses, and TSE's". ("Regeling preventie, bestrijding en monitoring van besmettelijke dierziekten en zoönosen en TSE's"). [<https://wetten.overheid.nl/BWBR0018397/2021-01-01>]. Accessed 18 January 2021.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a regulation that safeguards the confidentiality of information generated through surveillance activities for animals. In 2005, the Netherlands introduced the regulation on the prevention, control, and monitoring of contagious animal diseases, zoonoses, and transmissible spongiform encephalopathy. [1] This regulation was last updated on 1 January 2021. Article 15 of this regulation explains how data is saved in a database. Article 15b and 15c further specify that proper compliance with the General Data Protection Regulation (GDPR) and other privacy legislation must be ensured. Furthermore, the Netherlands Food and Consumer Product Safety Authority (NVWA) is often involved with the registration of information on animal diseases because it must be notified when certain diseases or zoonoses occur. [2] The complete list of notifiable diseases can be found in the regulation mentioned above and on the NVWA website.

- [1] Government of the Netherlands. 1 January 2021. "Regulation on the prevention, control, and monitoring of contagious animal diseases, zoonoses, and TSE's". ("Regeling preventie, bestrijding en monitoring van besmettelijke dierziekten en zoönosen en TSE's"). [<https://wetten.overheid.nl/BWBR0018397/2021-01-01>]. Accessed 18 January 2021.
- [2] Netherlands Food and Consumer Product Safety Authority. "List of notifiable animal diseases". ("Lijst aangifteplichtige dierziekten"). [<https://www.nvwa.nl/onderwerpen/dierziekten/lijst-aangifteplichtige-dierziekten>] Accessed 18 January 2021.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands conducts surveillance of zoonotic disease in wildlife. The Center for Zoonoses and Environmental Microbiology, a center that is part of the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), has surveillance systems in place for detecting non-human infection sources (such as ticks, rodents and wildlife) [1]. A 2010 report titled "Emerging zoonoses: early warning and surveillance in the Netherlands" indicates that surveillance is conducted for 86 zoonoses, including anthrax, botulism, Q-fever, and rabies. [2] The report indicates that surveillance is done on animals such as bats, foxes, migratory birds, and other wildlife, using blood samples. [2] The Netherlands uses (blood) samples to test for zoonoses. [2] No more recent reports of such surveillance were found on the website of the RIVM or the Ministry of Health, Welfare and Sport. [3,4] The RIVM's 2019 report on the state of zoonoses does not refer to wildlife, instead focusing on zoonoses in livestock and pets (such as dogs and cats). [5]

[1] National Institute for Public Health and the Environment. 2018. "Centre for Zoonoses and Environmental Microbiology". [https://www.rivm.nl/en/About_RIVM/Organisation/Centres/Centre_for_Zoonoses_and_Environmental_Microbiology]. Accessed 18 January 2021.

[2] National Institute for Public Health and the Environment. 2010. "Emerging zoonoses: early warning and surveillance in the Netherlands". [<https://www.rivm.nl/bibliotheek/rapporten/330214002.pdf>]. Accessed 24 February 2021.

[3] National Institute for Public Health and the Environment. "Home". [www.rivm.nl]. Accessed 26 February 2021.

[4] Ministry of Health, Welfare and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 26 February 2021.

[5] The National Institute for Public Health and the Environment. 2020. "NethMap 2020 - Consumption of antimicrobial agents and antimicrobial resistance among medically important bacteria in the Netherlands in 2019".

[<https://www.wur.nl/en/Research-Results/Research-Institutes/Bioveterinary-Research/In-the-spotlight/Antibiotic-resistance-2/MARAN-reports.htm>]. Accessed 16 January 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 31.44

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 5.57

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

In the Netherlands, the national plans and policy documents on zoonotic disease do not specify mechanisms for working with the private sector in controlling or responding to zoonoses. No such information can be found in the Dutch government's 2016 Policy Handbook on Crisis Decision Making and Crisis Communication and Zoonosis [1]. Furthermore, the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) does not mention the private sector in its Strategic Policy Plan for the Control of Infectious Diseases 2016-2021. The RIVM advises several ministries, such as the Ministry of Health, Welfare and Sports and the Ministry of Agriculture. [3] With that said, private businesses, such as private veterinary clinics, must notify the Netherlands Food and Consumer Product Safety Authority (Nederlandse Voedsel en Warenautoriteit; NVWA) if they suspect that zoonotic diseases affect animals. [4] The need to notify the NVWA is based on the Regulation on the Prevention, Control, and Monitoring of Contagious Animal Diseases, Zoonoses, and Transmissible Spongiform Encephalopathy (TSE). [5] There is no information available on the websites of the Ministry of Health, Welfare and Sport or the Ministry of Agriculture, Nature and Food Quality. [6,7]

[1] Government of the Netherlands. 2016. "Policy Handbook on Crisis Decision Making and Crisis Communication and Zoonosis". ("Beleidshandboek crisisbesluitvorming en crisiscommunicatie zoönose").

[<https://www.rijksoverheid.nl/documenten/publicaties/2016/11/23/beleidshandboek-crisisbesluitvorming-en-crisiscommunicatie-zoönose>]. Accessed 17 January 2021.

[2] National Institute for Public Health and the Environment. 2017. "Strategic Policy Plan for the Control of Infectious Diseases 2016-2021". ("RIVM-Centrum Infectieziekte-bestrijding Strategie 2016-2021").

[<https://www.rivm.nl/documenten/strategisch-beleidsplan-centrum-infectieziektebestrijding-2016-2021>]. Accessed 17 January 2021.

[3] Government of the Netherlands. 2018. " National Institute for Public Health and the Environment'. ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 17 January 2021.

[4] National Institute for Public Health and the Environment. 2018. "Centre for Zoonoses and Environmental Microbiology". [https://www.rivm.nl/en/About_RIVM/Organisation/Centres/Centre_for_Zoonoses_and_Environmental_Microbiology]. Accessed 18 January 2021.

[5] Government of the Netherlands. 1 January 2021. "Regulation on the prevention, control, and monitoring of contagious animal diseases, zoonoses, and TSE's". ("Regeling preventie, bestrijding en monitoring van besmettelijke dierziekten en zoonosen en TSE's"). [<https://wetten.overheid.nl/BWBR0018397/2021-01-01>]. Accessed 18 January 2021.

[6] Ministry of Health, Welfare and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 26 February 2021.

[7] Ministry of Agriculture, Nature, and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 3 March 2021.

1.3 BIOSECURITY

1.3.1 Whole-of-government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that the Netherlands has in place a record, updated within the past 5 years, of the facilities in which especially dangerous pathogens and toxins are stored, including details on inventories. Under the 2011 Law on Strategic Services, last updated in 2019, inspections of facilities in possession of potentially dangerous pathogens and toxins must be performed every half year. Details on the goods (including description, amount, value and recent transport) must be reported to a government inspector. [1] The government has therefore tasked the Biosecurity Office with managing a list of facilities that handle high-risk biological material. [2] Although the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention, these reports do not make mention of inventory management. [3] The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities.

[1] Government of the Netherlands. 2019. "Law on Strategic Services". ("Wet Strategische Diensten").

[<https://wetten.overheid.nl/BWBR0030545/2019-12-24>]. Accessed 11 February 2021.

[2] Biosecurity Office. 2014. "Biosecurity Office: annual report 2013-2014".

[<https://www.bureaubiosecurity.nl/sites/default/files/2018-05/Annual%2520report%25202013-2014%2520Biosecurity%2520Office%2520C%2520digitale%2520versie.pdf>]. Accessed 11 February 2021.

[3] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands has in place biosecurity legislation or regulations that address requirements such as physical containment, operation practices, failure reporting systems or cyber-security of facilities in which especially dangerous pathogens and toxins are stored or processed. The Netherlands has a national Code of Conduct on Biosecurity, but there is no evidence that it is legally binding. [1] The Code was established in 2007 by the Royal Dutch Academy of Science based on the Biological and Toxin Weapons Convention and is aimed at professionals working with Dual-Use Goods. [1] It does not directly mention the physical security of locations housing dangerous pathogens. However, there are guidelines on cyber-security ("Provide (additional) security for internal and external e-mail, mail and telephone traffic and for data storage regarding information about potential dual-use research or potential dual-use material") and preventing unauthorized access ("Provide additional safety screening with attention to biosecurity aspects for staff and visitors in institutions and companies where potential dual-use research is being conducted or where potential dual-use biological material is stored"). The Biosecurity Office, the national information centre for the Dutch Government and for organizations that work with high-risk biological material, indicates that the Netherlands only has laws on biosafety, not biosecurity. [2] That being said, the Biosecurity Office provides pillars and toolkits to increase biosecurity awareness. In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities. [3] There is no further information about biosecurity legislation or regulations on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Defense, the National Institute for Public Health in the Environment, or the VERTIC database. [4,5,6,7]

- [1] Royal Dutch Academy of Science. 2007. "A Code of Conduct for Biosecurity". ("Een gedragscode voor Biosecurity"). [<https://www.knaw.nl/nl/actueel/publicaties/een-gedragscode-voor-biosecurity>]. Accessed 11 February 2021.
- [2] Biosecurity Office. "Pillars". ("Pijlers"). [<https://bureaubiosecurity.nl/pijlers>]. Accessed 11 February 2021.
- [3] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.
- [4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [5] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.
- [6] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.
- [7] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands does not have an established agency that is responsible for the enforcement of biosecurity legislation and regulations. The Netherlands does have a knowledge and information center that raises awareness on the use of high-risk biological materials; namely the Biosecurity Office (Bureau Biosecurity). [1] The Biosecurity Office is part of the Dutch National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM). Activities of the Biosecurity Office include disseminating the Dutch Government's proposed biosecurity policy, providing knowledge to support organisations that are voluntarily implementing biosecurity measures, creating and maintaining an overview of organisations that work with high-risk pathogens and providing knowledge support to the government. [2] However, the Biosecurity Office's remit does not include enforcement of biosecurity legislation or regulations. [1, 2] There is no further

evidence on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Defense, the National Institute for Public Health in the Environment, the VERTIC Database, or in the 2020 'Confidence Building Measure Return' report submitted to the United Nations Office at Geneva. [3,4,5,6,7]

- [1] Biosecurity Office. "Pillars". ("Pijlers"). [<https://bureaubiosecurity.nl/pijlers>]. Accessed 11 February 2021.
- [2] Biosecurity Office. "About the Biosecurity Office". ("Over Bureau Biosecurity"). [<https://bureaubiosecurity.nl/over-bureau-biosecurity>]. Accessed 11 February 2021.
- [3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [4] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.
- [5] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.
- [6] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.
- [7] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the Netherlands has taken action to consolidate its inventories of dangerous pathogens into a minimum number of facilities. No information on this matter could be found on the websites of the Biosecurity Office, the Ministry of Health, the Ministry of Agriculture, the Ministry of Defense, or the VERTIC databasee [1, 2, 3, 4, 5]. The Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 reports for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities, but there is no mention of whether the country has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. [6]

- [1] Biosecurity Office. "Mission and Scope". [<https://www.bureaubiosecurity.nl/en/mission-scope>]. Accessed 11 February 2021.
- [2] Ministry of Health, Welfare and Sport "Services" [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 11 February 2021.
- [3] Ministry of Defence. "Services". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-defensie>]. Accessed 11 February 2021.
- [4] Ministry of Agriculture. "Services". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 11 February 2021.
- [5] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.
- [6] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands".

[<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 1

There is public evidence of that the Netherlands has in-country capacity to conduct polymerase chain reaction (PCR) diagnostic testing for both Anthrax and Ebola. The Center for Infectious Disease Research, Diagnostics and Laboratory Surveillance (Centrum Infectieziekteonderzoek, Diagnostiek en Laboratorium Surveillance) of the Dutch National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) in Bilthoven can perform real-time PCR for *Bacillus anthracis* (anthrax) [1]. The Erasmus University Medical Centre in Rotterdam has the capacity to perform conventional PCR for Ebola virus (ebola) [2].

[1] National Institute for Public Health and the Environment. 2018. "Diagnostics *Bacillus antracis*". ("Diagnostiek *Bacillus antracis*"). [https://www.rivm.nl/Onderwerpen/A/Antrax/Diagnostiek_Bacillus_antracis]. Accessed 11 February 2021.

[2] National Institute for Public Health and the Environment. 2019. "Diagnostics Ebola". ("Diagnostiek Ebola"). [<https://www.rivm.nl/ebola/diagnostiek-ebola>]. Accessed 11 February 2021.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the Netherlands requires biosecurity training, using a standardized, required approach, such as through a common curriculum or a trainthe-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. Despite strict legislation on biosafety (under the Working Conditions Decree, which specifies conditions for working with high risk pathogens under article 4.102), the Netherlands is still exploring how to implement biosecurity measures into legislation.

[1,2] However, the Biosecurity Office, part of the National Institute for Public Health and the Environment, serves as a knowledge and information center for biosecurity, and offers awareness raising workshops. [3] In 2020, the Biosecurity Office held multiple webinars on topics such as: biosecurity in research and the current situation in the Netherlands regarding biosecurity. [3] Additionally, the Biosecurity Office has created the biosecurity resource toolbox. [4] This toolbox includes 60 free resources, such as biosecurity assessment tools, guidelines, online trainings and best practises. This toolbox is part of a European Union project called "Preparation of a Biosecurity Toolbox to Strengthen European Biosecurity". There is no information about the publication of a plan on the websites of the Ministry of Health, Welfare and Sport, Ministry of Defense, the Ministry of Agriculture, Nature and Food Quality, or the VERTIC database. [5,6,7,8]

[1] Government of the Netherlands. 1997. "Working Conditions Decree". ("Arbeidsomstandighedenbesluit").

[<https://wetten.overheid.nl/BWBR0008498/2018-07-18#Hoofdstuk4>]. Accessed 9 February 2021.

- [2] Biosecurity Office. "Mission and Scope". [<https://www.bureaubiosecurity.nl/en/mission-scope>]. Accessed 11 February 2021.
- [3] Biosecurity Office. 2020. "Biosecurity webinars". [<https://www.bureaubiosecurity.nl/en/node/1471>]. Accessed 12 February 2021.
- [4] Biosecurity Office. 2020. "Biosecurity resource toolbox". [<https://www.bureaubiosecurity.nl/nieuws/biosecurity-resource-toolbox>]. Accessed 12 February 2021.
- [5] Ministry of Health, Welfare and Sport. "Home". [<https://www.government.nl/ministries/ministry-of-health-welfare-and-sport>]. Accessed 12 February 2021.
- [6] Ministry of Defence. "Home". [<https://english.defensie.nl/>]. Accessed 12 February 2021.
- [7] Ministry of Agriculture, Nature and Food Quality. "Home". [<https://www.government.nl/ministries/ministry-of-agriculture-nature-and-food-quality>]. Accessed 12 February 2021.
- [8] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is currently no evidence of legislation in the Netherlands that requires checks on personnel with access to dangerous biological materials. The Ministry of Justice and Security recommends, but does not require, that personnel working with CBRN (chemical, biological radiological or nuclear) substances are screened and request a Certificate of Conduct (VOG, Verklaring Omtrent het Gedrag). [1] The Biosecurity Office (Bureau Biosecurity) and the National Coordinator for Security and Counterterrorism (Nationale Coördinator Terrorismebestrijding en Veiligheid; NCTV) support this logic, and have created five screening profiles for those working with CBRN substances. [2] When using one of these profiles, Justis, which is part of the Ministry of Justice and Security, will do a background check of the last 10 years. Normally, VOG background checks only cover the previous four years. [2] In addition, there is a security screening for some (mainly governmental) organizations working with dangerous pathogens to obtain a Certificate of No Objection (VGB, Verklaring van Geen Bezwaar). Finally, the Dutch government is looking into requiring drug- and alcohol tests for those working in the chemical industry, but as of February 2021, no decisions have been made. [3] There is no further relevant evidence on the websites of the Ministry of Health, Welfare, and Sport, the Ministry of Defense, the Dutch National Institute for Public Health and the Environment, the VERTIC database, or in the 2020 'Confidence Building Measure Return' report by the United Nations Office at Geneva. [4,5,6,7,8]

- [1] Ministry of Justice and Security. "Why and when should you screen". "Waarom en wanneer moet u screenen"). [<https://www.justis.nl/producten/vog/werkgevers-en-organisaties/waarom-screenen.aspx>]. Accessed 12 February 2021.
- [2] Biosecurity Office. "Personelle security". ("Personnelsbeveiliging"). [<https://www.bureaubiosecurity.nl/pijlers/personnelsbeveiliging>]. Accessed 12 February 2021.
- [3] Het Parool. 16 January 2020. "Dangerous job in the chemical industry? Please blow first". ("Gevaarlijk werk in de chemische industrie? Dan eerst even blazen"). [<https://www.parool.nl/nieuws/gevaarlijk-werk-in-de-chemische-industrie-dan-eerst-even-blazen~b410eda0/>]. Accessed 12 January 2021.

- [4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [5] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.
- [6] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.
- [7] Verification Research, Training and Information Centre (VERTIC). "BWC Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.
- [8] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwcbcm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has public information on the national regulations on the secure transport of infectious substances (categories A and B). The Dutch Law Transport Dangerous Substances of 1995 provides the legal framework (last updated in 2015). [1] The website of the Dutch Government provides more concise information and references on the transportation of dangerous/infectious materials. [2] In 2009, the Ministry of Health, Transport, Economic Affairs, Agriculture and other governmental agencies created a document with practical transport guidelines for biologicals, specifying category A and B infectious substances [3]. These guidelines explain the required package (sealed containers), storage, identification, labelling (UN numbers and biohazard symbols) and transport (private courier or public post) for such samples. In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 reports for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities There is no additional information available on national regulations on the safe and secure transport of infectious substances. [4]

- [1] Government of the Netherlands. 2015. "Dutch Law Transport Dangerous Substances". ("Wet vervoer gevaarlijke stoffen"). [<https://wetten.overheid.nl/BWBR0007606/2015-04-01>]. Accessed 12 February 2021.
- [2] Government of the Netherlands. "Transport of dangerous materials". ("Vervoer van gevaarlijke stoffen"). [<https://www.rijksoverheid.nl/onderwerpen/gevaarlijke-stoffen/vervoer-van-gevaarlijke-stoffen>]. Accessed 12 February 2021.
- [3] Dutch Society for Medical Microbiology. 2009. "Practical guidelines for transport of biological materials." ("Praktijkrichtlijn verzending en vervoer van biologische materialen bestemd voor humane of dierlijke diagnostiek"). [<https://www.nvmm.nl/media/1732/praktijkrichtlijn-verzending-en-vervoer-van-biologische-materialen-bestemd-voor-humane-of-dierlijke-diagnostiek-2009.pdf>]. Accessed 12 February 2021.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has national legislation on the cross-border transfer and end-user screening of dangerous biological material. As a member of the European Union, the Netherlands follows the EU Council Regulation (EC) No 428/2009 of 5 May 2009 on setting up a community regime for the control of exports, transfer, brokering and transit of dual-use items, which includes especially dangerous pathogens, toxins and pathogens with pandemic potential. [1] Additional information about the conformity of the Netherlands with this Regulation is described in the Official Journal of the European Union of 20 August 2016. [2] The Netherlands has specific authorization requirements for brokering dual-use items specified under the 2011 Dutch Strategic Services Act. [3] Authorization requirements have been imposed for brokering services of 37 chemical substances when the destination is Iraq, regardless of the specific consignee or end-user under the Decree Goods for Dual-Use Iraq. [4] Additional guidelines on transport security and end-used screenings for professionals working with high-risk biological material are provided by the Bureau Biosecurity (Biosecurity Office), a government agency that is part of the Rijksinstituut voor Volksgezondheid en Milieu (RIVM, the National Institute for Public Health and the Environment). [5] In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities. There is no additional information available on oversight of cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potentials. [6]

[1] European Council Regulations. Law No 428/2009 of 5 May 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/GA/TXT/?uri=CELEX:32009R0428>]. Accessed 12 February 2021.

[2] Official Journal of the European Union. 20 August 2016. "Information on measures adopted by Member States in conformity with Articles 5, 6, 8, 9, 10, 17 and 22 of Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items".

[http://trade.ec.europa.eu/doclib/docs/2016/august/tradoc_154880.pdf]. Accessed 12 February 2021.

[3] Government of the Netherlands. 2019. "Law on Strategic Services". ("Wet Strategische Diensten"). [<https://wetten.overheid.nl/BWBR0030545/2019-12-24>]. Accessed 11 February 2021.

[4] Government of the Netherlands. 2015. "Decree Goods for Dual-Use Iraq". ("Regeling goederen voor tweeërlei gebruik Irak"). [<https://wetten.overheid.nl/BWBR0037216/2015-12-01>]. Accessed 12 February 2021.

[5] Biosecurity Office."Transport Security". [<https://www.bureaubiosecurity.nl/en/pillars-of-good-practice/transport-security>]. Accessed 12 February 2021.

[6] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwcm.ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has in place national biosafety legislation. Biosafety requirements are explained in the 2012 Classification of Biological Hazards, which was published by the National Institute for Public Health and the Environment. [1] In particular, the document specifies how biological agents are classified, and which laws and directives apply. Biosafety rules are specifically contained in chapter 4 of the 1997 Working Conditions Decree (which is titled "Biological agents"). [2] In particular, articles 4.84 to 4.102 of this decree specify hazard identification, risk assessment and classifications, measures in response to exposure, how to avoid and minimize exposure, safety awareness training, hygiene protection measures, occupational health studies, vaccinations, accidents, supervisions, data transfer, protective measures, special measures for laboratories, containment levels, provision of information and training [2]. The Netherlands also follows European Council Directive 2000/54/EC of 18 September 2000 Biological Agents. [3] In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. [4] The 2020 reports for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities.

[1] National Institute for Public Health and the Environment. 2012. "Classification of Biological Agents".

[<https://www.rivm.nl/bibliotheek/rapporten/205084002.pdf>]. Accessed 9 February 2021.

[2] Government of the Netherlands. 1997. "Working Conditions Decree". ("Arbeidsomstandighedenbesluit").

[<https://wetten.overheid.nl/BWBR0008498/2018-07-18#Hoofdstuk4>]. Accessed 9 February 2021.

[3] European Council. 2000. 2000/54/EC. [<https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32000L0054>]. Accessed 9 February 2021.

[4] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020."2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has several ministries that are responsible for the enforcement of biosafety legislation and regulations. Among others, the Ministry of Social Affairs and Employment, the Ministry of Health, Welfare and Sport, and the Ministry of the Interior and Kingdom Relations have primary responsibility for the oversight of biosafety legislation. The Netherlands follows European Council Directive 2000/54/EC of 18 September 2000 Biological Agents. [1] On a national level Chapter 4 of the Working Conditions Decree ("Biological agents"), in particular articles Articles 4.84 up to and including 4.102, describes biosafety regulations. [2] Within this document several ministries are held accountable. For example, the Ministry of Social Affairs and Employment is responsible for workers' conditions, whereas the Ministry of Health, Welfare and Sport is responsible for public health concerns. [3] The National Institute for Public Health and the Environment (Rijksinstituut voor

Volksgezondheid en Milieu; RIVM) supports the Ministry of Social Affairs and Employment, and provides extensive information on workplace safety in regards to biosafety. [4] In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities. [5]

- [1] European Council. 2000. 2000/54/EC. [<https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32000L0054>]. Accessed 9 February 2021.
- [2] Government of the Netherlands. 1997. "Working Conditions Decree". ("Arbeidsomstandighedenbesluit"). [<https://wetten.overheid.nl/BWBR0008498/2018-07-18#Hoofdstuk4>]. Accessed 9 February 2021.
- [3] National Institute for Public Health and the Environment. 2012. "Biosecurity". [https://www.mijnlab.nl/images/stories/_downloads/Conferentiearchief_2012/Biosecurity.pdf]. Accessed 25 February 2021.
- [4] National Institute for Public Health and the Environment. 2021. "Accidents with dangerous substances". ("Ongevallen met gevaarlijke stoffen"). [<https://www.rivm.nl/veilig-werken/ongevallen-met-gevaarlijke-stoffen>]. Accessed 25 February 2021.
- [5] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.4.2 Biosafety training and practices

1.4.2a

Does the country require biosafety training, using a standardized, required approach, such as through a common curriculum or a 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: 1

The Netherlands requires biosafety training of personnel working with biological material. The Netherlands follows European Council Directive 2000/54/EC of 18 September 2000 Biological Agents. [1] On a national level, chapter 4 of the Working Conditions Decree ("Biological agents") describes biosafety regulations. [2] Article 4.102 specifies that employees working with harmful biological substances must be educated about its dangers [2]. This document specifies hazard identification, risk assessment and classifications, measures in response to exposure, how to avoid and minimize exposure, safety awareness training, hygiene protection measures, occupational health studies, vaccinations, accidents, supervisions, data transfer, protective measures, special measures for laboratories, containment levels, provision of information and trainings. [2] The National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) creates curricula for such training and is able to train trainers. [3] The Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 reports for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities, but it does not mention biosafety training. [4]

- [1] European Council. 2000. 2000/54/EC. [<https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32000L0054>]. Accessed 9 February 2021.
- [2] Government of the Netherlands. 1997. "Working Conditions Decree". ("Arbeidsomstandighedenbesluit"). [<https://wetten.overheid.nl/BWBR0008498/2018-07-18#Hoofdstuk4>]. Accessed 9 February 2021.
- [3] National Institute for Public Health and the Environment. 2018. "Biological safety: from the Netherlands to a hippo".

(Biologische veiligheid: van Nederland tot nijlpaard").

[<https://magazines.rijksoverheid.nl/bz/veiligheidsdiplomaat/2018/05/03>]

[4] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that the Netherlands has conducted an assessment of dual use research taking place in the country. Under the 2011 Law Strategic Services, the country keeps a record of the facilities and people working with especially dangerous pathogens and toxin, which is updated every 6 months. [1] In addition, the Biosecurity Office (Bureau Biosecurity), which is part of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), manages a list of facilities of ongoing dual use research. [2] There is no further information via the Ministry of Health, Welfare and Sport, Ministry of Defence or the Ministry of Agriculture, Nature and Food Quality. [3,4,5] In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 reports for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities. There is no additional information available on such an assessment, including through UNOG or through the VERTIC database. [67]

[1] Government of the Netherlands. 2018. "Law Strategic Services". ("Wet Strategische Diensten").

[<https://wetten.overheid.nl/BWBR0030545/2016-01-01>]. Accessed 30 January 2021.

[2] Biosecurity Office. "Home". [<https://www.bureaubiosecurity.nl>]. Accessed 30 January 2021.

[3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.

[4] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.

[5] Ministry of Agriculture, Nature and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 30 January 2021.

[6] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands does not have a national policy requiring oversight of dual use research. The Law on Strategic Services (adopted 2011, last amended 2019) regulates various matters related to dual use items, including their transport, but it does not mandate oversight of dual use research [1]. The law defines dual use goods ("goederen voor tweéérlei gebruik") in accordance with European Council Regulation Number 428/2009. In addition, the Netherlands has a national Code of Conduct on Biosecurity. [2] The Code, established in 2007 by the Royal Dutch Academy of Science, is aimed at professionals such as scientific researchers working with dual-use goods. It includes a section on research and publishing scientific results, with guidelines such as "perform a screening for possible dual-use aspects in the application and assessment procedure and during the execution of research projects and the risks of the study" and "limit the risk that scientific publications of the results of potential dual-use research inadvertently contribute to the misuse of knowledge disclosed in this way", but it does not mandate oversight of dual use research. [1,2] The Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities, but it does not mention oversight of dual use research. [3] There is no further relevant evidence on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Defence, or the National Institute for Public Health and the Environment, or in the VERTIC database. [4,5,6,7]

- [1] Government of the Netherlands. 2019. "Law on Strategic Services". ("Wet Strategische Diensten"). [<https://wetten.overheid.nl/BWBR0030545/2019-12-24>]. Accessed 11 February 2021.
- [2] Royal Dutch Academy of Science. 2007. "A Code of Conduct for Biosecurity". ("Een gedragscode voor Biosecurity"). [<https://www.knaw.nl/nl/actueel/publicaties/een-gedragscode-voor-biosecurity>]. Accessed 11 February 2021.
- [3] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.
- [4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [5] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.
- [6] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.
- [7] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands has an agency responsible for oversight of dual use research. The Ministry of Foreign Affairs is responsible for overseeing the import, export and transit of dual-use goods, but there is no evidence that it has any responsibilities regarding dual-use research. [1] The Dutch Code of Conduct for Biosecurity - which was published by the Royal Dutch Academy of Sciences in 2007, and which is not legally binding - suggests that dual-use research oversight should be self-regulated by scientific researchers, including via regular external reviews. [2] The Biosecurity Office (Bureau Biosecurity), which is part of the National Institute for Public Health and the Environment, advises the Dutch government on

topics related to biosecurity, including dual-use research, but there is no evidence that it is responsible for oversight. [3] The Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities, but it does not mention any bodies responsible for overseeing dual-use research. [4] There is no further relevant evidence on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Defence, National Institute for Public Health, the Environment, or the VERTIC database. [5,6,7,8]

- [1] Government of the Netherlands. "Policy control on strategic goods". ("Beleid controle strategische goederen en diensten"). [<https://www.rijksoverheid.nl/onderwerpen/exportcontrole-strategische-goederen/beleid-controle-strategische-goederen-en-diensten>]. Accessed 12 February 2021.
- [2] Royal Dutch Academy of Science. 2007. "A Code of Conduct for Biosecurity". ("Een gedragscode voor Biosecurity"). [<https://www.knaw.nl/nl/actueel/publicaties/een-gedragscode-voor-biosecurity>]. Accessed 11 February 2021.
- [3] Biosecurity Office. "Home". [<https://www.bureaubiosecurity.nl>]. Accessed 12 February 2021.
- [4] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.
- [5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [6] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.
- [7] National Institute for Public Health, the Environment. "Home". [www.rivm.nl]. Accessed 30 January 2021.
- [8] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands has national legislation requiring screening of synthetic DNA before it is sold against lists of known pathogens and toxins before it is sold. The 2013 Decree on Genetically Modified Organisms and the Environment, last updated in 2020, has a section on regulations related to sale, such as the need for a licence from the Ministry of Infrastructure and Environment, but specific screening needs for synthetic DNA are not mentioned.[1] No additional information on this matter can be found on the website of the Ministry of Health, Welfare and Sport. [2] In addition, the Netherlands reports to the United Nations Office at Geneva (UNOG) every year for the "Confidence Building Measure Return", which is a reporting mechanism set by the Biological Weapons Convention. The 2020 report for the Netherlands includes data on Biosafety Level (BSL) facilities, their level, location, floor area of the laboratory, types of pathogens stored and processed, and the organizational structure of the facilities. There is no additional information available on such legislation in the VERTIC database. [3,4]

- [1] Government of the Netherlands. 2020. "Decree of Genetically Modified Organisms and the Environment". ("Besluit Genetisch Gemodificeerde Organismes Milieubeheer"). [<https://wetten.overheid.nl/BWBR0035090/2020-12-23#Hoofdstuk4>]. Accessed 12 February 2021.

- [2] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 12 February 2021.
- [3] Biological Weapons Convention: Confidence Building Measure Return. 19 May 2020. "2020 CMB report: the Netherlands". [<https://bwc-ecbm.unog.ch/netherlands/bwccbm2020netherlands>]. Accessed 9 February 2021.
- [4] Verification Research, Training and Information Centre (VERTIC). "Legislation database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/>]. Accessed 23 February 2021.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 1

2019

World Health Organization

1.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 2

The national laboratory system of the Netherlands has the capacity to conduct diagnostic tests for at least five out of the ten World Health Organization-defined core tests. The Center for Infectious Disease Research, Diagnostics and Laboratory Surveillance of the National Institute of Public Health and the Environment in Bilthoven can perform polymerase chain reaction (PCR) for influenza virus [1], detection and typing for polio virus [2], microscopy for Mycobacterium tuberculosis [3], rapid diagnostic testing for Plasmodium [4], serotype for Salmonella enteritidis serotype Typhi [5], and serology and sequencing for HIV-1 and HIV-2. [6] No information on the 4 country-defined tests can be found on the website of the Dutch Ministry of Health, Welfare and Sports [7].

- [1] National Institute for Public Health and the Environment. 2019. "Diagnostics Influenza virus". ("Griepinfecties vaststellen"). [https://www.rivm.nl/Onderwerpen/G/Griep/Informatie_voor_professionals/Diagnostiek_influenzavirus]. Accessed 21 January 2021.
- [2] National Institute for Public Health and the Environment. 2018. "Diagnostics Polio virus". ("Diagnostiek Poliovirus"). [https://www.rivm.nl/Onderwerpen/P/Polio/Diagnostiek_Polio]. Accessed 21 January 2021.
- [3] National Institute for Public Health and the Environment. 2020. "Diagnostics Mycobacterium tuberculosis". ("Diagnostiek Mycobacterium tuberculosis"). [<https://www.rivm.nl/tuberculose/tuberculose-referentielaboratorium/diagnostiek-mycobacteri-n/mycobacterium-tuberculosis>]. Accessed 21 January 2021.
- [4] National Institute for Public Health and the Environment. 2020. "Diagnostics HIV". ("Diagnostiek Plasmodium"). [https://www.rivm.nl/Onderwerpen/M/Malaria/Diagnostiek_Plasmadium]. Accessed 21 January 2021.
- [5] National Institute for Public Health and the Environment. 2018. "Diagnostics Salmonella". ("Diagnostiek Salmonella species"). [<https://www.rivm.nl/salmonellose/diagnostiek-salmonella>]. Accessed 21 January 2021.
- [6] National Institute for Public Health and the Environment. 2020. "Diagnostics HIV". ("Diagnostiek Humaan Immunodeficiëntievirus"). [https://www.rivm.nl/Onderwerpen/H/Hiv/Diagnostiek_HIV]. Accessed 21 January 2021.
- [7] Government of the Netherlands. "National Institute for Public Health and the Environment". ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 21 January 2021.

2.1.1b

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

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

Current Year Score: 1

There is evidence of a national plan for conducting testing during a public health emergency, but it does not include considerations for testing for novel pathogens. The Dutch Public Health Law (Wet Publieke Gezondheid) governs measures to contain and treat infectious diseases, and includes specific measures addressing particular diseases such as polio, COVID-19, and SARS. [1] Chapter 5 sets out a requirement for health authorities to conduct testing in order to identify known and unknown diseases and pathogens, where possible through professional laboratories. [1] Scaling capacity and goals for testing are not mentioned in the law. The Public Health Law was updated in 2020 to include a sub-chapter on COVID-19. However, Chapter 5a mostly highlights social distancing and other codes of conduct. [1] In 2014 the National Consultation on Infectious Disease Control (Landelijk Overleg Infectieziektenbestrijding; LOI) published the "Generic Action Plan Infectious Disease

Crisis" (Generiek Draaiboek Infectieziektencrisis). [2] This generic action plan indicates how information on known and unknown infectious diseases should be spread among governmental institutes. Additionally, this plan indicates which health and safety organisations carry responsibility during health crises. The Municipal Health Services (Gemeentelijke Gezondheidsdiensten - GGD) are mainly responsible for testing and source and contact research. [2] However, it does not directly mention testing for novel pathogens. [2] A COVID-19 guideline introduced as part of the Generic Action Plan in 2020, directly mentions testing possibilities and an increase in laboratories testing for corona. [3] However, it does not mention how the Netherlands plans to expand on testing in the future. The Ministry of Health, Welfare, and Sport has plans to scale capacity, which were introduced after the COVID-19 outbreak. [4]

- [1] Government of the Netherlands. 2021. "Public Health Law". ("Wet Publieke Gezondeheid"). [<https://wetten.overheid.nl/BWBR0024705/2021-01-09#HoofdstukV>]. Accessed 12 February 2021.
- [2] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.
- [3] National Institute of Public Health and the Environment. 2020. "COVID-19". [<https://lci.rivm.nl/richtlijnen/covid-19#diagnostiek>]. Accessed 12 February 2021.
- [4] Ministry of Health, Welfare, and Sport. "Increasing testcapacity". ("Opschaling testcapaciteit"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-coordinatieteam-diagnostische-keten/opschaling-testcapaciteit>]. Accessed 12 February 2021.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a national laboratory that serves as a reference facility that is accredited. For example, the National Institute of Public Health and the Environment (RIVM) in Bilthoven meets the standards of the Dutch Accreditation Council on the basis of the ISO 15189 standard [1]. The RIVM is the national reference facility for tuberculosis. [2] The RIVM advises and reports to different Dutch Ministries, including the Ministry of Health [3].

- [1] Dutch Accreditation Council. 2020. "scope van accreditatie". ("Bijlage bij accreditatieverklaring"). [https://www.rva.nl/system/scopes/file_nls/000/000/861/original/M288-scen.pdf?1589475612]. Accessed 21 January 2021.
- [2] National Institute for Public Health and the Environment. 2019. "National Reference Facility Tuberculosis". ("Nationaal Referentielaboratorium Tuberculose"). [<https://www.rivm.nl/tuberculose/tuberculose-referentielaboratorium>]. Accessed 24 February 2021.
- [3] Government of the Netherlands. "National Institute for Public Health and the Environment". ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 21 January 2021.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The national laboratory that serves as a reference facility in the Netherlands is subject to external quality assurance reviews. Like all medical microbiology laboratories in the Netherlands, the laboratory of the Center for Infectious Disease Research, Diagnostics and Laboratory Surveillance of the Dutch National Institute of Public Health and the Environment in Bilthoven is externally reviewed by the Dutch Foundation for Quality Assessment in Medical Laboratories [1, 2]. In addition, members of the Dutch Society for Medical Microbiology (NVMM) visit, inspect and advise on each other's laboratories to assure quality practice [3]. The IDS is also ISO 15189 accredited, which requires external quality assurance reviews. [1]

- [1] Dutch Accreditation Council. 2020. "scope van accreditatie". ("Bijlage bij accreditatieverklaring").
[https://www.rva.nl/system/scopes/file_nls/000/000/861/original/M288-scn.pdf?1589475612]. Accessed 21 January 2021.
- [2] Dutch Foundation for Quality Assessment in Medical Laboratories. "About us". ("Over SKML")
[<https://www.skml.nl/organisatie/over-skml/>]. Accessed 22 January 2021.
- [3] Dutch Society for Medical Microbiology. "General information". ("Algemene informatie over NVMM").
[<https://www.nvmm.nl/vereniging/algemene-informatie/>]. Accessed 22 January 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a nationwide system for the transport of specimens and infectious substances. Details and guidelines on specimen transport to any part of the Netherlands, either by public or private courier, are available on the website of the Platform of Biological Safety Functionaries (Biologische VeiligheidsFunctionarissen Platform; BVF Platform) and have been developed in collaboration with the Ministry of Infrastructure and the Ministry of Health, Welfare, and Sport [1,2,3] For example, routine diagnostic samples, where the material is unlikely to be infectious, may be transported by taxi, through the Dutch mailing system or even private transport, provided that packing requirements are fulfilled. [1] Dangerous cultures, however, may not be sent through the mailing system. Generally speaking, all materials must be transported using leak-proof packaging. For dried blood or urine on filter paper, no specific additional requirements exist. (Semi-)liquid substances must be packaged using three components. 1. A liquid-tight primary container, 2. liquid-tight secundary packaging, and 3. an outer packaging of sufficient strength, with regard to its volume, mass and intended use. [1] There are private firms that offer courier services for specimens and infectious substances, such as SDX , which is able to transport both medical and dangerous substances. [4]

- [1] Platform of biological Safety Functionaries. "Transportguidelines 2012". ("Transportrichtlijnen 2012").
[<https://www.bvfplatform.nl/cms/public/files/2020-07/praktijkrichtlijn-verzending-en-vervoer-van-biologische-materialen-bestemd-voor-humane-of-dierlijke-diagnostiek-2009-1-.pdf?67cd2f0c84>]. Accessed 22 January 2021.
- [2] Ministry of Infrastructure. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-infrastructuur-en-waterstaat>]. Accessed 26 February 2021.
- [3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 26 February 2021.

[4] SDX. "Home". [<https://sdx.nl>]. Accessed 13 March 2021.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

The Netherlands has no 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. In the Netherlands there are some 50 medical-microbiological laboratories that deal with the COVID-19 virus, and 3 pandemic laboratories. [1, 2] Ten of the former and all the pandemic laboratories were specifically established during the COVID-19 pandemic, at the behest of the Ministry of Health, Welfare, and Sport. [2] By autumn 2020, the new laboratories improved COVID-19 testing capacity in the country, ending the position where some tests were sent abroad for processing. [1, 2, 3] However, there is no evidence that this was based on a pre-existing plan. [1, 2, 3] There is no evidence of such a plan on the websites of the Ministry of Health, Welfare and Sport or the National Institute of Public Health and the Environment. [4, 5] The Generic Action Plan Infectious Disease Crisis does not mention the rapid authorization of laboratories. [6]

[1] Ministry of Health, Welfare, and Sport. "Increasing test capacity". ("Opschaling testcapaciteit").

[<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-coordinatieteam-diagnostische-keten/opschaling-testcapaciteit>]. Accessed 12 February 2021.

[2] Hugo de Jonge (Minister of Health, Welfare, and Sport. 4 November 2020. "Answering questions" ("Beantwoording Kamervragen |"). [<https://www.rijksoverheid.nl/documenten/kamerstukken/2020/11/04/beantwoording-kamervragen-over-het-bericht-testlabs-kunnen-wel-meer-aan-maar-deze-concurrentiestrijd-zit-in-de-weg>]. Accessed 12 February 2021.

[3] NOS. 3 September 2020. "Labs can handle more, but competition complicates matters". ("Testlabs kunnen wél meer aan, maar deze concurrentiestrijd zit in de weg"). [<https://nos.nl/nieuwsuur/artikel/2346643-testlabs-kunnen-wel-meer-aan-maar-deze-concurrentiestrijd-zit-in-de-weg.html>]. Accessed 12 February 2021.

[4] Ministry of Health, Welfare and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 12 February 2021.

[5] National Institute of Public Health and the Environment. "Home". [www.rivm.nl]. Accessed 12 February 2021.

[6] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://ici.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

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

Current Year Score: 1

There is evidence that the Netherlands is conducting ongoing event-based surveillance. The National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), which reports to the Dutch Ministry of Health, Welfare and Sports, is part of a European event-based surveillance network, the Food- and Waterborne Diseases and Zoonoses (FWD) network [1, 2]. Through this network, the RIVM collects and analyses information on infectious diseases at least monthly. In addition, the RIVM continuously collects data on infectious disease, the results are discussed on a weekly basis.

- [1] National Institute for Public Health and the Environment. 2004. "Zoonoses in Europe".
[<https://www.rivm.nl/bibliotheek/rapporten/330200002.pdf>]. Accessed 23 January 2021.
- [2] European Centre for Disease Control and Prevention. 2018. "The Food- and Waterborne Diseases and Zoonoses (FWD) network". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/fwd-net>]. Accessed 23 January 2021.
- [3] National Institute for Public Health and the Environment. "Signaling infectious diseases" ("Signalering infectieziekten").
[<https://www.rivm.nl/node/136191>]. Accessed 23 January 2021.

2.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands has not reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) in the last two years. There is no indication of reporting a PHEIC including in relation to COVID-19 on the websites of the Ministry of Health, Welfare, and Sport, the National Institute of Public Health and the Environment, or the WHO. [1, 2, 3] The Dutch government has, however, acknowledged the WHO's declaration of PHEIC in the case of COVID-19. [4]

- [1] Ministry of Health, Welfare, and Sport. "Ministry of Health, Welfare, and Sport".
[<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 23 January 2021.
- [2] National Institute of Public Health and the Environment. "Home". [<https://www.rivm.nl>]. Accessed 23 January 2021.
- [3] World Health Organisation. "Netherlands". [<https://www.who.int/countries/nld/>]. Accessed 23 January 2021.
- [4] Ministry of Health, Welfare, and Sport. 2020. "January 2020, the first signals of Covid". (Januari 2020, eerste signalen corona"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-tijdlijn/januari-2020-eerste-signalen-corona>]. Accessed 23 January 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands operates an electronic reporting surveillance system at both the national and sub-national level. The National Institute for Public Health and the Environment (RIVM) has an infectious disease surveillance system that incorporates electronic health record data, self-reported information, and laboratory surveillance of viruses and other

disease types. [1,2] The State of Infectious Diseases in the Netherlands 2019 presents a list of reports (table 2.1) that pertain to the surveillance of infectious diseases, such as the 'Surveillance of influenza and other respiratory infections: winter 2018/2019. Annual report'. [3,4] The annual report on influenza analyses weekly data on positive tests from both primary care and hospitals, looked at trends in 2018/2019, and compared the data to previous years' research. [4] Laboratories are situated throughout the Netherlands, including in territories in the Caribbean. [1]

- [1] National Institute for Public Health and the Environment. 2017. "State of infectious diseases in the Netherlands, 2016". [<https://www.rivm.nl/bibliotheek/rapporten/2017-0029.pdf>]. Accessed 23 January 2021.
- [2] National Institute for Public Health and the Environment. 2019. "State of infectious diseases in the Netherlands, 2018". ("Staat van infectieziekten in Nederland, 2018"). [<https://www.rivm.nl/bibliotheek/rapporten/2019-0069.pdf>]. Accessed 23 January 2021.
- [3] National Institute for Public health and the Environment. 2021. "State of Infectious Diseases in the Netherlands 2019". ("Staat van Infectieziekten in Nederland 2019"). [<https://www.rivm.nl/bibliotheek/rapporten/2020-0048.pdf>].
- [4] National Institute for Public health and the Environment. 2019. "Surveillance of influenza and other respiratory infections: winter 2018/2019". [<https://www.rivm.nl/bibliotheek/rapporten/2019-0079.pdf>]. Accessed 11 March 2021.

2.3.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the electronic reporting surveillance system in the Netherlands currently collects ongoing or real time laboratory data. Basic real-time surveillance systems are already used in the Netherlands, for example to monitor antimicrobial resistance and Q-fever [1, 2]. New, real-time automated detection tools to monitor for clusters of infectious diseases, such as the Integrated Crisis Alert and Response System (ICARES) are under development [3]. ICARES has been tested on three syndromes. From local general practices, General Practice Out-of-Hours services and a hospital, the numbers of routinely used syndrome codes for three piloted tracts i.e., respiratory tract infection, hepatitis and encephalitis/meningitis, are sent on a daily basis to a central unit of infectious disease control. [3] There is no further evidence of real-time reporting on the websites of the Ministry of Health, Welfare and Sport, the RIVM, or in the Generic Action Plan Infectious Disease Crisis. [4, 5, 6]

- [1] Altorf-van der Kuil et al. 2017. "National laboratory-based surveillance system for antimicrobial resistance: a successful tool to support the control of antimicrobial resistance in the Netherlands". [<https://www.ncbi.nlm.nih.gov/pubmed/29162208>]. Accessed 5 February 2021.
- [2] Vlieg et al. 2017. "Comparing national infectious disease surveillance systems: China and the Netherlands". [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5423001/>]. Accessed 5 February 2021.
- [3] Groeneveld et al. 2017. "ICARES: a real-time automated detection tool for clusters of infectious diseases in the Netherlands". [<https://www.ncbi.nlm.nih.gov/pubmed/28279150>]. Accessed 5 February 2021.
- [4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 13 February 2021.
- [5] National Institutee for Public Health and the Eenvironment. "Home". [www.rivm.nl]. Accessed 13 February 2021.
- [6] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 2

Electronic health records (EHRs) are commonly in use in the Netherlands. The professional use of EHRs in the Dutch healthcare sector is common practice, and is fully endorsed and encouraged by the Dutch government [1]. In 2017, Nictiz (the Dutch e-health expertise centre that monitors e-health trends) reported that 89% of medical specialists and 93% of nurses used EHRs in the Netherlands. [2] As of 1 July 2020, everyone in the Netherlands must be able to view their medical information online. [3] There are strict rules on the sharing of medical information between medical professionals. [3]

[1] Government of the Netherlands. "Topic: e-Health". [<https://www.rijksoverheid.nl/onderwerpen/e-health>]. Accessed 23 January 2021.

[2] Nictiz, Dutch e-health expertise centre. 2018. "eHealth-monitor". [https://www.nictiz.nl/wp-content/uploads/2018/03/1_eHealth-monitor-2017.pdf]. Accessed 23 January 2021.

[3] Dutch Patients Federation. 2020. "Sharing of medical information". ("Medische gegevens delen").

[<https://www.patientenfederatie.nl/over-de-zorg/medische-gegevens-delen#medische-gegevens-delen-tussen-zorgverleners>]. Accessed 23 January 2021.

2.4.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The national public health system in the Netherlands can access electronic health records (EHRs) of individuals in their country under specific conditions. The National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), which reports to various Dutch ministries, including the Ministry of Health, Welfare and Sports, can access personal data (such as EHRs) in specific situations such as public health emergencies [1, 2]. Moreover, if a medical practitioner believes a patient to suffer from an unknown infectious disease, he or she is obligated to inform the Municipal Health Service (Gemeentelijke gezondheidsdienst; GGD). [3] All medical professionals and organizations such as the RIVM and the GGD must adhere to the General Data Protection Regulation, which is monitored by the Dutch Data Protection Authority. [2,4] Due to this regulation, Dutch patients decide who can access their EHRs and can also demand to be alerted via email or text message whenever their medical records are being accessed. [5]

[1] Government of the Netherlands. "Rijksinstituut voor Volksgezondheid en Milieu RIVM".

[<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 23 January 2021.

[2] National Institute for Public Health and the Environment. 2018. "Privacy". [<https://www.rivm.nl/en/privacy>]. Accessed 23 January 2021.

[3] Government of the Netherlands. "Who may access my medical file?". ("Wie mag mijn medische gegevens inzien?").

[<https://www.rijksoverheid.nl/onderwerpen/rechten-van-patient-en-privacy/uw-medisch-dossier/wie-mag-mijn-medisch-dossier-inzien>]. Accessed 23 January 2021.

[4] Dutch Data Protection Authority. "General Data Protection Regulation". ("Algemene verordening gegevensbescherming (AVG)"). [<https://autoriteitpersoonsgegevens.nl/nl/over-privacy/wetten/algemene-verordening-gegevensbescherming-avg>]. Accessed 23 January 2021.

[5] Dutch Patients Federation. 2020. "Sharing of medical information". ("Medische gegevens delen").

[<https://www.patientenfederatie.nl/over-de-zorg/medische-gegevens-delen#medische-gegevens-delen-tussen-zorgverleners>]. Accessed 23 January 2021.

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 Netherlands has standards to ensure that electronic health (e-health) data is comparable. Nictiz, the Dutch e-health expertise center that monitors e-health trends, indicates that interoperability of e-health information systems relies on five aspects: organization, healthcare process, application, IT infrastructure and information. For information, comparability of the data is ensured by standards on terminology, classification and information standards. Examples of information standards include ISO13606 and ISO23967. [2] A 2010 report by the European Commission Digital Information Society and Media confirms the Netherlands comply with these international standards. [3]

[1] Dutch Patients Federation. 2020. "Sharing of medical information". ("Medische gegevens delen").

[<https://www.patientenfederatie.nl/over-de-zorg/medische-gegevens-delen#medische-gegevens-delen-tussen-zorgverleners>]. Accessed 23 January 2021.

[2] Nictiz. "Topic: Interoperability". ("interoperabiliteit"). [<https://www.nictiz.nl/standaardisatie/interoperabiliteit/>]. Accessed 24 January 2021.

[3] European Commission Digital Information Society and Media. 2010. "e-Health Strategies country brief: the Netherlands". [http://ehealth-strategies.eu/database/documents/Netherlands_CountryBrief_eHStrategies.pdf]. Accessed 24 Janauary 2021

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

2.4.2a

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence in the Netherlands of established mechanisms at the relevant ministries responsible for animal, human and wildlife surveillance to share data. The One Health Platform is a communication between medical and veterinary professionals and provides a platform for regional zoonotic disease networks and signalling such infections [1]. It is coordinated by the Center for Zoonoses and Environmental Microbiology of the National Institute of Health and the Environment, which performs surveillance on zoonotic diseases in the Netherlands [2]. This surveillance data is formatted in internal communications, scientific articles and reports and shared with different relevant Ministries such as the Ministry of

Health, Welfare and Sports and the Ministry of Economic Affairs and Agriculture, as well as the general public. [3]

- [1] One Health Netherlands. 2018. "One Health.nl". [<https://www.onehealth.nl/>]. Accessed 24 January 2021.
- [2] National Institute of Health and the Environment. "Centrum voor Zoonoses en Omgevingsmicrobiologie (Center for Zoonoses and Environmental Microbiology)".
[https://www.rivm.nl/en/About_RIVM/Organisation/Centres/Centre_for_Zoonoses_and_Environmental_Microbiology]. Accessed 24 January 2021.
- [3] National Institute of Health and the Environment). 2021. "Scientific annual report RIVM". ("Wetenschappelijk jaarverslag RIVM"). [<https://www.rivm.nl/wetenschappelijk-jaarverslag>]. Accessed 24 January 2021.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands makes de-identified health surveillance data on disease outbreaks publicly available on a weekly basis. Based on data of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), the Ministry of Health, Welfare and Sports publishes a monthly and a yearly report on the state of infectious diseases in the Netherlands. [1] The monthly Infectious Disease Bulletin (Infectieziekten Bulletin) provides information and updates on relevant events in infectious disease control aimed at medical professionals. For example, the December 2020 edition reports on the zoonoses Q fever. [2] The yearly "State of Infectious Diseases in the Netherlands" is a more extensive review of the major trends and infectious disease events in the last 12 months. The 2018 edition describes how the meningococcal type W bacteria is on the rise. [3] In addition, the Center for Infectious Disease Control sends out weekly e-mails on disease outbreaks to healthcare professionals. [4] The e-mail is sent every Thursday, but is not available to a broader audience.

- [1] National Institute for Public Health and the Environment. "Infectious Disease Bulletin", ("Infectieziekten Bulletin"). [https://www.rivm.nl/Onderwerpen/I/Infectieziekten_Bulletin]. Accessed 24 January 2021.
- [2] National Institute for Public Health and the Environment. December 2020. "Infectious diseases December 2020". ("Infectieziekten Bulletin December 2020"). [<https://magazines.rivm.nl/2020/12/infectieziekten-bulletin>]. Accessed 24 January 2021.
- [3] National Institute for Public Health and the Environment. 2019. "State of Infectious Diseases in the Netherlands 2018". ("Staat van Infectieziekten in Nederland 2018"). [<https://www.rivm.nl/bibliotheek/rapporten/2019-0069.pdf>]. Accessed 24 January 2021.
- [4] Centre for Infectious Disease Control. "Infectious disease meeting". ("Signaleringsoverleg Infectieziekten"). [<https://www.rivm.nl/surveillance-van-infectieziekten/signaling-infectieziekten/signalingsoverleg>]. Accessed 26 February 2021.

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands makes de-identified COVID-19 surveillance data available on government websites. The Dutch government operates a website called Coronadashboard, which provides statistics on the mortality rate and the daily case count for COVID-19. [1,2] Since the start of 2021, the website has also provided statistics on the number of vaccines provided. Information on the website is updated daily around 15:20 hours. [3]

[1] Government of the Netherlands. "Corona Dashboard". ("Dashboard coronavirus").

[<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/algemene-coronaregels/coronadashboard>]. Accessed 24 January 2021.

[2] Government of the Netherlands. "Home". [<https://coronadashboard.rijksoverheid.nl>]. Accessed 24 January 2021.

[3] Government of the Netherlands. "About this dashboard". ("Over dit dashboard").

[<https://coronadashboard.rijksoverheid.nl/over>]. Accessed 24 January 2021.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 1

There are regulations in the Netherlands that safeguard the confidentiality of identifiable health information for individuals. The National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) is tasked with surveillance of infectious disease and reports to different Dutch Ministries, including the Ministry of Health, Welfare and Sports. [1] The RIVM has released a comprehensive statement about privacy and confidentiality related to surveillance data on its website, including the legal framework, guidelines and principles. [2] Furthermore, personal data collected by RIVM fall under the European Union's General Data Protection Regulation. [3] The Dutch Data Protection Authority ensures that organizations, such as the RIVM, operate in a lawful manner. [3] Citizens who wish to file a complaint against the way the RIVM handles personal information can contact the Dutch Data Protection Authority. [3]

[1] Government of the Netherlands. "Rijksinstituut voor Volksgezondheid en Milieu RIVM".

[<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 24 January 2021.

[2] National Institute for Public Health and the Environment. 24 May 2018. "RIVM Privacy Statement".

[<https://www.rivm.nl/documenten/rivm-privacy-statement>]. Accessed 24 January 2021.

[3] Dutch Data Protection Authority. "General Data Protection Regulation". ("Algemene verordening gegevensbescherming (AVG)"). [<https://autoriteitpersoonsgegevens.nl/nl/over-privacy/wetten/algemene-verordening-gegevensbescherming-avg>].

Accessed 24 January 2021.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands' regulations safeguarding the confidentiality of identifiable health information include mention of protection from cyber-attacks. As a European Union (EU) member, the Netherlands is subject to the 2016 General Data Protection Regulation, effective since 2018. This extensive regulation includes specific provisions to protect data against cyber attack, 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 individuals affected by a data breach within 72 hours. [1,2]

[1] Dutch Data Protection Authority. "General Data Protection Regulation". ("Algemene verordening gegevensbescherming (AVG)"). [<https://autoriteitpersoonsgegevens.nl/nl/over-privacy/wetten/algemene-verordening-gegevensbescherming-avg>]. Accessed 24 January 2021.

[2] 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/eli/reg/2016/679/oj>]. Accessed 26 February 2021.

2.4.5 International data sharing

2.4.5a

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

Yes, commitments have been made to share data for more than one disease = 2, Yes, commitments have been made to share data only for one disease = 1, No = 0

Current Year Score: 2

There is evidence that the Netherlands has cooperative agreements with other countries in Europe to share surveillance data, for more than one disease, during active public health emergencies. As a member of the European Union (EU), the Netherlands shares surveillance data during public health emergencies with other countries in the region. All EU countries are part of the European Centre for Disease Prevention and Control's Early Warning and Response System (EWRS). [1] Article 9 of Chapter IV of the EU Decision on Serious Cross-Border Threats to Health notes that the European Commission "shall make available to the national competent authorities through the EWRS any information that may be useful for coordinating the response [...] including information related to serious crossborder threats to health and public health measures related to serious cross-border threats to health transmitted through rapid alert and information systems established under other provisions of Union law or the Euratom Treaty." [2]

[1] European Centre for Disease Prevention and Control. "Early Warning and Response System (EWRS)." [<https://ecdc.europa.eu/en/early-warning-and-response-system-ewrs>]. Accessed 24 January 2021.

[2] 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. Official Journal of the European Union. [https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf]. Accessed 24 January 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 2

The Netherlands has a national system capable of providing support at the sub-national level in conducting contact tracing during an active or future public health emergency. In the Netherlands, the Community Health Services (Gemeentelijke Gezondheids Dienst; GGD) are responsible for source and contact tracing. [1,2] In the case of infectious diseases, such as shigellosis and legionellosis, a GGD employee will engage in source and contact tracing. [3,4,5] In the case of COVID-19, source and contact tracing is also undertaken by a GGD employee. [1,6] The Protocol for Source and Contact Tracing COVID-19 provides clear guidelines for contact tracing. [7] The protocol is based on the Technical Report of the European Centre for Disease Prevention and Control, and is regularly updated to benefit health employees. [7] The GGD provides (regularly updated) COVID-19 roadmaps which indicate how source and contact tracing can improve/increase. [8] In January 2021, the GGD started a pilot 'Contact app' with the purpose of aiding the source and contact tracing process. The GGD presents these roadmaps to the Ministry of Health, Welfare, and Sport. [8] There is no further evidence of a system to conduct contact tracing at the sub-national level on the websites of the Ministry of Health, Welfare and Sport, the RIVM, or in the Generic Action Plan Infectious Disease Crisis. [9, 10, 11]

[1] Government of the Netherlands. "Source- and Contact Tracing". ("Bron- en Contactonderzoek").

[<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/testen/bron-en-contactonderzoek>]. Accessed 13 February 2021.

[2] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

[3] National Consultation on Infectious Disease Control. 2019. "Shigellose". [<https://lci.rivm.nl/richtlijnen/shigellose>]. Accessed 27 February 2021.

[4] National Consultation on Infectious Disease Control. 2019. "Legionellose". [<https://lci.rivm.nl/richtlijnen/legionellose>]. Accessed 27 February 2021.

[5] National Institute for Public Health and the Environment. 2018. "Source and contact tracing in individual notifications". ("Bron- en contactonderzoek bij individuele meldingen?"). [<https://www.rivm.nl/bron-en-contactonderzoek-bij-individuele-meldingen>]. Accessed 27 February 2021.

[6] Government of the Netherlands. 14 October 2020. "Explanation of Source- and Contact Tracing Coronavirus". ("Uitleg Bron- en Contactonderzoek coronavirus"). [<https://www.youtube.com/watch?v=SuRw4u026b4>]. Accessed 13 February 2021.

[7] National Institute for Public Health and the Environment. 4 February 2021. "Protocol for Source- and Contact Tracing COVID-19". ("Protocol bron- en contactonderzoek COVID-19"). [<https://lci.rivm.nl/COVID-19-bco>]. Accessed 13 February 2021.

[8] Community Health Services. 2021. "Roadmap testing, tracing, and vaccinating". ("Roadmap testen, traceren, en vaccineren")> [<https://ggdghor.nl/wp-content/uploads/2021/02/Aanbiedingsbrief-en-RoadmapQ1TestenTracerenVaccineren.pdf>]. Accessed 9 March 2021.

[9] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van>

volksgezondheid-welzijn-en-sport]. Accessed 12 March 2021.

[10] National Institutee for Public Health and the Eenvironment. "Home". [www.rivm.nl]. Accessed 13 February 2021.

[11] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

2.5.1b

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

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

Current Year Score: 1

The Netherlands provides economic support to enable infected people and suspected infected people to self-isolate as recommended, but there is no evidence of specific provisions for medial treatment. Article 7.628 of book 7 of the Dutch Civil Code states that natural persons are entitled to compensation for earnings lost when they are required to isolate. [1] The Employee Insurance Agency (Uitvoeringsinstituut Werknemersverzekeringen; UWV) indicates that employers must continue to pay employees when they are self-isolating, but not ill. [2] If the employee is unable to work from home, the employer may receive compensation from the UWV. [2] No further information on provisions for medical treatment can be found on the websites of the Ministry of Health, Welfare and Sport, the RIVM, or in the Generic Action Plan Infectious Disease Crisis. [3,4,5]

[1] Government of the Netherlands. 2018 "Civil Code Book 7" (Burgerlijk Wetboek Boek 7").

[<https://wetten.overheid.nl/BWBR0005290/2018-09-19>]. Accessed 27 February 2021.

[2] Employee Insurance Agency. "I am ill and employed". ("Ik ben ziek en heb een werkgever").

[<https://www.uvw.nl/particulieren/ziek/ziek-met-werkgever/index.aspx>]. Accessed 13 February 2021.

[3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 13 February 2021.

[4] National Institutee for Public Health and the Eenvironment. "Home". [www.rivm.nl]. Accessed 13 February 2021.

[5] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands does not publish de-identified data on contact tracing efforts for COVID-19 on its government websites. The Corona Dashboard, established by the Dutch Government, provides detailed data on the ongoing coronavirus pandemic, including regularly updated figures for confirmed cases, deaths, hospitalizations, and vaccines. [1] However, these statistics do not refer to contact tracing. [1] The Dutch government has introduced a Corona App, which provides an electronic means of verifying and tracing contacts, but there is no evidence of statistics on contact tracing through the Corona App on the Government's website. [2, 3]

- [1] Government of the Netherlands. "Corona Dashboard". ("Dashboard coronavirus").
[<https://coronadashboard.rijksoverheid.nl/>]. Accessed 04 March 2021.
- [2] Government of the Netherlands. "How does the CoronaMelder work?". "Hoe werkt CoronaMelder").
[<https://www.rijksoverheid.nl/onderwerpen/coronavirus-app/vraag-en-antwoord/hoe-werkt-de-corona-app>]. Accessed 12 February 2021.
- [3] Government of the Netherlands. [<https://www.rijksoverheid.nl/>]. Accessed 22 February 2021.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no evidence of a joint plan for contact tracing between the health and border authorities in the Netherlands for an active or future public health emergency. The Community Health Services (Gemeentelijke Gezondheids Dienst; GGD) are responsible for source and contact tracing. [1] The Generic Action Plan Infectious Disease Crisis indicates what action the GGD has to undertake in the case of notifiable infectious diseases. However, this Action Plan does not mention cooperation between the GGD and border authorities. It only mentions that during a health crisis, the GGD may depend on the Center for Infectious Disease Control for help in regards to diagnostics and coordination. [1] There are no provisions for involvement of border authorities on the website of the Ministry of Health, Welfare and Sport. [2] Plans related to the ongoing coronavirus crisis, such as the COVID-19 guideline, also do not mention any type of cooperation with border authorities. [3]

- [1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.
- [2] Ministry of Health, Welfare and Sport. [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 13 February 2021.
- [3] National Institute for Public Health and the Environment. "COVID-19". [<https://lci.rivm.nl/richtlijnen/covid-19#maatregelen>]. Accessed 6 February 2021.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

Applied epidemiology training programs are available in the Netherlands and resources are also provided by the government to send citizens to other countries to participate in applied epidemiology training programs. According to a report from the European Centre for Disease Prevention and Control (ECDC), the Field Epidemiology Training Programme (FETP) and the European Programme for Intervention Epidemiology Training (EPIET) is available in the Netherlands, as the country is a member of the European Union [1]. Resources are also provided by the Dutch government to send citizens to other countries to participate in FETP and EPIET, as announced on the website of the National Institute for Public Health and the Environment. [2] In the Netherlands, EPIET fellow can be hosted at the Epidemiology and Surveillance Unit, which is part of the Center for Infectious Disease Control. [3]

- [1] European Centre for Disease Prevention and Control. 2008. "Training strategy for intervention epidemiology in the European Union". [https://ecdc.europa.eu/sites/portal/files/media/en/publications/Publications/0810_MER_Training_Strategy_for_Intervention_Epidemiology.pdf]. Accessed 24 January 2021.
- [2] National Institute for Public Health and the Environment. 2019. "EPIET Programme". [<https://www.rivm.nl/en/about-rivm/mission-and-strategy/international-affairs/international-projects/epiet>]. Accessed 24 January 2021.
- [3] European Centre for Disease Prevention and Control. 2020. "Rijksinstituut voor Volksgezondheid en Milieu - EPIET". [<https://www.ecdc.europa.eu/en/rijksinstituut-voor-volksgezondheid-en-milieu-epiet>]. Accessed 24 January 2021.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

In the Netherlands, the available field epidemiology training programs are explicitly inclusive of animal health professionals. Dutch citizens can participate in the European Public Health Microbiology Training Programme (EUPHEM) of the European Centre for Disease Prevention and Control (ECDC). The EUPHEM path provides training and practical experience in public health microbiology at laboratories with public health functions in the European Union (EU). Eligibility requirements for EUPHEM path include post-secondary education attested by a diploma in a biomedical field, with veterinary medicine specifically mentioned [1]. In addition, the EPIET training can be followed at the Epidemiology and Surveillance Unit (EPI) which is part of the Center for Infectious Disease Control. [2]

- [1] European Centre for Disease Prevention and Control. 2020. "ECDC Fellowship programme: EPIET and EUPHEM paths". [<https://www.ecdc.europa.eu/en/about-us/work-us/call-ecdc-fellowship-programme-epiet-and-euphem-paths>]. Accessed 24 January 2021.
- [2] European Centre for Disease Prevention and Control. 2020. "Rijksinstituut voor Volksgezondheid en Milieu - EPIET". [<https://www.ecdc.europa.eu/en/rijksinstituut-voor-volksgezondheid-en-milieu-epiet>]. Accessed 24 January 2021.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1 , No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

The Netherlands has an overarching national public health emergency response plan in place that addresses planning for multiple communicable diseases with pandemic potential. The "Generic Action Plan Infectious Disease Crisis" ("Generiek Draaiboek Infectieziektencrisis") was published on 23 September 2014 by the National Consultation on Infectious Disease Control (Landelijk Overleg Infectieziektenbestrijding; LOI), and was last updated in 2020. [1] LOI is a national board founded in 1995 by the Ministry of Health, Welfare and Sports tasked with establishing uniform national agreements about the control of infectious diseases in the Netherlands. [2] The plan details information flow, different scenarios and practical guidelines for the collaboration between the medical professionals of the Community Health Services in the Netherlands (Gemeentelijke Gezondheids Dienst; GGD) [3] and the government during a crisis. [2, 3] The government agency that communicates with GGD is the Center of Infectious Disease Control (Centrum Infectieziektebestrijding; Cib) that is part of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), which reports to different Dutch Ministries including the Ministry of Health, Welfare and Sports. [4,5] The purpose of the Action Plan is to capture the general method of crisis management of the GGD and to explain the work processes that can play a role in this. This offers a conceptual framework and a uniform method that can be used for multiple types of outbreaks, both during preparation and during a crisis. [1] This increases the clarity of crisis management and ensures that any changes in the processes can easily be implemented. Furthermore, the Generic Action Plan refers to more specific plans and guidelines on

infectious diseases such as: tuberculosis, polio, COVID-19, and influenza. [1]

- [1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.
- [2] National Institute for Public Health and the Environment. 2018. "National Consultation on Infectious Disease Control". ("Landelijk Overleg Infectieziektenbestrijding"). [https://www.rivm.nl/Onderwerpen/I/Infectieziekte_informatie_voor_professionals/Landelijk_Overleg_Infectieziektenbestrijding_LOI]. Accessed 24 January 2021.
- [3] Community Health Services. "About". [<https://www.ggdghor.nl/english/>]. Accessed 24 January 2021.
- [4] National Institute for Public Health and the Environment). 2018. "Center of Diseasecontrol". ("Centrum Infectieziektenbestrijding"). [https://www.rivm.nl/RIVM/Organisatie/Centra/Centrum_Infectieziektenbestrijding]. Accessed 24 January 2021.
- [5] Government of the Netherlands. 2018. "Rijksinstituut voor Volksgezondheid en Milieu RIVM". [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 24 January 2021.

3.1.1b

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

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

Current Year Score: 1

The Netherlands has an overarching infectious disease crisis plan that has been updated in the last three years. The 2014 Generic Action Plan Infectious Disease Crisis (Generiek Plan Infectieziektenbestrijding) was last updated in February 2020 [1]. In particular, appendix 8 on hygienic measures was updated, by adding specification of the rules for changing clothes and personal protective equipment when entering and leaving the room of a patient infected with a communicable disease. [1]

- [1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

3.1.1c

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

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

Current Year Score: 0

The Netherlands has an overarching infectious disease crisis plan, but it does not mention considerations for paediatric and other vulnerable populations. The 2014 Generic Action Plan Infectious Disease Crisis (Generiek Plan Infectieziektenbestrijding) does not describe how these populations should be handled or treated. All it states is that in the case of a new virus with a pandemic potential, information is first needed about the virus, such as infectivity, severity, and vulnerable age groups or special risk groups [1]. No additional information on this matter is available from the Ministry of Health, Welfare and Sports website [2].

- [1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

- [2] Ministry of Health, Welfare, and Sports. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van->

volksgezondheid-welzijn-en-sport]. Accessed 24 January 2021.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 1

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

The Netherlands does not have specific mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. However, the Ministry of Health, Welfare and Sport and the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) do engage with private partners on an ad-hoc basis. For example, PERISCOPE is a public-private partnership between a group of pertussis experts from 15 universities and 3 national public health institutes (including from RIVM) all over Europe, and 2 small medium enterprises and the European Federation of Pharmaceutical Industries and Associations (EFPIA) partners Sanofi Pasteur and GSK. [1] During the COVID-19 pandemic, public-private relations were enhanced, in particular in regards to the Dutch testing capacity. Three pandemic laboratories were established, with organizations Saltro, Sanquin, and Eurofins Benelux. [2,3,4] There is no evidence on the websites of the Ministry of Health, Welfare and Sport or the RIVM, that these partnerships were established through a specific mechanism. [5,6]

[1] National Institute of Public Health and the Environment. 2018. "Periscope consortium".

[https://www.rivm.nl/en/About_RIVM/Mission_and_strategy/International_Affairs/International_Projects/IMI/PERISCOPE/Consortium]. Accessed 13 February 2021.

[2] Saltro. 22 December 2020. "Pandemic lab Saltro starts". ("Pandemielab Saltro van start"). [<https://saltro.nl/pandemielab>]. Accessed 13 February 2021.

[3] NOS. 3 September 2020. "Labs can handel more, but competition complicates matters". ("Testlabs kunnen wél meer aan, maar deze concurrentiestrijd zit in de weg"). [<https://nos.nl/nieuwsuur/artikel/2346643-testlabs-kunnen-wel-meer-aan-maar-deze-concurrentiestrijd-zit-in-de-weg.html>]. Accessed 12 February 2021.

[4] Volkskrant. 12 November 2020. "The Netherlands is going to test as fast as possible: new laboratory is good for 10.000 tests a day". ("Nederland kan gaan testen in turbostand: nieuw lab goed voor tienduizenden coronatests per dag"). [<https://www.volkskrant.nl/nieuws-achtergrond/nederland-kan-gaan-testen-in-turbostand-nieuw-lab-goed-voor-tienduizenden-coronatests-per-dag~b8c9fd89/>]. Accessed 13 February 2021.

[5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 13 February 2021.

[6] National Institute for Public Health and the Environment. "Home". [www.rivm.nl]. Accessed 13 February 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 2

The Netherlands has a plan in place to implement non-pharmaceutical interventions (NPIs) for more than one disease. The 2014 Generic Action Plan Infectious Disease Crisis (Generiek Plan Infectieziektenbestrijding) contains numerous provisions for NPIs. [1] The action plan states that in all cases (or suspected cases) of notifiable diseases, necessary measures must be taken without delay. Measures include isolation of infected persons, disinfection, information sharing, exclusion of individuals from educational establishments, exclusion of individuals from childcare centers, and exclusion of individuals from work. [1,2] The COVID-19 guideline presents the same measures. [2]

[1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.

[2] National Institute for Public Health and the Environment. "COVID-19". [<https://lci.rivm.nl/richtlijnen/covid-19#maatregelen>]. Accessed 6 February 2021.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 1

There is sufficient evidence that, in the past year, the Netherlands has activated its national emergency response plan for an infectious disease. In response to the COVID-19 pandemic, the Netherlands has published "COVID-19 guidelines", which serve as a plan for healthcare professionals. [1] The plan includes an extensive section on measures the public and health care professionals should take to prevent the spreading of COVID-19. Additionally, the Dutch government has also introduced numerous other measures in response to the pandemic, including the closure of certain businesses and the imposition of a curfew. [2, 3] That being said, the Dutch government has not explicitly initiated any pre-existing national emergency response plan, or rooted its pandemic response in a pre-existing document. The 2014 Generic Action Plan Infectious Disease Crisis (Generiek Plan Infectieziektenbestrijding), for example, has not been explicitly activated. [4] The World Health Organization

does not list the Netherlands as having conducted or planning to conduct any simulation exercises. [7]

- [1] National Consultation on Infectious Disease Control. "COVID-19". [<https://lci.rivm.nl/richtlijnen/covid-19#maatregelen>]. Accessed 6 February 2021.
- [2] Government of the Netherlands. "Coronavirus COVID-19". [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19>]. Accessed 6 Februari 2021.
- [3] Government of the Netherlands. "Curfew". ("Avondklok"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/avondklok>]. Accesse 6 February 2021.
- [4] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 24 January 2021.
- [5] World Health Organisation. "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise?region>All&country=314>]. Accessed 6 February 2021.

3.2.1b

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

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

Current Year Score: 0

There is no evidence that the Netherlands, in the past year, has identified a list of gaps and best practices in pandemic response through an exercise focused on biological-threats. The World Health Organisation indicated that the Netherlands published an after action review in 2017 after an "accidental spill and exposure of 2 laboratory workers to poliovirus type 2 in a vaccine manufacturing plant". [1,2] In 2018, the Netherlands also participated in a 2-day polio outbreak simulation exercise (POSE) that was organized by WHO/Europe and the European Centre for Disease Prevention and Control (ECDC). [2] The websites of the Ministry of Health, Welfare and Sports and the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) do not mention other, more recent, exercises. [3,4]

- [1] World Health Organization. 1 November 2018. "Simulated poliovirus containment breach helps countries increase biorisk safety and security". [<http://www.euro.who.int/en/countries/sweden/news/news/2018/11/simulated-poliovirus-containment-breach-helps-countries-increase-biorisk-safety-and-security>]. Accessed 6 February 2021.
- [2] World Health Organization. "After Action Review." [<https://extranet.who.int/sph/after-action-review>]. Accessed 6 February 2021.
- [3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 6 February 2021.
- [4] National Institute of Public Health of the Environment. "Home". [<https://www.rivm.nl>]. Accessed 6 February 2021.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands has undergone a national-level biological threat-focused exercise that has included private sector representatives. The last time that the Netherlands published an after action review was in 2017, after an accidental spill and exposure of 2 laboratory workers to poliovirus type 2 in a vaccine manufacturing plant. [1, 2] It is unclear whether or not the private sector was involved. [2] There is no evidence that relevant exercises are planned in the future on the webpages of the World Health Organization, and the Ministry of Health, Welfare and Sport, or the National Institute of Public Health of the Environment. [3, 4, 5, 6] There is no further evidence on the WHO Simulation Exercise page. [7]

[1] World Health Organization. 1 November 2018. "Simulated poliovirus containment breach helps countries increase biorisk safety and security". [<http://www.euro.who.int/en/countries/sweden/news/news/2018/11/simulated-poliovirus-containment-breach-helps-countries-increase-biorisk-safety-and-security>]. Accessed 6 February 2021.

[2] World Health Organization. "After Action Review." [<https://extranet.who.int/sph/after-action-review>]. Accessed 6 February 2021.

[3] World Health Organization. "Netherlands". [<https://www.who.int/countries/nld/>]. Accessed 6 February 2021.

[4] World Health Organization Region Office for Europe. "Netherlands".

[<https://www.euro.who.int/en/countries/netherlands>]. Accessed 6 February 2021.

[5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 6 February 2021.

[6] National Institute of Public Health of the Environment. "Home". [<https://www.rivm.nl>]. Accessed 6 February 2021.

[7] World Health Organization (WHO). Simulation Exercise. [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 6 February 2021.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has an emergency operations center. In the Netherlands, the National Crisis Centre (National Crisis Centrum; NCC) manages the system of the (national) crisis structure and facilitates information management and crisis communication at the national level [1]. At the time of (the threat of) a crisis, such as a terrorist attack, an infectious disease outbreak, or a pandemics, the NCC forms the basis of the national crisis organization. [2] The NCC is part of the National Coordinator for Counterterrorism and Security, which reports to the Ministry of Justice and Security [3, 4].

[1] National Crisis Centre. February 2018. "NCC Factsheet".

[<https://www.nctv.nl/documenten/publicaties/2018/02/15/factsheet-nationaal-crisiscentrum>]. Accessed 6 February 2021.

[2] National Crisis Centre. "Infectious diseases". ("Infectieziekten"). [<https://www.nctv.nl/onderwerpen/nationale-veiligheid-strategie/onverminderde-inzet-op-weerbaarheid/infectieziekten>]. Accessed 6 February 2021.

[3] National Coordinator for Counterterrorism and Security. "About us". [<https://www.nctv.nl/>]. Accessed 6 February 2021.

[4] Ministry of Justice and Security of the Kingdom of the Netherlands. 2018. "NCTV".

[<https://www.government.nl/topics/counterterrorism-and-national-security/preventing-crises-and-disasters>]. Accessed 6

February 2021.

3.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the Emergency Operations Centre in the Netherlands is required to conduct a health-related drill at least once per year or that it conducts a drill at least once per year. Under the 2010 Safety Regions Act, last amended in 2021, there is a legal requirement for all organizations responsible for disaster and crisis management to have a yearly drill [1,2]. According to the factsheet of the National Crisis Center (NCC), the Dutch Emergency Operation Centre performs such exercises to prepare for potential incidents together with Ministries and local response teams in the Netherlands at least once per year. [3] However, there is no evidence that these drills must cover public health emergencies. The National Coordinator for Counterterrorism and Security (Nationale Coördinator Terrorismebestrijding Veiligheid; NCTV), which publishes the yearly "National Security Strategy" (Nationale Veiligheid Strategie), acknowledges the potential risks of infectious diseases, but does not mention yearly drills. [4] There is no further information on the website of the Ministry of Health, Welfare, and Sport. [5]

[1] Government of the Netherlands. 24 May 2012. "Letter to the Minister of Security and Justice, policy note 26956 disaster management". [<https://zoek.officielebekendmakingen.nl/kst-26956-126.html>]. Accessed 6 February 2021.

[2] Government of the Netherlands. 2021. "Safety Regions Act". ("Wet Veiligheidsregio's").

[https://wetten.overheid.nl/BWBR0027466/2021-01-01#Paragraaf3_Artikel10]. Accessed 26 February 2021.

[3] National Crisis Centre. February 2018. "NCC Factsheet".

[<https://www.nctv.nl/documenten/publicaties/2018/02/15/factsheet-nationaal-crisiscentrum>]. Accessed 6 February 2021.

[4] National Coordinator for Counterterrorism and Security. 2019. "National Security Strategy - 2019". ("Nationale Veiligheid Strategie 2019"). [<https://www.nctv.nl/onderwerpen/nationale-veiligheid-strategie/documenten/publicaties/2019/6/07/nationale-veiligheid-strategie-2019>]. Accessed 6 February 2021.

[5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 9 March 2021.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that the Dutch emergency operations center has, within the past year, conducted a coordinated emergency response or exercise activated within 120 minutes. There is no evidence of this in the National Crisis Center's fact sheet, in the Generic Plan Infectious disease control, or on the website of the Ministry of Health, Welfare and Sport website. [1, 2, 3] There is a requirement for standardization of response times of emergency services by law in the Netherlands, as detailed in the Safety Regions Act of 1 October 2010 (last updated in 2017), but no specific time is mentioned. [4] No relevant information could be found on the Netherlands' country profiles on the United Nations Office for Disaster Risk Reduction and

World Health Organization websites. [5, 6]

- [1] National Crisis Centre. February 2018. "NCC Factsheet".
[\[https://www.nctv.nl/documenten/publicaties/2018/02/15/factsheet-nationaal-crisiscentrum \]](https://www.nctv.nl/documenten/publicaties/2018/02/15/factsheet-nationaal-crisiscentrum). Accessed 6 February 2021.
- [2] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 6 February 2021.
- [3] Ministry of Health, Welfare, and Sports. "Services". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 6 February 2021.
- [4] Ministry of Justice and Security. 1 October 2010. "Safety Regions Act". ("Wet Veiligheidsrisico's").
[\[https://www.government.nl/documents/decrees/2010/12/17/dutch-security-regions-act-part-i\]](https://www.government.nl/documents/decrees/2010/12/17/dutch-security-regions-act-part-i). Accessed 6 February 2021.
- [] United Nations Office for Disaster Risk Reduction (UNISDR). "Country: the Netherlands".
[\[https://www.unisdr.org/partners/countries/nld\]](https://www.unisdr.org/partners/countries/nld). Accessed 6 February 2021.
- [6] World Health Organisation. "Country resources: the Netherlands". [<https://extranet.who.int/sph/country/netherlands>]. Accessed 6 February 2021.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

The Dutch public health and national security authorities have carried out exercises to respond to a deliberate biological event, and they have publicly available guidelines for their collaboration in such events. The Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD) regularly organizes simulations that deal with infectious diseases and biological events. [1] Such exercises are frequently organized at the local level, with partners such as the Safety Region (Veiligheids Regio). In 2018, Safety Region Kennemerland organized a simulation where passengers landing at Schiphol airport were suspected of carrying infectious diseases. [2] The Generic Action Plan Infectious Disease Control details step-by-step procedures and guidelines for communication between the GGD, the Centre for Infectious Disease Control, the police and the Ministry of Health, Welfare and Sport during outbreaks of infectious diseases, including deliberate biological events. [3]

- [1] National Institute for Public Health and the Environment. 2018. "Training and practicing as preparation for infectious disease outbreaks". ("Opleiden, trainen en oefenen als voorbereiding op infectieziekteuitbraken").
[\[https://www.rivm.nl/opleiden-trainen-en-oefenen-als-voorbereiding-op-infectieziekteuitbraken\]](https://www.rivm.nl/opleiden-trainen-en-oefenen-als-voorbereiding-op-infectieziekteuitbraken). Accessed 6 February 2021.
- [2] Safety Region Kennemerland. 2018. "Simulation exercise, theme infectious disease at Schiphol airport".("Simulatie-oefening thema infectieziektenbestrijding Schiphol"). [<https://www.ggdkennemerland.nl/professionals/burgers/ghor/ghor-kennemerland-in-beeld/november-2018/simulatie-oefening-thema-infectieziektenbestrijding-schiphol>]. Accessed 6 February

2021.

[3] National Institute of Public Health of the Environment. "General Infectious Diseases Scenario". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The public health crisis communication strategy of the Netherlands outlines how messages will reach populations and sectors with different communications needs (e.g. different languages, location within country, media reach). The Factsheet National Team Crisis Communication (Factsheet Nationaal Kernteam Crisiscommunicatie) by the National Coordinator for Security and Counterterrorism (Nationale Coördinator voor Terrorismebestrijding en Veiligheid; NCTV) outlines communication during public health emergencies to target groups as well as to vulnerable populations (the elderly, people who do not speak Dutch, people with visual or auditory disorders). [1] Furthermore, the 2010 Dutch Safety Region Act (last updated in 2021) provides more information on crisis communication. Chapter 10 indicates which institutes, e.g. Ministries, Safety Regions, or municipalities, are responsible for crisis communication in certain scenarios. [2] Finally, the Generic Action Plan Infectious Disease Control (Generiek Plan Infectieziektebestrijding) contains broad guidelines that explain which healthcare organizations communicate what information to whom, but it does not specify how different communication needs are met. [3]

[1] National Coördinator for Security and Counterterrorism. 2019. "Factsheet National Team Crisis Communication" ("Factsheet Nationaal Kernteam Crisiscommunicatie"). [<https://www.nctv.nl/onderwerpen/nationaal-kernteam-crisiscommunicatie/documenten/publicaties/2019/6/18/factsheet-nkc>]. Accessed 10 March 2021.

[2] Government of the Netherlands. 2021. "Safety Region Act". ("Wet Veiligheidsregio's").

[<https://wetten.overheid.nl/BWBR0027466/2021-01-01#Paragraaf10>]. Accessed 10 March 2021.

[3] National Institute of Public Health of the Environment. "General Infectious Diseases Scenario". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a response plan in place detailing risk communication that is specifically intended for use during a public health emergency. In 2014, the National Coordination for Communicable Diseases Control (Landelijk Coördinatiestructuur

Infectieziekten; LCI) published the Generic Action Plan Infectious Disease Control (Generiek Plan Infectieziektebestrijding). [1] The action plan was last updated in 2020. [1] Section 5.4 details the communication strategy between different healthcare organisations but also towards the public; for example, the Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD) is expected to inform the press about regional crisis management. [1] However, when a crisis starts to affect the whole country, the Centre for Infectious Disease Control (Centrum Infectieziektenbeschrijding; Clb) carries this responsibility. Additionally, the Dutch government also has communication plans that specifically deal with zoonoses, namely the Policy Handbook Crisis Decision Making and Crisis Communication Zoonosis (Beleidshandboek crisisbesluitvorming en crisiscommunicatie zoönose). [2]

[1] National Institute of Public Health of the Environment. "General Infectious Diseases Scenario". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.

[2] Ministry of Health and Ministry of Economic Affairs. 2015. "Policy handbook crisis management and crisis communication zoonosis". ("Beleidshandboek crisisbesluitvorming en crisiscommunicatie zoönose").

[<https://www.rijksoverheid.nl/documenten/publicaties/2016/11/23/beleidshandboek-crisisbesluitvorming-en-crisiscommunicatie-zoonose>]. Accessed 6 February 2021.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the risk communication plan designates a specific position with the government to serve as the primary spokesperson to the public during a public health emergency. The Generic Action Plan Infectious Disease Control (Generiek Plan Infectieziektebestrijding) indicates that information is spread in a decentralized manner. [1] The Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD) and the Centre for Infectious Disease Control (Centrum Infectieziektenbeschrijding; Clb) have different responsibilities pertaining to communication. For example, the GGD communicates to the press when there are regional health emergencies. However, in the case of a national health crisis the Clb takes over this responsibility. [1] During the COVID-19 pandemic, the Dutch prime minister (Mark Rutte) and health minister (Hugo de Jonge) have given regular updates through press conferences. [2] There is no further evidence on the website of the Ministry of Health, Welfare and Sport, National Coordinator for Security and Counterterrorism (Nationale Coördinator voor Terrorismebestrijding en Veiligheid), or in the Dutch Safety Region Act. [3,4,5]

[1] National Institute of Public Health of the Environment. "General Infectious Diseases Scenario". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.

[2] Government of the Netherlands. 2021. "Videos of the press conference COVID-19". (" Video's persconferenties coronavirus"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/coronavirus-beeld-en-video/videos-persconferenties>]. Accessed 7 February 2021.

[3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 10 March 2021.

[4] National Coördinator for Security and Counterterrorism. 2019. "Factsheet National Team Crisis Communication" ("Factsheet Nationaal Kernteam Crisiscommunicatie"). [<https://www.nctv.nl/onderwerpen/nationaal-kernteam-crisiscommunicatie/documenten/publicaties/2019/6/18/factsheet-nkc>]. Accessed 10 March 2021.

[5] Government of the Netherlands. 2021. "Safety Region Act". ("Wet Veiligheidsregio's").

[<https://wetten.overheid.nl/BWBR0027466/2021-01-01#Paragraaf10>]. Accessed 10 March 2021.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 2

In the past year, the public health system has actively shared messages via online media platforms to inform the public about ongoing public health concerns. The National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) uses its website, as well as social media such as Twitter and LinkedIn, to update the general public on infectious disease outbreaks and emergencies, including COVID-19. [1, 2, 3, 4] The RIVM also regularly publishes about public health matters that are not related to ongoing emergencies, such as nutrition, screening for colon cancer, emissions, and the Environmental Accident Service. [5,6,7,8,9] All information is published in Dutch. [1,2,3,4,5,6,7]. The RIVM also publishes scientific information that rebukes misinformation. [8] For example, in March 2020 a faulty list pertaining to the number of COVID-19 patients in the Netherlands was spread, the RIVM countered this information and directed the public to the correct sources. [10]

[1] Government of the Netherlands. "Rijksinstituut voor Volksgezondheid en Milieu RIVM".

[<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 6 February 2021.

[2] National Institute for Public Health and the Environment. "RIVM website". [<https://www.rivm.nl/>]. Accessed 6 February 2021.

[3] National Institute for Public Health and the Environment. 2021. "RIVM twitter". [<https://twitter.com/rivm?lang=en>]. Accessed 6 February 2021.

[4] Rijksinstituut voor Volksgezondheid en Milieu (RIVM, National Institute for Public Health and the Environment of the Kingdom of the Netherlands). 2018. "RIVM LinkedIn". [<https://www.linkedin.com/company/rivm/?originalSubdomain=nl>].

[5] National Institute for Public Health and the Environment. 11 December 2020. "RIVM twitter".
[<https://twitter.com/rivm/status/1337378902948405249>].

[6] National Institute for Public Health and the Environment. 15 February 2021. "RIVM twitter".
[<https://twitter.com/rivm/status/1361326845707378691>]. Accessed 27 February 2021.

[7] National Institute for Public Health and the Environment. 9 March 2021. "RIVM twitter".
[<https://twitter.com/rivm/status/1369211611244867585>]. Accessed 27 February 2021.

[8] National Institute for Public Health and the Environment. 12 March 2021. "RIVM twitter".
[<https://mobile.twitter.com/rivm/status/1370356170221830154>]. Accessed 12 March 2021.

[9] National Institute for Public Health and the Environment. 9 March 2021. "RIVM twitter".
[<https://mobile.twitter.com/rivm/status/1369313208855650309>]. Accessed 10 March 2021.

[10] National Institute for Public Health and the Environment. 2 March 2020. "RIVM twitter".
[<https://mobile.twitter.com/rivm/status/1234418019385905152>]. Accessed 10 March 2021.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no evidence that senior leaders in the Netherlands have shared misinformation or disinformation on infectious diseases. There is no evidence of Mark Rutte (prime minister) or Hugo de Jonge, (health minister) having spread health-related misinformation. In fact, Hugo de Jonge regularly denounces "fake news" and tries to correct misinformation. [1, 2] On the Twitter accounts of both the prime minister and the health minister, scientifically-based information on infectious diseases such as COVID-19 is shared. [3,4] Both regularly reference research by the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) and the European Commission. [3,4]

[1] Hart van Nederland. 6 October 2020. "Minister De Jonge warns the public about the risk of misinformation about the corona approach". ("Minister De Jonge waarschuwt voor risico misinformatie op aanpak coronavirus").

[<https://www.hartvannederland.nl/nieuws/de-jonge-waarschuwt-voor-risico-misinformatie-op-aanpak-corona>]. Accessed 7 February 2021.

[2] Dagblad van het Noorden. 6 October 2021. "Minister De Jonge is disappointed about the spreading of fakenews about the corona approach: 'It becomes hard to controle the virus, when trust in the government is undermined'". ("Minister de Jonge baalt van nepnieuws bij aanpak corona: 'Als het vertrouwen in de overheid wordt ondermijnd, is het moeilijker om het virus onder controle te houden'"). [<https://www.dvhn.nl/extra/Minister-de-Jonge-baalt-van-nepnieuws-bij-aanpak-corona-Als-het-vertrouwen-in-de-overheid-wordt-ondermijnd-is-het-moeilijker-om-het-virus-onder-controle-te-houden-26083546.html>].

Accessed 7 February 2021

[3] Prime Minister. "Prime Minister twitter". [<https://twitter.com/minpres?lang=en>]. Accessed 10 March 2021.

[4] Hugo de Jonge. "Hugo de Jonge twitter". [<https://twitter.com/hugodejonge>]. Accessed 7 February 2021.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 93.29

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: 127.28

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: 3.0

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: 4.0

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

In the past year, the Netherlands has issued a restriction, without international/bilateral support, on the export/import of medical goods due to an infectious disease outbreak. There is no evidence of national-level restrictions on the websites of the Ministry of Health, Welfare and Sports, the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), the Ministry of Agriculture, Nature and Food Quality, or the Ministry of Foreign Affairs. [1,2,3,4] However, on 14 March 2020, in light of the pandemic, the European Union (EU), of which the Netherlands is a member, adopted Regulation 2020/402, under which special authorization was required to export personal protective equipment (masks, gloves, goggles, face shields and overalls) out of the EU. [5] On 23 April 2020 this was superseded by a

new regulation, numbered 2020/568, under which authorization was required to export personal protective equipment out of the EU, except to Albania, Andorra, Bosnia, the Faroe Islands, Gibraltar, Iceland, Kosovo, Lichtenstein, Montenegro, Norway, North Macedonia, San Marino, Serbia, and Switzerland. [6] On 26 May 2020 this rule expired, and special authorization was no longer requirement. [6]

- [1] Ministry of Health, Welfare and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 7 February 2021.
- [2] National Institute of Public Health and the Environment. "Home". [<https://www.rivm.nl>]. Accessed 7 February 2021.
- [3] Ministry of Agriculture, Nature and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 7 February 2021.
- [4] Ministry of Foreign Affairs. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-buitenlandse-zaken>]. Accessed 7 February 2021.
- [5] Dutch Tax Authority. 19 March 2020. "Prohibition on the exporting of personal protective equipment". ("Verbod op export van persoonlijke beschermingsmiddelen"). [<https://www.belastingdienst.nl/wps/wcm/connect/bldcontentnl/berichten/nieuws/douane/verbo-d-op-export-van-persoonlijke-beschermingsmiddelen>]. Accessed 7 February 2021.
- [6] European Commission. "Commission Implementing Regulation (EU) 2020/568 of 23 April 2020 making the exportation of certain products subject to the production of an export authorisation". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0568>]. Accessed 10 March 2021.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no evidence that the Netherlands has issued a restriction, without international/bilateral support, on the export/import of non-medical goods due to an infectious disease outbreak. There is no evidence of such restrictions on the websites of the Ministry of Health, Welfare and Sports, the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), the Ministry of Agriculture, Nature and Food Quality, or the Ministry of Foreign Affairs. [1,2,3,4]

- [1] Ministry of Health, Welfare and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 7 February 2021.
- [2] National Institute of Public Health and the Environment. "Home". [<https://www.rivm.nl>]. Accessed 7 February 2021.
- [3] Ministry of Agriculture, Nature and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 7 February 2021.
- [4] Ministry of Foreign Affairs. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-buitenlandse-zaken>]. Accessed 7 February 2021.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0 , No = 1

Current Year Score: 0

In the past year, the Netherlands has implemented a ban, without international or bilateral support, on travellers arriving from a specific country or countries due to an infectious disease outbreak. During the COVID-19 pandemic, the Netherlands has unilaterally introduced significant restrictions on entering the country, but there is no evidence that it has unilaterally introduced any outright bans. [1, 2, 3] People arriving from certain locations, and people of certain nationalities, have only been allowed to enter the country if they can produce a certified negative test result and undergo a period of self-isolation in the Netherlands. [1, 2, 3] However, on 17 March 2020 the 27 member states of the European Union (EU) agreed to ban entry into the EU from all countries (except for EU citizens, British citizens and people who live in the EU or the United Kingdom). [4] Since then the EU ban has been periodically reviewed, and entry has been allowed from certain countries. [5]

[1] Government of the Netherlands. 2021. "Traveling to the Netherlands and the European travel ban". ("Naar Nederland reizen en het Europese inreisverbod"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/reizen-en-vakantie/inreizen-doorreizen-nederland-en-het-eu-inreisverbod>]. Accessed 7 February 2021.

[2] Government of the Netherlands. "Negative COVID-19 test result compulsory when arriving in the Netherlands". ("Negatieve COVID-19-testuitslagen en verklaring verplicht bij vertrek naar Nederland"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/reizen-en-vakantie/verplichte-negatieve-covid-19-testuitslagen>]. Accessed 7 February 2021.

[3] Government of the Netherlands. "Quarantining when arriving in the Netherlands". ("Thuisbliven (in thuisquarantine) bij aankomst in Nederland"). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-covid-19/reizen-en-vakantie/in-thuisquarantine-bij-aankomst-in-nederland>]. Accessed 7 February 2021.

[4] Government of the Netherlands. 2020. "The Netherlands closes borders to those outside Europe". ("Nederland sluit de grenzen voor mensen van buiten Europa"). [<https://www.rijksoverheid.nl/actueel/nieuws/2020/03/18/nederland-sluit-de-grenzen-voor-mensen-van-buiten-europa>]. Accessed 7 February 2021.

[5] Government of the Netherlands. 2020. "The Netherlands lifts ban for certain countries". ("Nederland heft inreisverbod op voor selecte groep landen"). [<https://www.rijksoverheid.nl/actueel/nieuws/2020/06/30/nederland-heft-inreisverbod-op-voor-selecte-groep-landen>]. Accessed 7 February 2021.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 360.54

2017

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 1118.39

2017

WHO; national sources

4.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the country has 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 as there is no evidence that the Netherlands has a public workforce strategy in place. The Netherlands Institute for Health Services Research (Nivel) continuously monitors the country's health workforce, such as the number of doctors, dentists, mental health professions, specialized nurses, dental hygienists. [1] Results are published on their website, such as "General practitioners: a balance of supply and demand", which was published in 2018. [2,3] Furthermore, Nivel publishes 28 factsheets, which can be used to create strategies for different regions in the Netherlands. [4] The Ministry of Health, Welfare and Sports uses these reports to assess needs and to decide on its (regional) approach. [5] However, there is no evidence of a published healthcare workforce strategy document, including on the websites of Nivel, the National Institute of Public Health of the Environment, and the Ministry of Health, Welfare and Sports. [6, 7, 8]

[1] Netherlands Institute for Health Services Research. 2021. "Registration of professionals in the care system".

("Beroepenregistraties in de Gezondheidszorg"). [<https://www.nivel.nl/nl/panels-en-registraties/beroepenregistraties-de-gezondheidszorg>]. Accessed 30 January 2021.

[2] Netherlands Institute for Health Services Research. " Job market general practitioners per region - registration of professionals". ("Arbeidsmarkt huisartsenzorg per regio centraal - Beroepenregistraties").

[<https://www.nivel.nl/nl/beroepenregistraties-de-gezondheidszorg/arbeidsmarkt-huisartsenzorg-regio-centraal>]. Accessed 30 January 2021.

[3] Netherlands Institute for Health Services Research. 2018. "General practitioners: a balance of supply and demand". ("Balance in vraag en aanbod huisartsenzorg").

[https://www.nivel.nl/sites/default/files/bestanden/Balans_in_vraag_en_aanbod_huisartsenzorg.pdf] Accessed 30 January 2021.

[4] Netherlands Institute for Health Services Research. 2020. "Publications". ("Publicaties").

[<https://www.nivel.nl/nl/publicaties-2>]. Accessed 26 February 2021.

- [5] Ministry of Health, Welfare, and Sport. 20 December 2018. " Letter to the House of Representatives, research reports" ("Aanbieding onderzoeksrapporten 'Zorglandschap en zorggebruik in een veranderende eerste lijn' en 'Balans in vraag en aanbod huisartsenzorg'"). [<https://www.rijksoverheid.nl/documenten/kamerstukken/2018/12/20/aanbiedingsbrief-bij-onderzoeksrapporten-'zorglandschap-en-zorggebruik-in-een-veranderende-eerste-lijn'-en-'balans-in-vraag-en-aanbod-huisartsenzorg>]. Accessed 30 January 2021.
- [6] Netherlands Institute for Health Services Research. "Home". [<https://www.nivel.nl>]. Accessed 30 January 2021.
- [7] National Institute of Public Health and the Environment. "Home". [<https://www.rivm.nl>]. Accessed 7 February 2021.
- [8] Ministry of Agriculture, Nature and Food Quality. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 7 February 2021

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 317

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

The Netherlands has the capacity to isolate patients with highly communicable diseases in a biocontainment patient care unit. According to the National Institute of Public Health of the Environment, in the Netherlands, patients with highly contagious or dangerous diseases - such as Smallpox, COVID-19, SARS and Ebola - can be placed in isolation in biocontainment units [1]. According to the Generic Action Plan Infectious Disease Control, issued by the Ministry of Health, Welfare, and Sports in 2014, advanced isolation capacity is available in the Netherlands, including the use of personal protective equipment (PPE) for the patient, medical staff and visitors as well as mandatory daily ventilation and contamination of the room where the patient is isolated [2]. For example, in 2019 a patient suspected of having Ebola was placed in quarantine in an isolation unit at Maasstad Hospital in Rotterdam. [3]

[1] Rijksinstituut voor Volksgezondheid en Milieu (RIVM, National Institute for Public Health and the Environment of the Kingdom of the Netherlands). 2021. "Notifiable infectious diseases".

[https://www.rivm.nl/Onderwerpen/M/Meldingsplicht_infectieziekten/Welke_infectieziekten_zijn_meldingsplichtig]. Accessed 6 February 2021.

[2] Ministry of Health of the Kingdom of the Netherlands. December 2014. "Generiek Plan Infectieziektebestrijding (Generic Action Plan Infectious Disease Control)". [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 6 February 2021.

[3] DutchNews.nl. 2019. "Ebola scare at Rotterdam's Maasstad hospital is a false alarm".

[<https://www.dutchnews.nl/news/2019/08/ebola-scare-at-rotterdams-maasstad-hospital-is-a-false-alarm/>]. Accessed 6

February 2021.

4.1.2c

Does the country meet one of the following criteria?

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that the Netherlands has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years or developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years. The 2014 Generic Action Plan Infectious Disease Crisis (Generiek Plan Infectieziektenbestrijding) mentions rules for isolation. It addresses topics such as quarantining at hospitals or at home, transport to hospitals and general hygiene. [1] However, it does not mention any method to expand isolation capacity. The same goes for the COVID-19 guidelines. In these guidelines, the duration and the manner through which one should isolate are made clear, but expansion of isolation capacity is not mentioned. There is no further information on the website of the ministry of Health, Welfare, and Sport. [3]

[1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan Infectious Disease Crisis". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. [2] National Consultation on Infectious Disease Control. "COVID-19". [<https://lci.rivm.nl/richtlijnen/covid-19#maatregelen>]. Accessed 6 February 2021.

[3] Ministry of Health, Welfare, and Sports. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 24 January 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 1

There is a national procurement protocol in place, which can be used by the Ministries of Health and Agriculture for the acquisition of laboratory needs and medical supply needs. In 2018 the Netherlands introduced General Government purchasing conditions (ARIV 2018), which includes procurement protocols that the Ministry of Health, Welfare and Sports, and the Ministry of Agriculture have to adhere to. [1] There are about 30 procurement categories of which 'laboratory' is one, but while the category mentions the procurement of laboratory and medical gasses, it mentions no specific medical products. [2] Governmental organisations that have a laboratory function, such as the Ministry of Defense and the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), can use this category for

the acquisition of laboratory supplies. [3] Due to the COVID-19 crisis, the Dutch government created the National Consortium Resources (Landelijk Consortium Hulpmiddelen) which is used for the acquisition of medical supplies. [4]

- [1] Government of the Netherlands. 2018. "General Government purchasing conditions". ("Besluit vaststelling Algemene Rijksvoorraarden voor inkoop (ARBIT-2018, ARIV-2018 en ARVODI-2018)").
[\[https://wetten.overheid.nl/BWBR0040889/2018-05-15#Bijlage_2\]](https://wetten.overheid.nl/BWBR0040889/2018-05-15#Bijlage_2). Accessed 30 January 2021.
- [2] Government of the Netherlands. " Acquisition plans Dutch government per category (categoryplans)". ("Inkoopplannen Rijk per categorie (categorieplannen)"). [<https://www.rijksoverheid.nl/onderwerpen/zakendoen-met-het-rijk/hoe-het-rijk-inkoopt/categorieplannen-van-het-rijk>]. Accessed 30 January 2021.
- [3] National Institute of Public Health of the Environment. "Acquisition category: Laboratory". ("Inkoopcategorie: laboratoriū"). [<https://www.rivm.nl/contact/zakendoen-met-rivm/inkoop>]. Accessed 30 January 2021.
- [4] Ministry of Health, Welfare, and Sports. "National Consortium Resources". ("Landelijk Consortium Hulpmiddelen"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-consortium-hulpmiddelen>]. Accessed 30 January 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 2

The Netherlands has a mandate in place that requires a stockpile of medical supplies (including medical countermeasures) for national use during a public health emergency. The Medicines Act, introduced in 2007 and last updated in 2020, requires that a sufficient stockpile of medical supplies must be maintained. [1] The Dutch General Practitioner Society presents a list of medical supplies that general practitioners must have at all times, but it does not mention specific quantities. [2] In 2020, the state Secretary of the Ministry of Health, Welfare, and Sports reported that there were stockpiles containing enough antiviral drugs available for an influenza pandemic. [3] In addition, the National Consortium Resources (Landelijk Consortium Hulpmiddelen; LCH), which was created during the COVID-19 pandemic, maintains a stockpile of medical supplies for the duration of the pandemic. As of 11 January 2021, the LCH contains 726,100,244 surgical masks, 190,705,350 gloves, and 2,943,052 pairs of protective goggles. [4] Despite this, shortages of medical supplies were detected during the COVID-19 pandemic, in response to which, in August 2020 the Ministry of Health, Welfare, and Sports set the objective of increasing stockpiles of medical supplies to 5 months' supply by 1 July 2022. [5]

- [1] Government of the Netherlands. 2020. "Medicines act". ("Geneesmiddelenwet").
[\[https://wetten.overheid.nl/BWBR0021505/2020-04-01\]](https://wetten.overheid.nl/BWBR0021505/2020-04-01). Accessed 30 January 2021.
- [2] Dutch General Practitioner Society. "Basic equipment in a general practitioners office". ("Basisuitrusting medische hulpmiddelen huisartsenpraktijk").
[\[https://www.nhg.org/sites/default/files/content/nhg_org/uploads/lijst_medicische_hulpmiddelen_2019.pdf\]](https://www.nhg.org/sites/default/files/content/nhg_org/uploads/lijst_medicische_hulpmiddelen_2019.pdf). Accessed 27 February 2021.
- [3] National Consortium Resources. 2021. "Current stockpile of personal protective equipment for care professionals". ("Actuele voorraad persoonlijke beschermingsmiddelen voor de zorg"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-consortium-hulpmiddelen/actuele-voorraad-persoonlijke-beschermingsmiddelen-voor-zorg>]. Accessed 31 January 2021
- [4] National Consortium Resources. 2021. "Current stockpile of personal protective equipment for care professionals".

("Actuele voorraad persoonlijke beschermingsmiddelen voor de zorg"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-consortium-hulpmiddelen/actuele-voorraad-persoonlijke-beschermingsmiddelen-voor-zorg>]. Accessed 30 January 2021.

[5] Government of the Netherlands. 8 August 2020. "Letter of the Minister for medical care". ("Brief van de Minister voor medische zorg"). [<https://zoek.officielebekendmakingen.nl/kst-29477-660.html>]. Accessed 30 January 2021.

4.2.2b

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

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

Current Year Score: 0

There is insufficient evidence that the Netherlands has a stockpile of laboratory supplies for national use during a public health emergency. The National Consortium Resources (Landelijk Consortium Hulpmiddelen; LCH), which was created as a result of COVID-19, maintains a stockpile of medical supplies, but does not mention laboratory supplies. [1] That being said, in 2018 the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) has indicated that it aims to diminish excessive stockpiles of laboratory supplies. [2] The Ministry of Health, Welfare and Sports and the Ministry of Defense do not mention stockpiles of laboratory supplies. [3,4]

[1] National Consortium Resources. 2021. "Current stockpile of personal protective equipment for care professionals". ("Actuele voorraad persoonlijke beschermingsmiddelen voor de zorg"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-consortium-hulpmiddelen/actuele-voorraad-persoonlijke-beschermingsmiddelen-voor-zorg>]. Accessed 30 January 2021.

[2] National Institute of Public Health of the Environment. 2018. "Socially responsible procurement". ("Maatschappelijk Verantwoord Inkopen Doen!"). [<https://www.pianoo.nl/sites/default/files/media/documents/Manifest-Actieplan-MVI-RIVM.pdf>]. Accessed 30 January 2021.

[3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.

[4] Ministry of Defense. "Home". [<https://www.defensie.nl>]. Accessed 30 January 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that the Netherlands conducts an annual review of the national stockpile to ensure the supply is sufficient for public health emergencies. The Board for the Evaluation of Medicines (het college ter beoordeling van geneesmiddelen) has reported that medicine shortages are more and more common. [1] However, it does not mention what the stockpile of medicines in the Netherlands should be. When medicine shortages occur, or are expected to occur, the Notification Centre for Medicine Deficits and Defects (Meldpunt geneesmiddelentekorten en -defecten) should be notified. [2] This organisation falls under the jurisdiction of the Ministry of Health, Welfare and Sport. There is no further information on the website of the Ministry of Health, Welfare, and Sport. [3]

- [1] College ter beoordering van geneesmiddelen. "Medicine deficit". (<https://www.cbg-meb.nl/onderwerpen/medicijninformatie-medijntekorten>). [<https://www.cbg-meb.nl/onderwerpen/medicijninformatie-medijntekorten>]. Accessed 4 May 2021.
- [2] Meldpunt geneesmiddelentekorten en - defecten. "Home". [<https://www.meldpuntgeneesmiddelentekortendefecten.nl>]. Accessed 4 May 2021.
- [3] Ministry of Health, Welfare, and Sports. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 24 January 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is evidence that the Netherlands has pre-existing plans or agreements to procure medical supplies during public health emergencies, but no evidence that it has a plan to leverage domestic manufacturing capacity to produce medical supplies for use during a public health emergency. The Netherlands signed the European Union Joint Procurement Agreement for medical countermeasures in 2014. [1, 2] The Agreement provides for a voluntary mechanism enabling participating EU countries to jointly procure medical countermeasures during a public health emergency. [1, 2] However, these plans do not show evidence that other medical supplies are included. During the ongoing COVID-19 pandemic, the government has concluded ad hoc agreements for the procurement of both medical supplies and medical countermeasures. In light of the COVID-19 pandemic, the National Consortium Resources (Landelijk Consortium Hulpmiddelen; LCH) was established. [3] Through the LCH, it is possible to order additional personal protective equipment. As of 11 January 2021, the LCH stores 726,100,244 surgical masks, 190,705,350 gloves, and 2,943,052 pairs of protective goggles. Neither ad hoc agreements nor plans such as the Influenza Guidelines, the Polio Guidelines, nor the Generic Action Plan for Infectious Disease Control, nor the websites of the Ministry of Health, Welfare and Sports and the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) mention leveraging domestic manufacturing. [4,5,6,7,8]

- [1] European Commission. 2020, "Preparedness and response planning" [https://ec.europa.eu/health/security/preparedness_response_en]. Accessed 10 March 2021.
- [2] European Union. "Joint Procurement Agreement to Procure Medical Countermeasures". [https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/jpa_agreement_medicalcountermeasures_en.pdf] Accessed 10 March 2021.
- [3] National Consortium Resources. 2021. "Current stockpile of personal protective equipment for care professionals". ("Actuele voorraad persoonlijke beschermingsmiddelen voor de zorg"). [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/tijdelijke-crisisstructuur/landelijk-consortium-hulpmiddelen/actuele-voorraad-persoonlijke-beschermingsmiddelen-voor-zorg>]. Accessed 30 January 2021.
- [4] National Institute of Public Health of the Environment. "Influenza". [<https://lci.rivm.nl/richtlijnen/influenza>]. Accessed 31 January 2021.
- [5] National Institute of Public Health of the Environment. "Polio". [<https://lci.rivm.nl/richtlijnen/polio>]. Accessed 31 January 2021.

- [6] National Consultation on Infectious Disease Control. "General Infectious Diseases Scenario". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.
- [7] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [8] National Institute of Public Health of the Environment. "Home". [<https://www.rivm.nl>] Accessed 31 January 2021.

4.2.3b

Does the country meet one of the following criteria?

- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency?
- Is there evidence of a plan/mechanism to procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency?

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

Current Year Score: 0

There is no evidence that the Netherlands has any pre-existing plans or agreements to leverage domestic manufacturing capacity or procure laboratory supplies during public health emergencies, but during the ongoing COVID-19 pandemic the government has concluded ad hoc agreements. There is no evidence of relevant plans or agreements in the Influenza Guidelines, the Polio Guidelines, or the Generic Action Plan for Infectious Disease Control, or on the websites of the Ministry of Health, Welfare and Sports and the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM). [1,2,3,4,5] These specific and more general guidelines are plans published with the intent to support healthcare professionals when dealing with different infectious diseases. [1,2,3] For example, the Generic Action Plan for Infectious Disease Control indicates how information on known and unknown infectious diseases should be spread among governmental institutes. [1] None of these plans mention laboratory supplies and how to increase capacity. Furthermore, the Netherlands joined the European Union Joint Procurement Agreement for medical countermeasures in 2014, but it does not cover laboratory supplies. [7,8]

- [1] National Institute of Public Health of the Environment. "Influenza". [<https://lci.rivm.nl/richtlijnen/influenza>]. Accessed 31 January 2021.
- [2] National Institute of Public Health of the Environment. "Polio". [<https://lci.rivm.nl/richtlijnen/polio>]. Accessed 31 January 2021.
- [3] National Institute of Public Health of the Environment. "Generic Action Plan for Infectious Disease Control". ("Generiek draaiboek"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.
- [4] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.
- [5] National Institute of Public Health of the Environment. "Home". [<https://www.rivm.nl>] Accessed 31 January 2021.
- [6] European Commission. 2020, "Preparedness and response planning"
[https://ec.europa.eu/health/security/preparedness_response_en]. Accessed 10 March 2021.
- [7] European Union. "Joint Procurement Agreement to Procure Medical Countermeasures".
[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/jpa_agreement_medicalcountermeasures_en.pdf] Accessed 10 March 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a plan in place for dispensing medical countermeasures for national use during a public health emergency. Appendix 1 of the Generic Action Plan Infectious Disease Crisis ("checklist for preparation") clarifies that the National Institute of Public Health of the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) supports medical professionals on the ground on how to distribute, dispense and store vaccines during a crisis. [1,2] In particular, appendix 1 indicates that the RIVM will work together with the Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD), providing assistance in the distribution and storage of vaccines by providing storage trucks and refrigerated storing locations. The appendix also notes that GGD have scripts prepared for how to conduct large-scale vaccination campaigns (including locations, staffing and training needs). The document also notes that other considerations, such as locations for large-scale interventions (e.g. vaccination campaigns) and coordination agreements with municipal administrations have also been mapped out by GGD. [1] No further information can be found on the website of the RIVM, the GGD, or the Ministry of Health, Welfare and Sport. [3,4,5]

[1] National Institute for Public Health and the Environment. 2019. "Annex 1". ("Bijlage 1").

[<https://lci.rivm.nl/sites/default/files/2020-03/Bijlage%20201%20Checklist%20voorbereiding.pdf>]. Accessed 31 January 2021.

[2] National Consultation on Infectious Disease Control. "General Infectious Diseases Scenario". ("Generiek draaiboek").

[<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 31 January 2021.

[3] National Institute of Public Health of the Environment. "Home". [www.rivm.nl]. Accessed 27 February 2021.

[4] Community Health Services in the Netherlands. "About us". [<https://www.ggdghor.nl/english/>]. Accessed 31 January 2021.

[5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.

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

4.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the Netherlands has a public plan in place to receive health personnel from other countries to respond to a public health emergency. As a member of the European Union (EU), the Netherlands can request advice and assistance from other Member States during a public health emergency, for example on how and where to employ staff, or request additional staff from other countries [1]. According to a 2013 report on international disaster management by the National Physical Safety Institute that advises the Ministry of Justice, the Netherlands can also request international

assistance, including health personnel [2]. There is no additional information available on the websites of the Ministry of Health, Welfare and Sport or the Ministry of Defense. [3,4]

[1] European Centre for Disease Control and Prevention (ECDC). 2017. "Public Health Emergency Preparedness Core Competencies EU Member States". [<https://ecdc.europa.eu/sites/portal/files/documents/public-health-emergency-preparedness-core-competencies-eu-member-states.pdf>]. Accessed 31 January 2021.

[2] National Physical Safety Institute. 2013. "International disaster management" [<https://www.ifv.nl/kennisplein/Documents/201304-NIFV-KP-Internationale-rampenbestrijding.pdf>]. Accessed 31 January 2021.

[3] Ministry of Health, Welfare and Sport. "Home". [<https://www.government.nl/ministries/ministry-of-health-welfare-and-sport>]. Accessed 31 January 2021.

[4] Ministry of Defence. "Home" [<https://english.defensie.nl/>]. Accessed 31 January 2021.

4.4 HEALTHCARE ACCESS

4.4.1 Access to healthcare

4.4.1a

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

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

Current Year Score: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 100

2003

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: 611.23

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1 , No = 0

Current Year Score: 1

In the Netherlands, healthcare workers are prioritized for treatment during pandemics. The Health Council of the Netherlands (Gezondheidsraad), an advisory body to the Dutch government, has released guidelines for prioritizing patients during influenza pandemics. These guidelines emphasize that medical personnel have a central role in limiting suffering and mortality related to the disease, therefore healthcare staff should be treated with antiviral drugs as soon as they have the earliest symptoms of pandemic flu, ahead of other patients. [1] In the case of the COVID-19 pandemic, healthcare workers are receiving early vaccines, but there is no evidence that they are being prioritized in any other way. [2] No examples on prioritized treatment for infectious diseases other than influenza were found on the website of the Ministry of Health, Welfare, and Sports. [3]

[1] Health Council of the Kingdom of the Netherlands. 2004. "Antiviral drugs during influenza pandemics".

[<https://www.gezondheidsraad.nl/documenten/adviezen/2004/02/24/antivirale-middelen-bij-een-griepandemie>. Accessed 31 January 2021.

[2] National Institute of Public Health of the Environment. "COVID-19 vaccines - professionals". ("Covid-19 vaccinatie - professionals"). [<https://www.rivm.nl/covid-19-vaccinatie/professionals>]. Accessed 31 January 2021.

[2] Ministry of Health of the Kingdom of the Netherlands. "Services". [[https://www.rijksoverheid.nl/ministeries/ministerie-volksgezondheid-welzijn-en-sport](https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport)]. Accessed 31 January 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a system in place to coordinate communication between health officials and healthcare workers during a public health emergency.

This is detailed in the Generic Action Plan for Infectious Disease Control (Generiek Draaiboek Infectieziektencrisis) [1] that was published on 23 September 2014 by the National Consultation on Infectious Disease Control (Landelijk Overleg Infectieziektenbestrijding; LOI). The LOI is a national board founded in 1995 by the Ministry of Health, Welfare and Sports, tasked with establishing uniform national agreements about the control of infectious diseases in the Netherlands [2]. The plan details information flow, different scenarios and practical guidelines for the collaboration between the medical professionals of the Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD) [3] and the government during a crisis. The government agency that communicates with GGD is the Centre of Disease Control (Centrum Infectieziektebestrijding; CiB) [4] that is part of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), [5] which reports to different Dutch Ministries including the Ministry of Health, Welfare and Sports. Section 5.2 of the Plan [1] ("collaboration between national partners"), explains that electronic reporting of a notifiable disease by the GGD to the CiB takes place via a system called Osiris. In case the situation is considered a potential public health concern, the CiB will establish a response team to ensure proper coordination with the GGD in the further investigation of the outbreak.

[1] National Consultation on Infectious Disease Control. 2014. "Generic Action Plan for Infectious Disease Control". ("Generiek Plan Infectieziektenbestrijding"). [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 3 February 2021.

[2] National Institute for Public Health and the Environment. "National Consultation on Infectious Disease Control". 2018. ("Landelijk overleg Infectieziektenbestrijding: LOI").

[https://www.rivm.nl/Onderwerpen/I/Infectieziekte_informatie_voor_professionals/Landelijk_Overleg_Infectieziektenbestrijding_LOI]. Accessed 3 February 2021.

[3] Community Health Services "About us". [<https://www.ggdghor.nl/english/>]. Accessed 3 February 2021.

[4] National Institute for Public Health and the Environment). "Center of Disease Control"). "Centrum Infectieziektenbestrijding". [https://www.rivm.nl/RIVM/Organisatie/Centra/Centrum_Infectieziektenbestrijding]. Accessed 3 Februari 2021.

[5] Government of the Netherlands. "National Institute for Public Health and the Environment". ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 3 February 2021.

4.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that the system for public health officials and healthcare workers to communicate during an emergency encompasses healthcare workers in both the public and private sector. There is no specific mention of communication between healthcare workers in both public and private sector in the Generic Action Plan for Infectious Disease Control. [1] The Plan explains the communication between the healthcare workers via the Community Health Services in the Netherlands (Gemeentelijke GezondheidsDienst; GGD) and the government via the Centre of Disease Control (Centrum Infectieziektebestrijding; CiB), which is part of the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) [2, 3]. The GGD is a Dutch government public health office, and its website does not mention involvement of the private sector in its organization. [2] The General Action Plan does not specifically describe the communication system between health care workers in the private sectors and the CiB. [1] No additional information could be found on the website of the Ministry of Health, Welfare and Sport [4].

[1] National Institute for Public Health and the Environment. "National Consultation on Infectious Disease Control". 2018. ("Landelijk overleg Infectieziektebestrijding: LOI").

[https://www.rivm.nl/Onderwerpen/I/Infectieziekte_informatie_voor_professionals/Landelijk_Overleg_Infectieziektebestrijding_LOI]. Accessed 3 February 2021.

[2] Community Health Services "About us". [<https://www.ggdghor.nl/english/>]. Accessed 3 February 2021.

[3] Government of the Netherlands. "National Institute for Public Health and the Environment". ("Rijksinstituut voor Volksgezondheid en Milieu RIVM"). [<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 3 February 2021.

[4] Ministry of Health of the Kingdom of the Netherlands."Services". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 3 February 2021.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Dutch public health system monitors the number of healthcare-associated infections (HCAs). The National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM) monitors the number of HCAs with a network called PREZIES (PREventie van ZIEkenhuisinfecties door Surveillance; Prevention of Hospital-Acquired Infections by Surveillance). The PREZIES network is a joint venture between participating hospitals and the RIVM. PREZIES wants to improve the quality of care in hospitals by reducing the occurrence of hospital infections and their risk factors. This happens, among other things, through the introduction and maintenance of standardized surveillance of hospital infections in hospitals. This gives insight into the frequency of hospital infections within the institution [1]. The RIVM reports to several Dutch Ministries, including the Ministry of Health, Welfare and Sport [2]

- [1] National Institute for Public Health and the Environment. 2020 "About the PREZIES Network". ("PREZIES"). [https://www.rivm.nl/Onderwerpen/P/PREZIES]. Accessed 3 February 2021.
- [2] Ministry of Health of the Kingdom of the Netherlands. "Services". [https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport]. Accessed 3 February 2021.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a national requirement for ethical review before beginning a clinical trial. Under the Medical Research Involving Subjects Act (adopted 1998, last amended 2020), clinical trials must be evaluated by the Central Committee on Research Involving Human Subjects, or by one of the Netherlands' 24 accredited Medical Research Ethics Committees [1, 2, 3]

[1] Government of the Netherlands. 2020. " Medical Research Involving Subjects Act". ("Wet medisch-wetenschappelijk onderzoek met mensen"). [https://wetten.overheid.nl/BWBR0009408/2020-01-01]. Accessed 3 February 2021.

[2] Central Committee on Research Involving Human Subjects. "Is ethical review needed for my project?". ("Uw onderzoek: WMO-plichtig of niet?"). [https://www.ccmo.nl/onderzoekers/wet-en-regelgeving-voor-medisch-wetenschappelijk-onderzoek/uw-onderzoek-wmo-plichtig-of-niet]. Accessed 3 February 2021.

[2] European Network of Research Ethics Committees (EUREC). "National information: Netherlands". [http://www.eurecnet.org/information/netherlands.html]. Accessed 3 February 2021.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. Prior to beginning a clinical trial, a "clinical trial application dossier" (CTA) must be submitted to an accredited Ethics Committee (EC) and to the Central Commission on Research in Human Subjects (CCMO) [1]. This process is based on the Human-Scientific Research on Humans Decree (Wet medisch-wetenschappelijk onderzoek met mensen; Wet WMO), which was introduced in 1998 and last updated in 2020. [2] The WMO itself does not mention expedited processes. [2] However, during public health emergencies the CCMO can use an expedited approval process, which lasts 14 days (not including the response period). [3] During the COVID-19 pandemic, an expedited process has been applied, which takes a maximum of 25 days (including the response period). [4]

- [1] Central Committee on Research Involving Human Subjects. "Is ethical review needed for my project?". ("Uw onderzoek: WMO-plichtig of niet?"). [<https://www.ccmo.nl/onderzoekers/wet-en-regelgeving-voor-medisch-wetenschappelijk-onderzoek/uw-onderzoek-wmo-plichtig-of-niet>]. Accessed 3 February 2021.
- [2] Government of the Netherlands. 2020. "Human-Scientific Research on Humans Decree". ("Wet medisch-wetenschappelijk onderzoek met mensen"). [<https://wetten.overheid.nl/BWBR0009408/2020-01-01#Paragraaf7>]. Accessed 26 February 2021.
- [3] PRA Health Services. 2018. "Executive summary: Expedited Regulatory Approval in the Netherlands". [<https://silo.tips/download/favorable-regulatory-procedures-in-the-netherlands-phase-i-ii>]. Accessed 27 February 2021.
- [4] Central Committee on Research Involving Human Subjects. "Fast-tracking CTA by the CCMO". ("Procedure fast-trackbeoordeling door CCMO als toetsingscommissie"). [<https://www.ccmo.nl/onderzoekers/primaire-indiening-bij-de-toetsingscommissie/procedure-fast-track-beoordeling-door-ccmo-als-toetsingscommissie>]. Accessed 3 February 2021.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has a government agency responsible for the approval of new human medicinal products. The Medicines Evaluation Board (College ter Beoordeling van Geneesmiddelen; CBG) has this responsibility. [1] The CBG consists of 17 members (doctors, pharmacists and scientists), including a chairman. The chairman and members are appointed by the Minister of Health, Welfare and Sport [2]. The term of office for all members is 4 years, and can be extended twice by 4 years by reappointment. The method and responsibilities of the Board are laid down in the Medicines Act [1]. In addition, in Europe, regulatory decisions on market authorization of new medical countermeasures made by the European Medicines Agency (EMA) are normally followed on a national level (in the Netherlands, by the CBG) through a centralized authorization procedure [3].

- [1] Medicines Evaluation Board. "The Board". ("Het College"). [<https://www.cbg-meb.nl/onderwerpen/over-cbg-het-college>]. Accessed 3 February 2021.

- [2] Ministry of Health of the Kingdom of the Netherlands. "Services". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 3 February 2021.

- [3] European Medicines Agency (EMA). "What we do". [<https://www.ema.europa.eu/en/about-us/what-we-do/authorisation-medicines>]. Accessed 3 February 2021.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The Netherlands has an expedited process for unregistered medical countermeasures to treat ongoing pandemics. The Medicines Evaluation Board (College ter Beoordeling van Geneesmiddelen; CBG), which is responsible for the approval of medical products in the Netherlands, indicates that in exceptional cases an expedited process is possible. [1] Additionally, medical countermeasures may receive conditional approval on the basis of limited trials. Furthermore, as an European Union (EU) member state, the Netherlands recognizes the approval of the European Medicines Agency (EMA). [1,2] Thus, if an

experimental emergency vaccine were authorized by the EMA, the CBG of the Netherlands would accept this decision.

[1] Medicines Evaluation Board. 2020. "Development and reviewing of medicines against corona". ("Ontwikkeling en beoordeling van medicijnen tegen corona"). [<https://www.cbg-meb.nl/onderwerpen/medicijninformatie-het-nieuwe-coronavirus/medicijnen-tegen-corona>]. Accessed 3 February 2021.

[2] European Medicines Agency. 2020. "COVID-19: how EMA fast-tracks development support and approval of medicines and vaccines". [<https://www.ema.europa.eu/en/news/covid-19-how-ema-fast-tracks-development-support-approval-medicines-vaccines>]. Accessed 3 February 2021.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 1

In the Netherlands, pandemics are integrated into the national risk reduction strategy. This risk reduction strategy is described in the document ‘National Security Strategy of the Netherlands 2019’, issued by the National Coordinator for Terrorism and Security (Nationale Coördinator voor Terrorismebestrijding en Veiligheid; NCTV), the crisis agency of the Ministry of Justice and Security [1]. The strategy specifically addresses zoonotic outbreaks and antimicrobial resistance (AMR), describing AMR as a major and growing concern, while assessing zoonoses as less pressing, as zoonotic risks have not changed significantly over the years. [1] Since 2018, the NCTV has also published an annual document looking at risk trends

in the preceding year. The 2020 edition addresses epidemics and pandemics, noting that the Netherlands continues to be exposed to new pathogens such as the SARS-CoV-2, and also referring to cases of tick-borne encephalitis and psittacose. [2]

[1] National Coordinator for Terrorism and Security. 2019. "National Security Strategy of the Netherlands 2019". ("Nationale Veiligheidsstrategie 2019"). [<https://www.rijksoverheid.nl/documenten/rapporten/2019/06/07/tk-bijlage-nationale-strategie-2019>]. Accessed 30 January 2021.

[2] National Coordinator for Terrorism and Security. 2020. "Horizon view national security 2020". ("Horizonscan nationale veiligheid 2020"). [<https://www.rivm.nl/sites/default/files/2020-11/Horizonscan%20Nationale%20Veiligheid%202020.pdf>]. Accessed 30 January 2021.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

The Netherlands has cross-border agreements and laws with neighbouring countries with regards to public health emergencies, and there is no evidence of gaps in implementation. As a member of the European Union, rapid response to serious cross-border threats to health is coordinated at EU level within the Health Security Committee (HSC). [1] The Early Warning and Response System (EWRS) is a rapid alert system for notifying at EU level on serious cross-border threats to health, as per Article 8 of Decision 1082/2013/EU. The HSC and the EWRS provide the platform and tool for the coordination of measures and response to serious cross-border threats to health. [1] It supports the exchange of information between them and coordinates in liaison with the Commission their preparedness, planning, risk and crisis communication and responses. The HSC is composed of representatives of EU countries. A letter to the Dutch parliament by the Ministry of Health, Welfare, and Sports confirms that Netherlands has a seat in the HSC, and regularly joins meetings to address cross-border agreements [2].

[1] European Commission. "Communicable diseases".

[https://ec.europa.eu/health/communicable_diseases/overview_en?2nd-language=mt]. Accessed 30 January 2021.

[2] Government of the Netherlands. 2018. "eport on the meeting of the Health Council Brussels 7 December 2018".

("Kamerbrief over Verslag forme EU-Gezondheidsraad Brussel 7 december 2018").

[<https://www.rijksoverheid.nl/documenten/kamerstukken/2019/01/08/kamerbrief-over-verslag-formele-eu-gezondheidsraad-brussel-7-december-2018>]. Accessed 30 January 2021.

5.2.1b

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

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

Current Year Score: 2

The Netherlands has cross-border agreements on animal health emergencies as part of a regional group, and there is no evidence of gaps in implementation. As a member of the European Union (EU), the Netherlands is entitled to request assistance from the EU's 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] At the time of writing, there has been one intervention in the Netherlands, in November 2008 for bluetongue. [3] Furthermore, there is evidence that Dutch citizens were part of the EU Veterinary Emergency Team in 2020 and, as such, no gaps in implementation. [4]

[1] European Commission. "Vetirinary Emergency Team". [https://ec.europa.eu/food/animals/animal-diseases/emergency-team_en]. Accessed 30 January 2021.

[2] European Commision. Decision No 2007/142/EC of 28 February 2007. "Establishing a Community Veterinary Emergency Team to assist the Commission in supporting Member States and third countries in veterinary matters relating to certain animal diseases". [<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32007D0142>]. Accessed 30 January 2021.

[3] European Commission. "EU Veterinary Emergency Team missions".

[https://ec.europa.eu/food/sites/food/files/animals/docs/ad_emergency_cvet_experts_missions.pdf]. Accessed 30 January 2021.

[4] European Commission. "EU Veterinary Emergency Team in 2020".

[https://ec.europa.eu/food/sites/food/files/animals/docs/ad_emergency_cvet_experts.pdf]. Accessed 26 February 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

Does the country 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: 1

There is evidence that the country has allocated national funds to improve capacity to address epidemic threats in the past three years. The Ministry of Health, Welfare, and Sports is expected to allocate a grant of EUR 10.7 million (USD 12.9 million) to disease prevention in 2021, and in 2019 it allocated EUR 26.3 million (USD 31.8 million). [3,4] However, additional funds were made available for the COVID-19 health crisis. [3] For vaccines alone, EUR 51.9 million (USD 62.7) will be allocated. [3] While the COVID-19 pandemic led to additional funds, there is insufficient evidence that these funds have gone towards systematically improving capacity to address epidemic threats.

[1] Ministry of Health, Welfare, and Sports. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 30 January 2021.

[2] Ministry of Agriculture. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-landbouw-natuur-en-voedselkwaliteit>]. Accessed 30 January 2021.

[3] Government of the Netherlands. 2020. "Budget Memorandum 2021". ("Miljoenennota 2021").

[<https://www.rijksoverheid.nl/onderwerpen/prinsjesdag/miljoenennota-en-andere-officiele-stukken>]. Accessed 27 February 2021.

[4] Government of the Netherlands. 2018. "Budget Memorandum 2019". ("Miljoenennota 2019").

[<https://www.rijksoverheid.nl/documenten/begrotingen/2018/09/18/xvi-volksgezondheid-welzijn-en-sport-rijksbegroting-2019>]. Accessed 27 February 2021.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly identified special emergency public financing system that the Netherlands can access in the face of a public health emergency. A COVID-19 emergency fund was established in 2020, but this is not applicable to other emergencies. [1] The National Plan on Pandemic Preparedness does not mention that there is a national funding mechanism. [2] No evidence for the existence of a pandemic fund in Europe could be found under the public health emergency preparedness section of the European Centre for Disease Prevention and Control (ECDC). [3] The Netherlands is not eligible to borrow funds from the World Bank pandemic financing facility. [4, 5] There is no information about the publication of a plan via the Ministry of Health, Welfare and Sport, Ministry of Defence or the National Crisis Centrum. [6,7,8]

[1] Government of the Netherlands. "Frequently asked questions on support measures and regulations". (Algemene vragen over het steunpakket en regelingen). [<https://www.rijksoverheid.nl/onderwerpen/coronavirus-financiële-regelingen/algemene-vragen-financiële-regelingen>]. Accessed 30 January 2021.

[2] National Consultation on Infectious Disease Control. 2014. "Generiek Plan Infectieziektenbestrijding (Generic Action Plan Infectious Disease Crisis)". [<https://lci.rivm.nl/draaiboeken/generiek-draaiboek>]. Accessed 30 January 2021.

[3] European Centre for Disease Prevention and Control (ECDC). "Public health emergency preparedness: core competencies of EU member states". [<https://ecdc.europa.eu/en/publications-data/public-health-emergency-preparedness-core-competencies-eu-member-states>]. Accessed 30 January 2021.

[4] World Bank Group. "Borrowing countries". [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 30 January 2021.

[5] World Bank Group. December 2017. "Pandemic Emergency Financing Facility (PEF) Operational Brief for Eligible Countries". [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>] Accessed 30 January 2021.

[6] Ministry of Health, Welfare and Sport. [<https://www.government.nl/ministries/ministry-of-health-welfare-and-sport>]. Accessed 30 January 2021.

[7] Ministry of Defence. [<https://english.defensie.nl/>]. Accessed 30 January 2021.

[8] National Crisis Centre. [<https://www.nctv.nl>]. Accessed 30 January 2021.

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

5.5.4a

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

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

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

Current Year Score: 0

There is insufficient evidence that, in the past three years, senior leaders in the Netherlands have made public commitments to support other countries to improve capacity to address epidemic threats by providing financing, or to improve domestic capacity to address epidemic threats. There is no such evidence on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Foreign Affairs, the World Health Organization or the United Nations, or in Dutch or international media. [1, 2, 3, 4]

[1] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 28 February 2021.

[2] Ministry of Foreign Affairs. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-buitenlandse-zaken>]. Accessed 28 February 2021.

[3] World Health Organisation. "Netherlands". [<https://www.who.int/countries/nld/>]. Accessed 28 February 2021.

[4] United Nations. [<https://www.un.org/>]. Accessed 28 February 2021.

5.5.4b

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

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

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

Current Year Score: 1

In the past three years, the Netherlands has invested finances to support other countries to improve capacity to address epidemic threats, but there is no evidence that it has requested financing or technical support to improve its own domestic capacity. The Global Health Security Tracker shows that the Netherlands has committed to supporting low and middle income countries in improving capacity to address epidemic threats. [1] Between 2016 and 2020 the Netherlands disbursed US\$ 213.21 million to the Gavi Vaccine Alliance. [1,2] It is expected that the Netherlands will continue to support this cause in the future. [2] There is no evidence of the Netherlands requesting financing or technical support to improve its own capacity to address epidemic threats on the websites of the Ministry of Health, Welfare and Sport, the Ministry of Foreign Affairs, the World Health Organization or the United Nations. [3,4,5,6]

- [1] Global Health Security Tracker. 2020. "Funder profile: The Netherlands".
[<https://tracking.ghscosting.org/details/868/funder>]. Accessed 27 January 2021.
- [2] Gavi, the Vaccine Alliance. "The Netherlands". [<https://www.gavi.org/investing-gavi/funding/donor-profiles/netherlands>]. Accessed 1 May 2021.
- [3] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 28 February 2021.
- [4] Ministry of Foreign Affairs. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-buitenlandse-zaken>]. Accessed 28 February 2021.
- [5] World Health Organisation. "Netherlands". [<https://www.who.int/countries/nld/>]. Accessed 28 February 2021.
- [6] United Nations. [<https://www.un.org/>]. Accessed 28 February 2021.

5.5.4c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a publicly available plan or policy for sharing genetic data, clinical specimens, or isolated specimens along with the associated epidemiological data with international organizations, or other countries, that goes beyond influenza. Surveillance of infectious disease in the Netherlands is performed by the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu; RIVM), an institute reporting to various Dutch Ministries, including the Ministry of Health, Welfare and Sports. [1] The RIVM shares epidemiological data with other European countries, as well as international organizations, via such networks as the Hepatitis A Virus Network (HAVNET), the Norovirus Network (NoroNet), and the Infectious Disease Surveillance and Information System for Antibiotic Resistance (ISIS-AR). [2, 3, 4] However, there is no evidence that Dutch participation in any of these networks is based on any kind of publicly available plan or policy document. There is no further relevant evidence on the websites of the Ministry of Health, Welfare, and Sport, or the RIVM. [5, 6]

- [1] Government of the Netherlands. "Rijksinstituut voor Volksgezondheid en Milieu RIVM".
[<https://www.rijksoverheid.nl/contact/contactgids/rijksinstituut-voor-volksgezondheid-en-milieu-rivm>]. Accessed 27 January 2021.
- [2] National Institute for Public Health and the Environment. 2019. "Hepatitis A Virus Network (HAVNET)". [<https://www.rivm.nl/en/Topics/H/HAVNET>]. Accessed 27 January 2021.
- [3] National Institute for Public Health and the Environment. 2019. "Norovirus Network (NoroNet)".
[<https://www.rivm.nl/en/Topics/N/NoroNet>]. Accessed 27 January 2021.
- [4] National Institute for Public Health and the Environment. 2019. "AMR surveillance infrastructure".
[<https://www.rivm.nl/en/who-collaborating-centre-antimicrobial-resistance-epidemiology-and-surveillance/fields-of-expertise/amr-surveillance-infrastructure>]. Accessed 27 January 2021.
- [5] Ministry of Health, Welfare, and Sport. "Home". [<https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport>]. Accessed 28 February 2021.
- [6] National Institute for Public Health and the Environment. "Home". [www.rivm.nl]. Accessed 28 February 2021.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that the Netherlands has not shared samples in accordance with the PIP framework in the past two years. The Netherlands reported and shared samples of a highly pathogenic avian influenza to the World Organisation for Animal Health in December 2020 [1]. There are no reports of non-compliance on the website of the World Health Organization or in the media.

- [1] World Organisation for Animal Health. December 2020. "Highly Pathogenic Avian Influenza (HPAI) Report N° 19: December 4 to December 24, 2020".
[https://www.oie.int/fileadmin/Home/eng/Animal_Health_in_the_World/docs/pdf/OIE_AI_situation_report/HPAI_asof24122020.pdf]. Accessed 27 January 2021.
- [2] World Health Organization. [<https://www.who.int>]. Accessed 27 January 2021.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that the Netherlands has failed to share pandemic pathogen samples during an outbreak in the past two years. There is no evidence of the Netherlands failing to share pathogen samples, including COVID-19 samples, on the World Health Organization's website or in Dutch or international media. [1]

- [1] World Health Organization. [<https://www.who.int>]. Accessed 27 January 2021.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 82

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 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: 4

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 2

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 1

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: 4

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; incisional 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: 3

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 99.9

2008-2018

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.96

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: 0.1

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 less than 25% of the Netherlands' employment is in the informal sector. In 2013, about 10% of the Dutch population was employed in the informal sector. [1] In 2019, some 400,000 inhabitants of the Netherlands did not enclose employment information to the government. It is expected that these people are employed through the shadow economy. [2] The statistical databases maintained by the World Bank and the International Labor Organisation do not provide statistics on informal employment in the Netherlands. [3,4]

[1] Nu.nl. 22 April 2013. "Number of undeclared workers unchanged at 10 percent". ("Aantal zwartwerkenden onveranderd op 10 procent"). [<https://www.nu.nl/voorpagina/3403723/aantal-zwartwerkenden-onveranderd-10-procent.html>]. Accessed 24 January 2021.

[2] NOS. 27 September 2019. "Hundreds of thousands Dutch people participate in undeclared work, most are cleaners". ("Honderdduizenden Nederlanders werken zwart, schoonmakers koploper"). [<https://nos.nl/op3/artikel/2303517-honderdduizenden-nederlanders-werken-zwart-schoonmakers-koploper.html>]. Accessed 24 January 2021.

[3] World Bank. "Informal Employment (% of total non-agricultural employment) Netherlands". [<https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=NL&view=chart>]. Accessed 24 January 2021.

[4] International Labor Organisation. "Country Profiles - Netherlands". []<https://ilo.org/data/country-profiles/>. Accessed 24 January 2021.

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: 0.28

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 4

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 91.88

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: -0.06

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: 81.81

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: 319.9

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 19.61

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 23.4

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 20.4

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: 97.71

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: 3657.73

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