

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

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

1.1 ANTIMICROBIAL RESISTANCE (AMR)

1.1.1 AMR surveillance, detection, and reporting

1.1.1a

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

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

Current Year Score: 0

There is currently no national antimicrobial resistance (AMR) plan for the surveillance, detection, and reporting of priority AMR pathogens in Ukraine. In March 2019, the Cabinet of Ministers of Ukraine approved a "National Antimicrobial Resistance Action Plan." The Plan tasks various government bodies, including the Ministry of Healthcare, the Ministry of Economic Development, Trade and Agriculture and the National Academy of Science, with developing sector-specific antimicrobial resistance plans by the end of 2020. These include plans to strengthen pharmacies' compliance with prescription requirements, control the use of antibiotics in veterinary medicine, strengthen measures to prevent healthcare-associated infections (HCAIs), and improve AMR surveillance and reporting [1]. Moreover, there is evidence that individual aspects of this action plan have since been adopted. For example, in February 2020, the Ministry of Healthcare published a decree titled "On the Introduction of Measures to Prevent Infections in Institutions of Healthcare." The decree discusses the detection, surveillance, and reporting of AMR pathogens in healthcare settings [2]. In addition, the Ministry of Economic Development, Trade, and Agriculture published a decree "On the Use of Antimicrobial Drugs in Veterinary Medicine" that addresses AMR but does not describe surveillance, detection, or reporting in detail [3]. However, there is no evidence of an overarching plan for the surveillance, detection, and reporting of priority AMR pathogens. A draft version of a national AMR strategy had been posted online in March 2018, but there is no indication on the website of the Ministry of Healthcare that this document was ever finalized or adopted [4, 5]. In addition, the World Health Organization's (WHO) Library of National AMR Action Plans contains no entry for Ukraine [6].

[1] Cabinet of Ministers of Ukraine. 2019. "On the Confirmation of the National Antimicrobial Resistance Action Plan (Про затвердження Національного плану дій щодо боротьби із стійкістю до протимікробних препаратів)".

[<https://zakon.rada.gov.ua/laws/show/116-2019-%D1%80#Text>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2020. "On the Introduction of Measures to Prevent Infections in Institutions of Healthcare (Інструкція з впровадження профілактики інфекцій та інфекційного контролю в закладах охорони здоров'я)".

[https://moz.gov.ua/uploads/3/18795-pro_20200212_1_dod_4.pdf]. Accessed 4 February 2021.

[3] Ministry of Economic Development, Trade and Agriculture of Ukraine. 2020. "On the Use of Antimicrobial Drugs in Veterinary Medicine (ПОРЯДОК використання протимікробних препаратів у ветеринарній медицині)".

[<https://agro.me.gov.ua/storage/app/uploads/public/5e8/316/c7b/5e8316c7b4c7e761723721.docx>]. Accessed 4 February 2021.

[4] Apteka.ua. 2018. "Draft Resolution of the CMU 'On the approval of the State Strategy for the Implementation of the State Policy to Combat the Development of Anti-microbial Resistance 2018-2022' (Проект розпорядження КМУ 'Про схвалення Державної стратегії щодо реалізації державної політики зі стримування розвитку стійкості до протимікробних препаратів 2018 – 2022 роки')". [<https://www.apteka.ua/article/449373>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[6] World Health Organization (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 4 February 2021.

1.1.1b

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

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

Current Year Score: 1

Ukraine has a laboratory system which tests for antimicrobial resistance (AMR) pathogens, but not all 7+1 priority pathogens.

Ukraine participates in the Central Asian and European Surveillance of Antimicrobial Resistance network (CAESAR). The 2020 CAESAR annual report states that Ukraine's surveillance network comprises seven laboratories across four regions in Ukraine. During the 2020 reporting period (covering calendar year 2019), Ukraine submitted AMR data on *E. coli*, *K. pneumoniae*, *S. aureus*, *S. pneumoniae*, and several other non-priority pathogens. However, the report also states that these data "should be interpreted with caution and are not necessarily generalizable" due to the small number of isolates available for analysis [1].

In addition, in December 2020 the Ministry of Healthcare of Ukraine issued a decree reinforcing the objectives and procedures involved in disease surveillance. It also provided a list of pathogens which are subject to surveillance; while this list includes all of the priority pathogens, there is no mention in the decree of AMR surveillance [2]. No further information regarding a national AMR surveillance system could be found on the website of the Ministry of Healthcare [3].

Furthermore, there is no relevant information in the World Health Organization's (WHO) Library of National AMR Action Plans [4].

[1] World Health Organization (WHO). 2019. "Central Asian and European Surveillance of Antimicrobial Resistance: Annual report 2020". [https://www.euro.who.int/__data/assets/pdf_file/0003/469200/Central-Asian-and-European-Surveillance-of-Antimicrobial-Resistance.-Annual-report-2020-eng.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2020. "On the Conduct of Reporting, Accounting, and Epidemiological Surveillance of Infectious Diseases and the List of Infectious Diseases that are Subject to Registration (Про затвердження Порядку ведення обліку, звітності та епідеміологічного нагляду (спостереження) за інфекційними хворобами та Переліку інфекційних хвороб, що підлягають реєстрації)". [http://search.ligazakon.ua/l_doc2.nsf/link1/RE35615.html]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] World Health Organization (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 4 February 2021.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the government conducts environmental detection or surveillance activities for antimicrobial residues (AMRs) or AMR organisms. There is no mention of any such activities on the the websites of the Ministry of Ecology and Natural Resources and the Ministry of Healthcare [1, 2]. In addition, the Water Code of Ukraine (adopted in 1995 and last updated in October 2020), the decree "On the Establishment of Procedures for State Water Surveillance" (adopted in 2018,

updated September 2020), and the decree "On Land Monitoring" (adopted in 1993, updated September 2020) make no mention of AMR surveillance in the country's waterways or soil [3, 4, 5]. Furthermore, no evidence of an antimicrobial resistance (AMR) action plan could be found in the World Health Organization's (WHO) library of national action plans [6].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[2] Ministry of Ecology and Natural Resources of Ukraine. [<https://mepr.gov.ua/en/>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of Procedures for State Water Surveillance (ПОРЯДОК здійснення державного моніторингу вод)". [<https://zakon.rada.gov.ua/laws/show/758-2018-%D0%BF#n11>]. Accessed 4 February 2021.

[4] Verkhovna Rada. 2020. "Water Code of Ukraine (Водний кодекс України)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[5] Cabinet of Ministers of Ukraine. 2020. "On Land Monitoring (Про затвердження Положення про моніторинг земель)". [<https://zakon.rada.gov.ua/laws/show/661-93-%D0%BF#Text>]. Accessed 4 February 2021.

[6] World Health Organization (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 4 February 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 0

There is no evidence of national legislation or regulations requiring prescriptions for antibiotic use in humans in Ukraine.

The Ministry of Healthcare in Ukraine maintains a list of medicines, last updated in 2019, that can be sold without a prescription in Ukrainian pharmacies. However, neither this list, nor the law "On Medical Goods" (adopted in 1996 and last modified in 2020) explicitly require that antibiotics be sold with a prescription [1, 2].

Moreover, antibiotics can readily be purchased on Ukrainian websites. For example, the website Aptekar sells a wide variety of antibiotics such as ciprolet and ciprofloxacin [3].

In 2020, the Minister of Healthcare Maksym Stepanov stated that antibiotics would be made available by prescription only within the next few years [4]. However, there is no information on the website of the Ministry of Healthcare indicating any existing requirements in this regard [5].

Furthermore, no evidence of an antimicrobial resistance (AMR) action plan could be found in the World Health Organization's (WHO) library of national action plans [6].

[1] Verkhovna Rada. 1996. "On Medical Goods (Про лікарські засоби)". [<https://zakon.rada.gov.ua/laws/show/123/96-vr#Text>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2019. "On the Confirmation of the List of Medicines Which are Permitted in Ukraine and Which May be Sold Without a Prescription from a Pharmacy or its Structural Units (Про затвердження Переліку лікарських засобів, дозволених до застосування в Україні, які відпускаються без рецептів з аптек та їх структурних підрозділів)". [<https://zakon.rada.gov.ua/laws/show/z0509-19#n14>]. Accessed 4 February 2021.

[3] Aptekar online pharmacy. "What Are Antibiotics? (Что это такое – антибиотики?)". [<https://aptekar.ua/antibiotiki/>].

Accessed 4 February 2021.

[4] Hromadske. 2020. "Stepanov: Antibiotics Will Be Available By Prescription only in Ukraine (В Україні планують продавати антибіотики тільки по рецепту — Степанов)". [<https://hromadske.ua/ru/posts/v-ukraine-planiruyut-prodavati-antibiotiki-tolko-po-receptu-stepanov>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[6] World Health Organization (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 4 February 2021.

1.1.2b

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

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

Current Year Score: 0

There is no evidence of national legislation or regulations requiring prescriptions for antibiotic use in animals in Ukraine.

The Department of Veterinary Medicine (under the Ministry of Agrarian Policy and Food) maintains a list of medicines, adopted and last updated in 2008, that must be sold with a prescription in Ukraine. However, neither this list, nor the law "On Veterinary Medicine" (adopted in 1992 and last modified in 2020) explicitly require that antibiotics be sold with a prescription [1, 2].

Moreover, veterinary antibiotics can readily be purchased on Ukrainian websites. For example, the website VetMarket sells a wide variety of antibiotics for livestock and household pets [3].

In 2020, the Minister of Healthcare Maksym Stepanov stated that antibiotics would be made available by prescription only within the next few years; however, he did not specify whether this would also apply to veterinary antibiotics [4]. There is no further information on the websites of the Ministry of Agrarian Policy and Food or of the Ministry of Healthcare indicating any existing requirements [5, 6].

Furthermore, no evidence of an antimicrobial resistance (AMR) action plan could be found in the WHO library of national action plans [7].

[1] State Committee on Veterinary Medicine of Ukraine. 2008. "On the Confirmation of the List of Veterinary Medicines Which Can be Sold Without a Prescription (Про затвердження переліку ветеринарних препаратів, реалізація та використання яких потребує рецепта)". [<https://zakon.rada.gov.ua/rada/show/v0182668-08#Text>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)". [<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[3] Vetmarket. "Antimicrobial and Antibacterial Medicines (Антимікробні і антибактеріальні препарати)". [https://vetmarket.biz.ua/catalog/antibakterialnye_preparaty]. Accessed 4 February 2021.

[4] Hromadske. 2020. "Stepanov: Antibiotics Will Be Available by Prescription Only in Ukraine (В Україні планують продавати антибіотики тільки по рецепту — Степанов)". [<https://hromadske.ua/ru/posts/v-ukraine-planiruyut-prodavati-antibiotiki-tolko-po-receptu-stepanov>]. Accessed 4 February 2020.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[6] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[7] World Health Organization (WHO). "Library of National Action Plans". [<http://www.who.int/antimicrobial-resistance/national-action-plans/library/en/>]. Accessed 4 February 2021.

resistance/national-action-plans/library/en/]. Accessed 4 February 2021.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1, No = 0

Current Year Score: 1

There are laws and plans that address zoonotic diseases.

One example is the Integrated Program of Basic Measures to Combat Rabies in Ukraine 2000-2010, which was jointly adopted by the Ministry of Agrarian Policy, the State Department of Veterinary Medicine, and the Ministry of Healthcare [1, 2]. This plan discusses rabies in terms of its threat to human health and its impact on the country's healthcare system overall [2].

Other examples are the 2005 "Law on the Strengthening of Measures for the Diagnosis and Prevention of Ixodic Tick Borreliosis in Ukraine" and a set of regulations issued by the State Department of Veterinary Medicine in 2000, intended to combat anthrax [3, 4]. These documents discuss how borreliosis and anthrax, respectively, must be diagnosed and provide guidelines for controlling outbreaks [3, 4].

The prevention of zoonotic diseases is listed as a priority in the law "On Veterinary Medicine" (adopted in 1992 and last modified in 2020), but a detailed strategy to combat their spread is not laid out in this document [5]. According to a 2007 decree of the Cabinet of Ministers of Ukraine, the Department of Veterinary Medicine under the Ministry of Agrarian Policy and Food is responsible for the coordination of efforts to prevent the spread of zoonotic diseases [6].

However, there is no evidence on the websites of the Ministry of Agrarian and Food Policy or Ministry of Health of a single, overarching strategy document on zoonotic disease [7, 8]. There is also no information about an overarching plan on the website of the State Department of Veterinary Medicine [9].

[1] Vitaly Nedosiekov. 2008. "Scientific and Methodological Support for Measures to Combat Rabies (Науково-методичне забезпечення заходів боротьби зі сказом)". [<http://a7d.com.ua/tvarinnictvo/1077-naukovo-metodichne-zabezpechennja-zakhodiv.html>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine, State Department of Veterinary Medicine, and Ministry of Healthcare of Ukraine. 2000. "On Approval of the Integrated Program of the Main Measures for the Prevention and Combating of Rabies in Ukraine for 2000-2010 (Про затвердження Комплексної програми основних заходів профілактики та боротьби зі сказом в Україні на 2000-2010 роки)". IAS Konsultant. [<http://consultant.parus.ua/?doc=00P2HB0335>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2005. "On the Strengthening of Measures for the Diagnosis and Prevention of Ixodic Tick Borelliosis in Ukraine (Про посилення заходів з діагностики та профілактики іксодових кліщових бореліозів в Україні. Нормативно-директивні документи)". [<http://mozdocs.kiev.ua/view.php?id=4052>]. Accessed 4 February 2021.

[4] State Department of Veterinary Medicine. 2000. "Instructions on Measures for the Prevention and Control of Anthrax (Інструкція про заходи з профілактики та боротьби з сибіркою тварин)". [<http://zakon.rada.gov.ua/laws/show/z0136-00>]. Accessed 4 February 2021.

[5] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)".

[<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[6] Cabinet of Ministers of Ukraine. 2007. "On the State Committee for Veterinary Medicine of Ukraine (Положення про Державний комітет ветеринарної медицини України)". [<https://www.kmu.gov.ua/npas/90920674>]. Accessed 4 February 2021.

[7] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[8] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[9] State Department of Veterinary Medicine of Ukraine. [<http://vet.org.ua/>]. Accessed 11 February 2021.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of national legislation or strategy documents that include measures for risk identification and reduction for zoonotic spillover events in Ukraine.

No evidence could be found on the websites of the Ministry of Agrarian Policy and Food or the Ministry of Healthcare of an overarching spillover risk strategy for multiple zoonotic diseases [1, 2].

A national rabies prevention strategy document for the years 2000-2010 identifies risk factors for the transmission of rabies from animals to humans and proposes a number of measures to address them, including ongoing surveillance of workers in the field of animal husbandry "and other professions that involve contact with rabies-infected animals," as well as stricter rules and information campaigns to promote responsible animal ownership [3]. However, this document does not explicitly mention disease spillover [3].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[2] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine, State Department of Veterinary Medicine, and Ministry of Healthcare of Ukraine. 2000. "On Approval of the Integrated Program of the Main Measures for the Prevention and Combating of Rabies in Ukraine for 2000-2010 (Про затвердження Комплексної програми основних заходів профілактики та боротьби зі сказом в Україні на 2000-2010 роки)". IAS Konsultant. [<http://consultant.parus.ua/?doc=00P2HB0335>]. Accessed 4 February 2021.

1.2.1c

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of state surveillance and control of at least ten zoonotic diseases: Ixodic tick borreliosis, anthrax, tularemia, mycobacterium tuberculosis, foot and mouth disease, West Nile Fever, trichinellosis, rabies, Japanese encephalitis, and brucellosis.

The 2005 "Law on the Strengthening of Measures for the Diagnosis and Prevention of Ixodic Tick Borelliosis" in Ukraine includes various measures to diagnose and prevent Ixodic tick borreliosis, including detailed guidelines on conducting testing,

preventing tick bites, performing emergency prophylaxis on persons bitten by ticks, and treating infected persons [1].

The control and surveillance of brucellosis are addressed in a set of recommendations from 2000, "On the Prevention and Control of Brucellosis." This document states that the State Sanitary and Epidemiological Service of Ukraine (under the Ministry of Healthcare) is responsible for coordinating measures to control the spread of brucellosis and for ensuring that livestock owners carry out yearly screenings of cattle and pigs for the disease; the law also states that wild animals, including moose, boars, and deer, are also to be screened for brucellosis, but does not explicitly charge the State Sanitary and Epidemiological Service with this task [2].

According to the 2000 "Instructions on the Prevention and Control of Anthrax in Animals," the State Chief Inspectors for Veterinary Medicine at the local and regional levels are responsible for introducing measures to control and conduct surveillance of anthrax, including yearly vaccinations of all animals in locations "which are susceptible to anthrax" and quarantine measures [3].

The State Service for Food Safety and Consumer Protection of Ukraine monitors livestock for diseases, including diseases that could also infect humans; it regularly publishes reports indicating the most recent date of occurrence of each disease [3]. Zoonoses covered in the most recent report from June 2020 include anthrax, mycobacterium tuberculosis, foot and mouth disease, tularemia, West Nile Fever, trichinellosis, rabies, Japanese encephalitis, and brucellosis [3]. According to the June 2020 report, which uses the World Organization for Animal Health's (OIE) disease occurrence codes, measures applied to monitor these diseases include "General surveillance," "Movement control inside the country," "Targeted surveillance," and "Precautions at the borders" [4, 5]. Additional measures for rabies include "Zoning," "Control of wildlife reservoirs," "Stamping out," and "Screening" are conducted nationwide [4]. Moreover, the State Service for Food Safety and Consumer Protection of Ukraine also conducts mandatory immunization of livestock for rabies [6].

[1] Ministry of Healthcare of Ukraine. 2005. "On the Strengthening of Measures for the Diagnosis and Prevention of Ixodic Tick Borelliosis in Ukraine (Про посилення заходів з діагностики та профілактики іксодових кліщових бореліозів в Україні. Нормативно-директивні документи)". [<http://mozdocs.kiev.ua/view.php?id=4052>]. Accessed 4 February 2021.

[2] State Department of Veterinary Medicine of Ukraine. 2000. "Instructions on Measures for the Prevention and Control of Infectious Animal Diseases: Brucellosis, Anthrax, Teschen Disease, and Horse Anemia (Про затвердження інструкцій про заходи з профілактики та боротьби з інфекційними хворобами тварин: бруцельозом, сибіркою, хворобою Тешена свиней та анемією коней)". [<https://zakon.rada.gov.ua/laws/show/z0135-00#Text>]. Accessed 4 February 2021.

[3] State Department of Veterinary Medicine of Ukraine. 2000. "Instructions on Measures for the Prevention and Control of Anthrax (Інструкція про заходи з профілактики та боротьби з сибіркою тварин)". [<http://zakon.rada.gov.ua/laws/show/z0136-00>]. Accessed 4 February 2021.

[4] State Service of Ukraine for Food Safety and Consumer Protection. "Epizootic Situation on the Territory of Ukraine (Епізоотична ситуація на території України)". [<https://dpss.gov.ua/bezpechnist-harchovih-produktiv-ta-veterinarna-medicina/epizootichna-situaciya/epizootichna-situaciya>]. Accessed 4 February 2021.

[5] OIE: World Organization for Animal Health (OIE). "Help". [https://www.oie.int/wahis_2/wah/help.php]. Accessed 11 February 2021.

[6] Cabinet of Ministers of Ukraine. 2019. "The Autumn Campaign of Aircraft-assisted Rabies Immunization of Wild Carnivores Has Begun in Ukraine (В Україні розпочалася осіння кампанія з імунізації диких м'ясоїдних тварин проти сказу за допомогою авіатранспорту)". [<https://www.kmu.gov.ua/news/v-ukrayini-rozpochalasya-osinnya-kampaniya-z-imunizaciyi-dikih-myasoyidnih-tvarin-proti-skazu-za-dopomogoyu-aviatransportu>]. Accessed 11 February 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of an inter-ministerial department, agency, or similar unit dedicated to zoonotic diseases in Ukraine.

Different aspects of work related to zoonotic diseases fall under the purview of several different state bodies. The Ministry of Healthcare is responsible for addressing zoonotic diseases among humans and has taken actions such as issuing guidelines in 2005 on how to reduce infection with tick-borne diseases [1, 2]. The Department of Food Safety and Veterinary Medicine within the State Service for Food Safety and Consumer Protection concerns itself with zoonotic diseases that might be transmitted to humans through food products and assesses the overall situation with epizootic diseases in the country [3]. The State Service for Food Safety and Consumer Protection works in close cooperation with the Ministry of Agrarian Policy and Food, which is responsible for forming and implementing state policy in the fields of agriculture, fishing and food production [5]. The Ministry of Ecology and Natural Resources is responsible for monitoring and protecting the health of wild fauna, but neither the Ministry's website, nor its founding document (updated June 2020) includes any explicit mention of zoonotic diseases [6, 7].

In addition, the Law On Veterinary Medicine (adopted 1992, last updated in October 2020) mentions a State Department of Veterinary Medicine that is responsible for coordinating state policy in the area of veterinary medicine [8]. A decree outlining the responsibilities of this department, adopted in 2007 and expired in 2012, mentions that it was housed under the Ministry of Agrarian and Food Policy and responsible for "coordinating the work of government agencies of veterinary medicine [...] to protect human lives and health from the risks presented by animal-borne illnesses, including zoonotic diseases" [9]. However, it is unclear whether this responsibility was delegated to another entity following the decree's expiration in 2012; moreover, the website of the State Department for Veterinary Medicine does not contain any information about its structure or mandate [9, 10].

Finally, there is a State Emergency Anti-Epizootic Disease Committee within the Cabinet of Ministers of Ukraine whose mandate is to prevent the spread of epizootic diseases on the territory of the country and collaborate with the State Service for Food Safety and Consumer Protection to protect the population from zoonotic diseases; it is unclear whether this Committee's mandate overlaps with or supersedes that of the State Department of Veterinary Medicine [11].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2005. "On the Strengthening of Measures for the Diagnosis and Prevention of Ixodic Ticks Borelliosis in Ukraine. (Про посилення заходів з діагностики та профілактики іксодових кліщових бореліозів в Україні Нормативно-директивні документи)". [<http://mozdocs.kiev.ua/view.php?id=4052>]. Accessed 4 February 2021.

[3] State Service of Ukraine for Food Safety and Consumer Protection. 2020. "About the Department (Про Департамент)". [<https://dpss.gov.ua/bezpechnist-harchovih-produktiv-ta-veterinarna-medicina/pro-department>]. Accessed 25 January 2021.

[5] Ministry of Agrarian Policy and Food. "Mission and Strategy (Місія та стратегія)". [<https://agro.me.gov.ua/ua/pro-nas/misiya-ta-strategiya>]. Accessed 25 January 2021.

[6] Ministry of Ecology and Natural Resources of Ukraine. 2020. "Mission and Strategy (Місія та стратегія)". [<https://menr.gov.ua/content/misiya-ta-strategiya.html>]. Accessed 4 February 2021.

[7] Cabinet of Ministers of Ukraine. 2020. "Questions on the Ministry of Ecology and Natural Resources (Деякі питання Міністерства захисту довкілля та природних ресурсів)". [<https://zakon.rada.gov.ua/laws/show/614-2020-n#Text>]. Accessed 4 February 2021.

[8] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)". [<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[9] Cabinet of Ministers of Ukraine. 2012. "Concerning the State Department for Veterinary Medicine (Питання Державного

департаменту ветеринарної медицини)". [<https://zakon.rada.gov.ua/laws/show/1075-2007-п#Text>]. Accessed 11 February 2021.

[10] State Department for Veterinary Medicine of Ukraine. [<http://vet.org.ua>]. Accessed 4 February 2021.

[11] Cabinet of Ministers of Ukraine. "On the State Emergency Anti-Epizootic Disease Committee within the Cabinet of Ministers of Ukraine (Про затвердження Положення про Державну надзвичайну протиепізоотичну комісію при Кабінеті Міністрів України та типових положень про місцеві державні надзвичайні протиепізоотичні комісії)". [<https://zakon.rada.gov.ua/laws/show/1350-2007-п#Text>]. Accessed 4 February 2021.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Ukraine has a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency. Article 42(1) of the Law On Veterinary Medicine (adopted 1992, last updated in October 2020) establishes that "animal owners [...] must immediately inform the respective [local] Chief State Veterinary Inspector of the onset or suspected onset of a disease that requires reporting" [1]. The local Chief State Veterinary Inspector is in turn required to inform the territorial Chief Veterinary Inspector, who must then inform the national Chief State Veterinary Inspector if the disease is listed by the World Organization for Animal Health (OIE) [1]. However, the Law On Veterinary Medicine also charges the Cabinet of Ministers of Ukraine with maintaining a separate list of particularly infectious diseases, introduced in 2007 and not amended since, which includes diseases such as swine fever, Newcastle disease, anthrax, and foot-and-mouth disease [1, 2]. No evidence of a specific reporting mechanism or portal could be found on the websites of the Ministry of Health or the Ministry of Agrarian Policy and Food [3, 4].

[1] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)". [<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2007. "On the List of Particularly Infectious (Quarantinable) Veterinary Diseases (Про затвердження переліку особливо небезпечних (карантинних) хвороб тварин)". [<https://zakon.rada.gov.ua/laws/show/1006-2007-п#Text>]. 4 February 2021.

[3] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

No evidence could be found of laws or guidelines that safeguard the confidentiality of information generated through surveillance activities for animals in Ukraine.

The Law On Veterinary Medicine (adopted 1992, last updated in October 2020) establishes that "animal owners [. . .] must

immediately inform the respective [local] Chief State Veterinary Inspector of the onset or suspected onset of a disease that requires reporting." This information is then escalated to state-level authorities, depending on the severity of the disease [1]. However, this law does not contain any information about how data about the owner are handled or whether they are de-identified [1].

The Law On the Protection of Personal Data" (adopted 2010, last updated in March 2020)encompasses general aspects of data protection and confidentiality but does not mention data generated through surveillance activities for animals [2].

No further evidence could be found on the websites of the Ministry of Agrarian Policy and Food or the Ministry of Health [3, 4].

[1] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)".

[<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 2010. "On the Protection of Personal Data (Про захист персональних даних)".

[<https://zakon.rada.gov.ua/laws/show/2297-17#Text>]. Accessed 4 February 2021.

[3] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence of surveillance for zoonotic disease in wildlife being conducted in Ukraine.

In accordance with the 2005 decree "On the Strengthening of Measures to Diagnose and Prevent Ixodic Tick-Borne Borreliosis in Ukraine," the State Sanitary and Epidemiological Service (under the Ministry of Healthcare) is responsible for conducting surveillance of the tick population in the country [1]. There are reports of this surveillance being conducted as recently as 2020; however, the method of surveillance is unknown [1, 2].

A January 2021 paper describes the results of a state-supported mosquito surveillance program in Kyiv, the country's capital, that ran from 2013-2017 and sampled mosquitos in nine locations across the city; it is unclear whether this surveillance is ongoing [3].

In addition, the 2000-2010 program to combat rabies mentions surveillance and testing activity. The document does not explicitly state which species must be tested, or how, but foxes receive considerable attention throughout the document and mention is also made of wolves, raccoon dogs, bats, and mice [4]. There is no evidence on the websites of the Ministry of Agrarian Policy and Food or Ministry of Health that this plan was replaced with a new one after 2010 [5, 6].

According to a journal article from 2014, Ukraine "has a national policy for passive surveillance for livestock anthrax [...] However, there is no anthrax wildlife surveillance." [7].

[1] Ministry of Healthcare of Ukraine. 2005. "On the strengthening of measures for the diagnosis and prevention of ixodic tick boreliosis in Ukraine." ("Про посилення заходів з діагностики та профілактики іксодових кліщових бореліозів в Україні.") Нормативно-директивні документи. [<http://mozdocs.kiev.ua/view.php?id=4052>]. Accessed 4 February 2021.

[2] 1zt.ua. 2020. "Ticks are swarming in Zhytomyr - a laboratory center asks residents to bring them in for testing" ("У

Житомирі бушують кліщі - лабораторний центр закликає привозити їх на дослідження").

[https://www.1.zt.ua/news/misto/u-zhitomiri-bushuyut-klischi-laboratorniy-tsentr-zaklikaye-privoziti-yih-na-doslidzhennya.html]. Accessed 11 February 2021.

[3] Tata Romanenko et al. 2021. "Surveillance of Mosquitoes (Diptera, Culicidae) in Kyiv, Ukraine Between 2013 and 2017". Vector-Borne and Zoonotic Diseases. [https://www.liebertpub.com/doi/10.1089/vbz.2020.2666].

[4] Ministry of Healthcare of Ukraine, State Department of Veterinary Medicine and Ministry of Healthcare of Ukraine. 2000. "On approval of the Integrated Program of the Main Measures for the Prevention and Combating of Rabies in Ukraine for 2000-2010." ("Про затвердження Комплексної програми основних заходів профілактики та боротьби зі сказом в Україні на 2000-2010 роки.") IAS Konsultant. [http://consultant.parus.ua/?doc=00P2HB0335]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [http://moz.gov.ua]. Accessed 4 February 2021.

[6] Ministry of Agrarian Policy and Food of Ukraine. [https://agro.me.gov.ua/]. Accessed 4 February 2021.

[7] Karoun Bagamian et al. 2014. "Serological Anthrax Surveillance in Wild Boar (Sus scrofa) in Ukraine". Vector-Borne and Zoonotic Diseases.

[https://www.researchgate.net/publication/264392516_Serological_Anthrax_Surveillance_in_Wild_Boar_Sus_scrofa_in_Ukraine]. Accessed 4 February 2021.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1, No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 29.72

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 7.57

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

There is no evidence of a mechanism or protocol for working with the private sector in controlling or responding to zoonoses in Ukraine.

No mention is made of such a mechanism or protocol on the websites of the Ministry of Ecology and Natural Resources, the Ministry of Agrarian Policy and Food, the Ministry of Healthcare, or the State Service for Food Safety and Consumer Protection [1, 2, 3, 4].

[1] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[2] Ministry of Ecology and Natural Resources of Ukraine. [<https://mepr.gov.ua/en/>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Service for Food Safety and Consumer Protection of Ukraine. [<http://dpss.gov.ua/>]. Accessed 4 February 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Ukraine has in place a record, updated within the past five years, of the facilities in which especially dangerous pathogens and toxins are stored or processed, including details on those facilities' inventories.

Ukraine's 2020 Confidence Building Measure Report, submitted to the United Nations (UN) as part of its commitments under the Biological Weapons Convention (BWC), includes a record of which facilities work with especially dangerous pathogens and toxins, naming 37 facilities spread across 9 institutions, and also lists which pathogens and toxins are stored at each [1].

Furthermore, in line with the 1999 regulations "On the Handling of Pathogenic Microorganisms," the Central Regime Commission of the Ministry of Healthcare issues licences permitting laboratories to work with dangerous pathogens and maintains a database of those institutions to which licences have been granted [2, 3]. In addition to the Central Regime Commission, there are Regime Commissions at the regional (oblast), city, and district levels, each of which are required to

submit yearly reports to the central commission [3].

[1] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[2] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 1999. "On the Handling of Pathogenic Microorganisms (Про режим роботи з патогенними мікроорганізмами)". [<https://zakon.rada.gov.ua/rada/show/v0183282-92#Text>]. Accessed 4 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: 1

There are no specific biosecurity regulations, but biosafety regulations include provisions relating to biosecurity.

Two sets of Ministry of Healthcare biosafety regulations—the 1999 "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II" and the 2002 "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units)"—contain clauses pertaining to biosecurity [1, 2]. Specifically, these clauses require potentially dangerous pathogens to be sealed and locked away when not in use; require laboratories to have code locks, and mandate that facilities must be closed to the general public, fenced off, and guarded at night [1, 2]. Moreover, especially dangerous pathogens, including animal pathogens, must be handled according to the "two person rule" (at least two people must be present, one of whom must be a doctor or trained specialist) [2].

However, neither of these regulations contains information about cybersecurity or failure reporting systems [1, 2]. No information on biosecurity regulations are provided in Ukraine's 2019 or 2020 Confidence Building Measures Reports, submitted to the United Nations (UN) as part of its commitments under the Biological Weapons Convention [3, 4]. Furthermore, no relevant information is available in the Verification Research, Training, and Information Centre (VERTIC) database [5].

[1] Ministry of Healthcare of Ukraine. 1999. "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/v0001588-02#Text>]. Accessed 4 February 2021.

[3] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[4] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 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>]. Accessed 4 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: 1

There is an established agency responsible for the enforcement of biosecurity regulations in Ukraine.

Under the 1999 "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II," the Central Regime Commission of the Ministry of Healthcare is responsible for overseeing compliance with regulations concerning the handling of dangerous pathogens and keeping a record of all accidents/security incidents involving dangerous pathogens [1]. In line with these regulations and also the 2002 "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units)," the Commission issues licences permitting laboratories to work with dangerous pathogens and maintains a database of those institutions to which licences have been granted [1, 2]. In addition to the Central Regime Commission, there are Regime Commissions at the regional (oblast), city, and district levels, each of which are required to submit yearly reports to the central commission. At each level, the commissions are to include "highly qualified specialists with a wealth of experience working with pathogenic agents and enforcing anti-epidemic measures" [1].

Furthermore, no information on a biosecurity agency is given in Ukraine's 2019 or 2020 Confidence Building Measures Reports, submitted to the United Nations (UN) as part of its commitments under the Biological Weapons Convention [3, 4].

[1] Ministry of Healthcare of Ukraine. 1999. "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/v0001588-02#Text>]. Accessed 4 February 2021.

[3] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[4] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 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 evidence that Ukraine has taken action to consolidate its inventories of especially dangerous pathogens into a minimum number of facilities.

There is no mention of such efforts in the "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II" (adopted 1999) or the "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments,

Units)" (adopted 2002) on the websites of the Ministry of Healthcare, Ministry of Defense, or Ministry of Agrarian Policy and Food in Ukraine's 2020 Confidence Building Measure report (submitted to the United Nations as part of its commitments under the Biological Weapons Convention) or in the Verification Research, Training, and Information Centre (VERTIC) database [1, 2, 3, 4, 5, 6, 7].

However, for a laboratory to work with dangerous pathogens, it must obtain a license from the Central Regime Commission at the Ministry of Healthcare; as of 2012, only two laboratories were licensed to work with the most dangerous category of pathogens and 402 laboratories were licensed to work with second-class pathogens [8]. There is no evidence on the website of the Ministry of Healthcare that any other laboratories have obtained a license since 2012 [1].

In addition, in April 2020, the U.S. Embassy in Ukraine reported that it was working with the Ukrainian government to "consolidate and secure pathogens and toxins of security concern in Ukrainian government facilities" as part of the U.S. Department of Defense's Biological Threat Reduction Program, which has been active in Ukraine, Russia, Kazakhstan, Uzbekistan, Georgia, and Azerbaijan since at least 1998 [9, 10]. However, it is not clear from the U.S. Embassy's website what this consolidation entails or how actively it is being pursued [10].

[1] Ministry of Healthcare of Ukraine. 1999 "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/v0001588-02#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[5] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

[6] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[8] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.

[9] National Academy of Sciences and National Research Council. 2007. "The Biological Threat Reduction Program of the Department of Defense: From Foreign Assistance to Sustainable Partnerships". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 11 February 2021. [<https://www.nap.edu/read/12005/chapter/5>].

[10] United States Embassy in Ukraine. 2020. "U.S.-Ukraine Partnership to Reduce Biological Threats". [<https://ua.usembassy.gov/u-s-ukraine-partnership-to-reduce-biological-threats>]. Accessed 4 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 clear evidence of capacity polymerase chain reaction (PCR)-based diagnostic testing for Ebola, but it is unclear whether such testing is available for anthrax.

A 2014 Ministry of Healthcare Order "On the organization of activities in the case of patient (suspicious) disease, caused by the Ebola virus" mandates the use of PCR-based diagnostic testing for Ebola [1]. Specifically, PCR-based testing is mandated for Ebola detection in liver tissue, blood, saliva, urine, milk or oropharyngeal smear [1]. However, no external sources have been found to verify that this order is implemented.

PCR testing is not mentioned in the State Department of Veterinary Medicine instructions "On measures for the prevention and control of anthrax" (adopted in 1999) [2, 3]. Clinical research on such testing has been conducted in Ukraine, including a 2014 paper published by scientists at the Ministry of Agrarian Policy and Food, that suggests that the capacity does exist [3, 4]. However, no evidence that PCR-based diagnostic testing for anthrax is used or readily available was found on the websites of the Ministry of Healthcare or of the Central Reference Laboratories of the Center for Public Health of Ukraine [5, 6].

[1] Ministry of Healthcare of Ukraine. 2014. "Order on the Organization of Activities in the Case of Patient (Suspicious) Disease, Caused by the Ebola Virus (Про організацію проведення заходів у разі виявлення хворого (підозрілого) на хворобу, спричинену вірусом Ебола)". [<http://zakon.rada.gov.ua/laws/show/z1392-14>]. Accessed 4 February 2021.

[2] State Department of Veterinary Medicine. 2000. "Instructions on Measures for the Prevention and Control of Anthrax. (Інструкція про заходи з профілактики та боротьби з сибіркою тварин)". [<http://zakon.rada.gov.ua/laws/show/z0136-00>]. Accessed 4 February 2021.

[3] Liudmyla Murtazaieva, Oleksandr Lymanskyi and Olha Lymansk. 2012. "Method for Detection of Malignant Anthrax Etiological Agent. (Спосіб детекції збудника сибірки)". Ukrainian Patents Database. [<http://uapatents.com/8-70049-sposib-detekci-zbudnika-sibirki.html>]. Accessed 4 February 2021.

[4] Ministry of Agrarian Policy and Food of Ukraine. 2014. "Laboratory Diagnosis of Anthrax in Animals, Indication of the Pathogen From Pathological and Biological Material, Raw Materials of Animal Origin and Environmental Objects (Лаборагорна діагностика сибірки тварин, індикація збудника з патологічного та біологічного матеріалу, сировини тваринного походження та об'єктів навколишнього середовища)". [<http://vetcontrol.org.ua/doc/metodsibirka.pdf>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[6] Center for Public Health of Ukraine. "Reference Laboratories of the CPH (Референс-лабораторії ЦГЗ)". [<https://phc.org.ua/kontrol-zakhvoryuvan/laboratorni-doslidzhennya/referens-laboratorii-cgz>]. 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 train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1, No = 0

Current Year Score: 0

Personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials are required to undergo biosecurity training, but there is no evidence of a standardized, required approach.

In line with the State Sanitary Rules entitled "Safety of Work with Microorganisms from Pathogenic Groups I-II" (adopted 1999) and "Regulations for the Organization and Safety of Work in Microbiological Laboratories" (adopted 2002), personnel

working with especially dangerous pathogens are required to undergo biosecurity and biosafety training every six months [1, 2]. Ukraine's 2015 Global Health Security Agenda Assessment reports that Ukraine has a satisfactory training program for biosafety and biosecurity [3]. There have been comprehensive biosecurity training programs funded and supported by the USA, UK, the European Union, and Canada [4, 5, 6].

In early 2021, the Organization for Security and Co-Operation in Europe (OSCE) was also hiring a consultant to provide biosecurity training to life scientists in the Ministry of Healthcare, the State Service of Ukraine on Food Safety and Consumer Protection, the National Academy of Science of Ukraine, National Academy of Medical Sciences of Ukraine (NAMSU), and National Academy of Agrarian Sciences of Ukraine (NAASU) [7].

Ukraine's 2019 Confidence Building Measure Report (submitted to the United Nations as part of its commitments under the Biological Weapons Convention) specified that two laboratories at the I. I. Mechnikov Anti-Plague Research Institute, which is under the Ministry of Healthcare, provided "specialized training [. . .] in the areas of biosafety and biosecurity for the handling of dangerous pathogens" [8]. However, this information is not present in its most recent Confidence Building Measure Report from 2020 [8, 9].

None of the sources cited above; the Verification Research, Training, and Information Centre (VERTIC) database; or the websites of the Ministries of Healthcare, Ministry of Agrarian Policy and Food, or Ministry of Defense contain evidence of a standardized approach or curriculum [10, 11, 12].

- [1] Ministry of Healthcare of Ukraine. 1999. "State Sanitary Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.
- [2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/v0001588-02#Text>]. Accessed 4 February 2021.
- [3] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine". [<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.
- [4] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.
- [5] Tatyana Novosiolova. 2015. "Statement by Ms Tatyana Novosiolova on behalf of the Ukrainian Biosafety Association and the Bradford Disarmament Research Centre, UK to the Meeting of Experts of the Parties to the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction." Ukrainian Biosafety Association and University of Bradford. [[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/07A730538ADCFB7C1257EB5004C1FD9/\\$file/Ukrainian+Biosafety+Assn+and+Bradford_Final.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/07A730538ADCFB7C1257EB5004C1FD9/$file/Ukrainian+Biosafety+Assn+and+Bradford_Final.pdf)]. Accessed 4 February 2021.
- [6] Educational and Scientific Institute of Natural Sciences. 2015. "Training in the Spheres of Biosafety and Biosecurity (Тренінг у галузі біозахисту та біобезпеки)". [<https://ipn.cdu.edu.ua/index.php/news-menu/item/1791-treninh-u-haluzi-biozakhystu-ta-biobezpeky>]. Accessed 4 February 2021.
- [7] United Nations (UN) Jobnet. 2021. "Local Consultant, Training Systems on Biological Safety and Security". [<https://www.unjobnet.org/jobs/detail/22289619>]. Accessed 4 February 2021.
- [8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.
- [9] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4

February 2021.

[10] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[11] Ministry of Agrarian Policy and Food. [<http://www.minagro.gov.ua/>]. Accessed 4 February 2021.

[12] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.

[13] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua>]. 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

Regulations and licensing conditions do not specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to drug testing, background checks, or psychological or mental fitness checks.

The regulations for staff with access to dangerous pathogens (contained within the 2002 "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units)" and the 1999 "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II" do not make any mention of drug testing, background checks or psychological or mental fitness checks [1, 2].

The decree "On the Conduct of Mandatory Medical Screenings for Workers in Public-Facing Professions, Enterprises and Organizations Whose Activity Could Lead to the Spread of Infectious Diseases" (adopted 2002, last updated in January 2021) specifies that individuals in certain lines of work must undergo mandatory medical screenings upon their hiring. Laboratory workers must undergo a battery of medical tests for conditions such as syphilis, typhoid fever, and staph infections. Neither drug testing nor psychological/mental fitness checks are included in this mandatory testing [3, 4].

There is no mention of such checks in the Verification Research, Training, and Information Centre (VERTIC) database; the websites of the Ministry of Healthcare, the Ministry of Defense, or the Ministry of Agrarian Policy and Food; or Ukraine's 2019 or 2020 Confidence Building Measures Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [5, 6, 7, 8, 9, 10].

[1] Ministry of Healthcare of Ukraine. 1999. "Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2014. "List of Doctors and Laboratory Tests and Other Tests Required for Mandatory Medical Screenings, and Their Frequency (ПЕРЕЛІК необхідних обстежень лікарів-спеціалістів, видів клінічних,

лабораторних та інших досліджень, що необхідні для проведення обов'язкових медичних оглядів, та періодичність їх проведення). [<https://zakon.rada.gov.ua/laws/show/z0640-02#Text>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. 2002. "On the Conduct of Mandatory Medical Screenings for Workers in Public-Facing Professions, Enterprises and Organizations Whose Activity Could Lead to the Spread of Infectious Diseases (Щодо організації проведення обов'язкових профілактичних медичних оглядів працівників окремих професій, виробництв і організацій, діяльність яких пов'язана з обслуговуванням населення і може призвести до поширення інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[6] Ministry of Defense of Ukraine. [<http://www.mil.gov.ua/>]. Accessed 4 February 2021.

[7] Ministry of Agrarian Policy and Food. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[8] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[9] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1, No = 0

Current Year Score: 0

There is publicly available information on regulations on the safe and secure transport of infectious substances, but the regulations for domestic transportation do not refer to Categories A and B.

The domestic transportation of infectious substances is governed by the the Ministry of Internal Affairs' "Rules for Road Transport of Dangerous Goods" (adopted 2014, last updated in 2018), while international transportation is governed by the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR) [1, 2]. Both documents are publicly available online. The ADR employs Categories A and B, featuring definitions thereof and an indicative list of Category A goods [1]. Moreover, the Agreement contains regulations specific to goods from these categories [1]. However, Ukraine's Rules for Road Transport of Dangerous Goods do not use these categories and the majority of the document's provisions apply to dangerous goods in general, with few clauses specific to infectious substances [2].

A regulation titled "On the Confirmation of the Instructions for the Storage, Maintenance, Release, Import and Export from the Territory of Ukraine of Microorganisms, Toxins and Contaminants of Animal or Plant Origin that are Used for Veterinary Medicine and Science" (adopted 2017) establishes some additional transportation requirements for pathogens of animal/plant origin. In these documents, the pathogens under consideration are sorted into three groups; the first two groups are referred to as "List A" and "List B" diseases, respectively, but they do not contain all of the IATA's Category A and B substances, the list of which was last updated in January 2021 [3, 4].

No information on transport regulations is given in the Verification Research, Training, and Information Centre (VERTIC)

database, nor in Ukraine's 2019 or 2020 Confidence Building Measures Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [5, 6, 7]. No additional information could be found on the websites of the Ministry of Healthcare, Ministry of Agrarian Policy and Food, or Ministry of Defense [8, 9, 10].

- [1] United Nations. 2017. "European Agreement Concerning the International Carriage of Dangerous Goods by Road." [http://www.unece.org/fileadmin/DAM/trans/danger/publi/adr/adr2017/ADR2017E_web.pdf]. Accessed 4 February 2021.
- [2] Ministry of Internal Affairs of Ukraine. 2014. "Rules for Road Transport of Dangerous Goods (Правила дорожнього перевезення небезпечних вантажів) Legislation of Ukraine. [<http://zakon2.rada.gov.ua/laws/show/z1040-04>]. Accessed 4 February 2021.
- [3] Ministry of Agrarian Policy and Food of Ukraine. 2017. "On the Confirmation of the Instructions for the Storage, Maintenance, Release, Import and Export from the Territory of Ukraine of Microorganisms, Toxins and Contaminants of Animal or Plant Origin that are Used for Veterinary Medicine and Science (Про затвердження Інструкції про порядок зберігання, підтримання, відпуску, завезення в Україну і вивезення штамів мікроорганізмів, токсинів і отрут тваринного та рослинного походження, які використовуються для потреб ветеринарної медицини та науки). [<https://zakon.rada.gov.ua/laws/show/z0999-02#Text>]. Accessed 4 February 2021.
- [4] IATA. 2021. "Dangerous Goods Regulations". [<https://www.iata.org/contentassets/b08040a138dc4442a4f066e6fb99fe2a/dgr-62-en-3.6.2.pdf>]. Accessed 4 February 2021.
- [5] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.
- [6] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 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>]. Accessed 4 February 2021.
- [8] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.
- [9] Ministry of Agrarian Policy and Food. [<http://www.minagro.gov.ua/>]. Accessed 4 February 2021.
- [10] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 23 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

There is national legislation in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential.

According to the "Procedure of the State Control over International Transportation of Dual-use Goods" (adopted 2004, last updated 2019), it is necessary to obtain a permit from the State Export Control Board in order to import or export any dual-use goods, including goods that could be used to create bacteriological, biological or toxic weapons [1]. The import or export of such goods is only permitted when the goods are intended for preventative, protective, or other peaceful purposes [1]. As such, when applying for a permit it is necessary to submit details of the intended end user [1]. The "Central List of Dual-Use Goods" was released in Ukraine in 2018 [2].

There is no mention of any relevant regulations or legislation in Ukraine's 2019 or 2020 Confidence Building Measure Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [3,4].

[1] Cabinet of Ministers of Ukraine. 2004. "Procedure of the State Control Over International Transportation of Dual-use Goods (Про затвердження Порядку здійснення державного контролю за міжнародними передачами товарів подвійного використання)". [<http://zakon.rada.gov.ua/laws/show/86-2004-%D0%BF>]. Accessed 4 February 2021.

[2] Ministry of Foreign Affairs of Ukraine. 2020. "Export Control (Експортний контроль)". [<https://mfa.gov.ua/pitannya-mizhnarodnoi-bezpeki/eksportnij-kontrol>]. Accessed 4 February 2021.

[3] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[4] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 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

Ukraine has in place national biosafety legislation.

There are detailed and thorough biosafety regulations for institutions dealing with potentially dangerous pathogens, contained in three main pieces of biosafety legislation: the State Sanitary Rules on "Safety of Work with Microorganisms from Pathogenic Groups I-II" (adopted 1999), the "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units)" (adopted 2002), and the State Sanitary Rules "On the Organization of Laboratories' Work in the Case of Investigation of Materials Containing Biological Pathogenic Agents of Groups I-IV by Molecular-Genetic Methods" (adopted 2008) [1, 2, 3]. The "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units)" explicitly apply to all laboratories on the territory of Ukraine regardless of ownership type [2]. "Safety of Work with Microorganisms from Pathogenic Groups I-II" (adopted 1999) states that sanitary and hygiene norms are required to be met for facilities with biological materials, the requirements for qualification and special training of personnel who are allowed to work with biological material of I-II danger groups are to be regulated, restricted persons are only allowed to work on biological materials, use of specific immunoprophylaxis for staff and isolation and preventive treatment of persons who had contact and pathogen in an accident to prevent the spread of infection outside the premises where there was an accident is to be carried out, among other safety measures [1, 2].

The 1999 law specifically pertains to work with the most dangerous categories of pathogens, while the 2008 law applies to work with pathogens of any category and the 2002 law applies to work in any microbiological laboratory [1, 2, 3].

A 2015 report by the Global Health Security Agenda Assessment notes that there is an ongoing reform of biosafety and biosecurity regulations to harmonize them with international standards[4].

Ukraine's 2020 Confidence Building Measures Report, submitted to the United Nations as part of its commitments under the Biological Weapons Convention, states that the country's biosafety regulations are "in keeping with the World Health Organization's most recent Laboratory Biosafety Manual or with equivalent national or international statutes" [5].

[1] Ministry of Healthcare of Ukraine. "State Sanitary Regulations on Safety of Work with Microorganisms from Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". [http://arm.te.ua/docs/DSP_9_9_5035-99.pdf]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю)". [<https://zakon.rada.gov.ua/rada/show/v0001588-02#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2008. "The Organization of Laboratories' Work in the Case of Investigation of Materials Containing Biological Pathogenic Agents of Groups I-IV by Molecular-Genetic Methods (Організація роботи лабораторій при дослідженні матеріалу, що містить біологічні патогенні агенти I-IV груп патогенності молекулярно-генетичними методами)". [<http://zakon.rada.gov.ua/laws/show/z0088-08>]. Accessed 4 February 2021.

[4] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine." [<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.

[5] Biological Weapons Conventions (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 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

There is an established agency responsible for the enforcement of biosafety legislation and regulations.

In line with the 1992 Ministry of Healthcare Order "On the Handling of Pathogenic Microorganisms," the Central Regime Commission of the Ministry of Healthcare is responsible for overseeing compliance with regulations concerning the handling of dangerous pathogens and keeping a record of all accidents/security incidents involving dangerous pathogens [1]. In addition to the Central Regime Commission, there are Regime Commissions at the regional (oblast), city, and district level, each of which are required to submit yearly reports to the central commission. At each level, the commissions are to include "highly qualified specialists with a wealth of experience working with pathogenic agents and enforcing anti-epidemic measures" [1].

No information on a biosafety agency is given in Ukraine's 2019 or 2020 Confidence Building Measures Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [2, 3]. In addition, no recent information could be found concerning recent activities by the Central Regime Commission on the websites of the Ministry of Healthcare, the Ministry of Agrarian Policy and Food, or in the Verification Research, Training, and Information Centre (VERTIC) Database [4, 5, 6].

[1] Ministry of Healthcare of Ukraine. 1992. "On the Handling of Pathogenic Microorganisms" ("Про режим роботи з патогенними мікроорганізмами"). [<https://zakon.rada.gov.ua/rada/show/v0183282-92#Text>]. Accessed 4 February 2021.

[2] Biological Weapons Conventions (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[3] Biological Weapons Conventions (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence

Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[5] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[6] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 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: 0

Personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials are required to undergo biosafety training, but there is no evidence of a standardized, required approach.

In line with the Law on Safety of Work with Microorganisms from Pathogenic Groups I-II (adopted 1999) and "Regulations for the Organization and Safety of Work in Microbiological Laboratories" (adopted 2002), personnel working with especially dangerous pathogens are required to undergo biosecurity and biosafety training every six months [1, 2]. The Global Health Security Agenda Assessment for Ukraine reported in 2015 that Ukraine has a satisfactory training program for biosafety and biosecurity [3]. There have been comprehensive biosafety training program funded and supported by the USA, UK, European Union and Canada [4, 5, 6].

Previous versions of Ukraine's Confidence Building Measure Report (submitted to the United Nations as part of its commitments under the Biological Weapons Convention) specified that two laboratories at the I. I. Mechnikov Anti-Plague Research Institute, which is under the Ministry of Healthcare, provided "specialized training [...] in the areas of biosafety and biosecurity for the handling of dangerous pathogens." However, this information is not present in its most recent Confidence Building Measure Report from 2020 [7, 8].

None of the sources cited above, nor the Verification Research, Training, and Information Centre (VERTIC) database or the websites of the Ministries of Healthcare, Agrarian Policy and Food, or Defence, contain evidence of a standardized approach or curriculum [9, 10, 11, 12].

[1] Ministry of Healthcare of Ukraine. 2002. "Regulations for the Organization and Safety of Work in Microbiological Laboratories (Departments, Units) (Правила влаштування і безпеки роботи в лабораторіях (відділах, відділеннях) мікробіологічного профілю) Нормативно-директивні документи. [<http://mozdocs.kiev.ua/view.php?id=6667>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 1999. "Safety of Work With Microorganisms From Pathogenic Groups I-II (Безпека роботи з мікроорганізмами I-II груп патогенності)". Ministry of Economic Development and Trade of Ukraine. [<https://regulation.gov.ua/documents/id238160>]. Accessed 4 February 2021.

[3] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine". [<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>].

Accessed 4 February 2021.

[4] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.

[5] Tatyana Novosiolova. 2015. "Statement by Ms Tatyana Novosiolova on Behalf of the Ukrainian Biosafety Association and the Bradford Disarmament Research Centre, UK to the Meeting of Experts of the Parties to the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction." Ukrainian Biosafety Association and University of Bradford.

[[https://www.unog.ch/80256EDD006B8954/\(httpAssets\)/07A730538ADCFBB7C1257EB5004C1FD9/\\$file/Ukrainian+Biosafety+Assn+and+Bradford_Final.pdf](https://www.unog.ch/80256EDD006B8954/(httpAssets)/07A730538ADCFBB7C1257EB5004C1FD9/$file/Ukrainian+Biosafety+Assn+and+Bradford_Final.pdf)]. Accessed 4 February 2021.

[6] Educational and Scientific Institute of Natural Sciences. 2015. "Training in the spheres of biosafety and biosecurity" ("Тренінг у галузі біозахисту та біобезпеки"). [<https://ipn.cdu.edu.ua/index.php/news-menu/item/1791-treninh-u-haluzi-biozakhystu-ta-biobezpeky>]. Accessed 4 February 2021.

[6] Government of Ukraine. 2018. "Report on Ukraine's implementation of the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction." ("Объявление о выполнении Украиной Конвенции о запрещении разработки, производства и накопления запасов бактериологического (биологического) и токсинного оружия и об их уничтожении.") [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2018_ukraine.pdf]. Accessed 18 March 2019.

[7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[8] Biological Weapons Conventions (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.

[9] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[10] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[11] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

[12] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence that the country has conducted an assessment to determine whether research is being conducted on especially dangerous pathogens, toxins, pathogens with pandemic potential, or other dual-use research in Ukraine.

No record of such an assessment is available in the Verification Research, Training, and Information Centre (VERTIC)

database; on the websites of the Ministry of Healthcare, the Ministry of Defense or the Ministry of Agrarian Policy and Food; or in Ukraine's 2019 or 2020 Confidence Building Measure Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [1, 2, 3, 4, 5, 6].

In one paper on gaps in international governance of dual-use research, prominent expert on infectious diseases and biological weapons Piers D Millet, of Biosecure Ltd, notes an apparent lack of interest in dual-use research among Ukrainian experts and officials [7, 8].

Since 2018, the state has maintained a "Central List of Dual-Use Goods" [9, 10]. The law regulating the import and export of dual-use substances, last updated in 2018, states that goods on the Central List of Dual-Use Goods may be exported or imported for research purposes, but does not contain information about whether this research is tracked by the state [9].

- [1] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.
- [2] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.
- [3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.
- [4] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.
- [5] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.
- [6] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.
- [7] Piers D Millett. 2017. "Gaps in the International Governance of Dual-use Research of Concern". National Academy of Sciences. [https://sites.nationalacademies.org/cs/groups/pgasite/documents/webpage/pga_176434.pdf]. Accessed 4 February 2021.
- [8] National Academies of Sciences, Engineering, and Medicine. 2017. *Dual Use Research of Concern in the Life Sciences: Current Issues and Controversies*. Washington, DC: The National Academies Press. [<https://www.ncbi.nlm.nih.gov/books/NBK458500/>]. Accessed 4 February 2021.
- [9] Cabinet of Ministers of Ukraine. 2004. "Procedure of the State Control Over International Transportation of Dual-use Goods (Про затвердження Порядку здійснення державного контролю за міжнародними передачами товарів подвійного використання)". [<http://zakon.rada.gov.ua/laws/show/86-2004-%D0%BF>]. Accessed 4 February 2021.
- [10] Ministry of Foreign Affairs of Ukraine. 2020. "Export Control (Експортний контроль)". [<https://mfa.gov.ua/pitannya-mizhnarodnoyi-bezpeki/eksportnij-kontrol>]. Accessed 4 February 2021.

1.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of a national policy explicitly requiring oversight of dual-use research, though there is oversight of research with dangerous pathogens.

There is no evidence of a national policy explicitly requiring oversight of dual-use research in the Verification Research, Training, and Information Centre (VERTIC) database; on the websites of the Ministry of Healthcare, the Ministry of Defense or

the Ministry of Agrarian Policy and Food; or in Ukraine's 2019 or 2020 Confidence Building Measure Reports, submitted to the United Nations as part of its commitments under the Biological Weapons Convention [1, 2, 3, 4, 5, 6].

In order to carry out work with dangerous pathogens, a laboratory must obtain a licence from the Central Regime Commission of the Ministry of Healthcare, as per the 1999 Ministry of Healthcare Order "On the Handling of Pathogenic Microorganisms" [7]. In addition, in line with this Order, the Central Regime Commission maintains a database of all institutions licensed to work with dangerous pathogens and monitors their activity from the perspective of biosafety and biosecurity [7, 8]. The Central Regime Commission of the Ministry of Healthcare is responsible for overseeing compliance with regulations concerning the handling of dangerous pathogens, and keeping a record of all accidents/security incidents involving dangerous pathogens [8]. In addition to the Central Regime Commission, there are Regime Commissions at the regional (oblast), city, and district levels, each of which are required to submit yearly reports to the central commission. At each level, the commissions are to include "highly qualified specialists with a wealth of experience working with pathogenic agents and enforcing anti-epidemic measures" [7].

Furthermore, there is state oversight of international transfers of dual-use products, including pathogens and toxins with pandemic potential [8]. In order to import or export such materials, it is necessary to obtain permission from the State Export Control Board. Since 2018, the state has maintained a "Central List of Dual-Use Goods" [9, 10]. The law regulating the import and export of dual-use substances, last updated in 2018, states that goods on the Central List of Dual-Use Goods may be exported or imported for research purposes, but does not contain information about whether this research is overseen by the state [9].

[1] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.

[2] BWC Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[5] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

[6] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.

[7] Ministry of Healthcare of Ukraine. 1999. "On the Handling of Pathogenic Microorganisms" ("Про режим роботи з патогенними мікроорганізмами"). [<https://zakon.rada.gov.ua/rada/show/>]. Accessed 4 February 2021.

[8] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.

[9] Cabinet of Ministers of Ukraine. 2004. "Procedure of the State Control Over International Transportation of Dual-use Goods. (Про затвердження Порядку здійснення державного контролю за міжнародними передачами товарів подвійного використання)". [<http://zakon.rada.gov.ua/laws/show/86-2004-%D0%BF>]. Accessed 4 February 2021.

[10] Ministry of Foreign Affairs of Ukraine. 2020. "Export Control (Експортний контроль)". [<https://mfa.gov.ua/pitannya-mizhnarodnoyi-bezpeki/eksportnij-kontrol>]. Accessed 4 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 of an agency specifically responsible for oversight of dual-use research, though there is an agency responsible for oversight of research with dangerous pathogens.

There is no evidence of an agency specifically responsible for oversight of dual-use research in the Verification Research, Training, and Information Centre (VERTIC) database, or on the websites of the Ministry of Healthcare, the Ministry of Defense, or the Ministry of Agrarian Policy and Food, or in Ukraine's 2019 or 2020 Confidence Building Measure Reports, which are submitted to the United Nations as part of its commitments under the Biological Weapons Convention [1, 2, 3, 4, 5, 6].

The main authority that is responsible for the oversight of research with dangerous pathogens is the Central Regime Commission, which works together with regional Regime Commissions of the State Sanitary Epidemiological Service of Ukraine and regional chief state sanitary doctors of Ukraine [7, 8].

Under the 1999 Order "On the Handling of Pathogenic Microorganisms," the Central Regime Commission of the Ministry of Healthcare is responsible for overseeing compliance with regulations concerning the handling of dangerous pathogens and keeping a record of all accidents/security incidents involving dangerous pathogens [8]. In addition to the Central Regime Commission, there are Regime Commissions at the regional (oblast), city, and district level, each of which are required to submit yearly reports to the central commission. At each level, the commissions are to include "highly qualified specialists with a wealth of experience working with pathogenic agents and enforcing anti-epidemic measures" [8].

Since 2018, the state has maintained a "Central List of Dual-Use Goods" [9, 10]. The law regulating the import and export of dual-use substances, last updated in 2018, states that goods on the Central List of Dual-Use Goods may be exported or imported for research purposes, but does not contain information about whether this research is overseen by the state or other agency [9].

- [1] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.
- [2] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.
- [3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.
- [4] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.
- [5] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.
- [6] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 February 2021.
- [7] National Academy of Sciences and National Research Council. 2012. "Biosecurity Challenges of the Global Expansion of High-Containment Biological Laboratories: Summary of a Workshop". [<https://www.nap.edu/catalog/13315/biosecurity-challenges-of-the-global-expansion-of-high-containment-biological-laboratories>]. Accessed 4 February 2021.
- [8] Ministry of Healthcare of Ukraine. 1999. "On the Handling of Pathogenic Microorganisms" ("Про режим роботи з патогенними мікроорганізмами"). [<https://zakon.rada.gov.ua/rada/show/v0183282-92#Text>]. Accessed 4 February 2021.
- [9] Cabinet of Ministers of Ukraine. 2004. "Procedure of the State Control Over International Transportation of Dual-use Goods (Про затвердження Порядку здійснення державного контролю за міжнародними передачами товарів подвійного використання)". [<http://zakon.rada.gov.ua/laws/show/86-2004-%D0%BF>]. Accessed 4 February 2021.
- [10] Ministry of Foreign Affairs of Ukraine. 2020. "Export Control (Експортний контроль)". [<https://mfa.gov.ua/pitannya->

mizhnarodnoyi-bezpeki/eksportnij-kontrol]. Accessed 4 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 of national legislation requiring the sequence of synthesized DNA to be passed through a screener before it is sold.

The law on the state biosafety system for the establishment, testing, transport and use of genetically modified organisms (GMOs) (adopted in 2007 and last updated in late 2020), explicitly applies to all forms of genetically modified biological life, including viruses. The law requires that, before sale, all GMOs, products containing GMOs and products derived from GMOs be screened by a network of test laboratories, co-ordinated by the Scientific-Methodological Center for Testing GMOs, a state scientific institution [1, 2, 3].

However, the law on the state biosafety system does not establish requirements for the testing process and so it cannot be confirmed that DNA sequences are screened with a code scanner [1]. Moreover, the aforementioned Scientific-Methodological Center for Testing GMOs does not have its own web presence, and no information regarding its operations could be found on the websites of the Ministry of Healthcare, Ministry of Agrarian Policy and Food, or Ministry of Defense [1, 8, 9, 10].

A separate law, adopted in 2018, "On the Confirmation of the Conduct of State Veterinary Oversight of Animal Feed, Additives, and Medicines Containing Genetically Modified Organisms," states that any veterinary products containing GMOs must be screened by the State Service for Food Safety and Consumer Protection. The law does not specify that the DNA sequences of such products are passed through a screener nor is there any such evidence on the website of the State Service for Food Safety and Consumer Protection [4, 5].

There is no such information in the Verification Research, Training, and Information Centre (VERTIC) database or on the websites of the Ministry of Healthcare, Ministry of Agrarian Policy and Food, Ministry of Infrastructure, or the Ministry of Defense, or in Ukraine's 2019 or 2020 Confidence Building Measures Report [6, 7, 8, 9, 10, 11, 12].

[1] Verkhovna Rada of Ukraine. 2007. "On the State Biosafety System for the Establishment, Testing, Transport and Use of Genetically Modified Organisms (Про державну систему біобезпеки при створенні, випробуванні, транспортуванні та використанні генетично модифікованих організмів)". [<http://zakon.rada.gov.ua/laws/show/1103-16>]. Accessed 4 February 2021.

[2] UNIAN. 2012. "Ukraine Will Set up a Network of Laboratories for the Identification of GMOs (В Україні створюють мережу лабораторій з визначення ГМО)". [<https://www.unian.ua/health/country/613069-v-ukrajini-stvoryat-mereju-laboratoriy-z-viznachennya-gmo.html>]. Accessed 4 February 2021.

[3] Ministry of Education, Science, Youth and Sport of Ukraine. 2012. "In Ukraine, An Institute That Will Deal With GMO Testing Will be Identified (В Україні визначено інститут, який займатиметься питаннями випробувань ГМО)". [http://old.kmu.gov.ua/kmu/control/uk/publish/article?art_id=245687304&cat_id=248439670]. Accessed 4 February 2021.

[4] Ministry of Agrarian Policy and Food. 2018. "On the Confirmation of the Conduct of State Veterinary Oversight of Animal

- Feed, Additives, and Medicines Containing Genetically Modified Organisms (Про затвердження Порядку проведення державної ветеринарно-санітарної експертизи кормів, кормових добавок та ветеринарних препаратів, які містять генетично модифіковані організми)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.
- [5] State Service for Food Safety and Consumer Protection of Ukraine. [<http://dpss.gov.ua/>]. Accessed 11 February 2021.
- [6] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2020. "Ukraine: Confidence Building Measure Forms 2020". [<https://bwc-ecbm.unog.ch/ukraine/bwccbm2020ukraine>]. Accessed 4 February 2021.
- [7] Biological Weapons Convention (BWC) Electronic Confidence Building Measures Portal. 2019. "Ukraine: Confidence Building Measure Forms 2019". [https://bwc-ecbm.unog.ch/system/files/form-pdf/bwc_cbm_2019_ukraine.pdf]. Accessed 4 February 2021.
- [8] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.
- [9] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.
- [10] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.
- [11] Ministry of Infrastructure of Ukraine. [<https://mtu.gov.ua/>]. Accessed 11 February 2021.
- [12] Verification Research, Training, and Information Centre (VERTIC). "BWC Legislation Database". [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database>]. Accessed 4 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 has the capacity to conduct diagnostic tests for 5 of the 10 core tests defined by the World Health Organization (WHO).

In 2015, the Global Health Security Agenda (GHS) Assessment described Ukraine's national laboratory system as proficient in classical diagnostic techniques [1]. The Assessment reports that the system performs microscopy for mycobacterium tuberculosis, polymerase chain reaction (PCR) testing for influenza virus, virus culture for polio virus, serology for HIV, and bacterial culture for salmonella enteritidis serotype typhi [1]. The Ministry of Health's Methodological Recommendations for diagnosis of influenza, poliomyelitis, tuberculosis and HIV require use of the WHO-defined tests for each disease [2, 3, 4, 5].

No evidence could be found on the websites of the Ministry of Healthcare or the Center for Public Health of Ukraine that the country has rapid diagnostic testing for plasmodium spp. (malaria); the Center for Public Health's guidelines for diagnosing malaria do not mention rapid testing [6, 7, 8].

Further, the GHS Assessment reported that, in accordance with the International Health Regulations (IHR), Ukraine has selected four tests on the basis of major national public health concerns [1]. However, the Assessment does not name these four tests and there is no information on the websites of the Center for Public Health or the Ministry of Healthcare to indicate what they are [1, 7, 8].

[1] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine." [<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2015. "Instructions for the Laboratory Diagnosis of Respiratory Diseases and Influenza with Pandemic Potential" ("Інструкція з проведення лабораторної діагностики респіраторних захворювань та грипу, в тому числі з пандемічним потенціалом"). [<https://zakon.rada.gov.ua/laws/show/z0116-16#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 1998. "Methodical Recommendations: Virological Diagnosis of Poliomyelitis (Методичні рекомендації 'Вірусологічна діагностика поліомієліту')". [<http://medstandart.net/browse/17>].

[4] Ministry of Healthcare of Ukraine. 2019. "Instructions for the Microbiological Diagnosis of Tuberculosis (Про затвердження Інструкції з мікробіологічної діагностики туберкульозу)". [<http://zakon.rada.gov.ua/laws/show/z0886-19#Text>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. 2019. "On Improvements to the System of Quality Control of Laboratory Screenings for

HIV/AIDS (Про удосконалення системи управління якістю лабораторних досліджень у сфері протидії ВІЛ-інфекції/СНІДу)". [<https://zakon.rada.gov.ua/laws/show/z0698-19#Text>]. Accessed 4 February 2021.

[6] Center for Public Health of Ukraine. "Laboratory Diagnosis of Malaria (Лабораторна діагностика малярії)". [https://phc.org.ua/sites/default/files/uploads/files/%27ятка_Приготування_препаратів_крові.pdf]. Accessed 4 February 2021.

[7] Center for Public Health of Ukraine. [<http://phc.org.ua>]. Accessed 12 February 2021.

[8] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

2.1.1b

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

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

Current Year Score: 1

Ukraine does not have a national plan for conducting testing during a public health emergency with considerations for testing novel pathogens, scaling capacity, or goals for testing although there is some evidence in light of the Covid-19 pandemic.

No evidence of such a plan covering multiple diseases with pandemic potential could be located on the websites of the Ministry of Healthcare, the Ministry of Agrarian Policy and Food, or the Center for Public Health. One of the primary documents governing infectious disease policy, "On Protection of the Population from Infectious Diseases," adopted in 2000 and last updated in May 2020, mentions that "all epidemic outbreaks are subject to research aimed at determining the reasons for their emergence, factors influencing their transmission, the location of hotspots and the scale of their spread." However, it does not provide any specifics or lay out an overarching plan for testing during public health emergencies [1].

The main law dealing with infectious disease control in veterinary medicine, "On Veterinary Medicine" (adopted in 1992 and last modified in 2020) similarly does not discuss a plan to conduct or scale up testing for novel pathogens during a public health emergency [2].

However, there are testing strategies for individual diseases. In 2018, the Center for Public Health of Ukraine published a comprehensive national HIV testing strategy, which defines clear goals and benchmarks for the periods 2019-2020, 2021-2023, and 2024-2030 [3]. In addition, the Law "On Protection of the Population from Infectious Diseases" was updated in April 2020 to address the outbreak of COVID-19; it defines the groups for whom testing, including regular testing, is mandatory [1]. In September 2020, the Ministry of Healthcare also published comprehensive clinical guidelines for COVID-19, which include recommendations for testing suspected cases as well as their contacts [4]. Neither the COVID-19 nor the HIV testing strategies include references to scaling capacity [3, 4]. However, the COVID-19 strategy does include a list of people for whom testing is recommended (to include health care workers, social workers, conscripts, police, and employees of a number of other government entities) and a list of comorbidities that necessitate inpatient COVID-19 treatment [4]. In addition, the strategy discusses the roles of the Ministry of Health of Ukraine, the Center for Public Health of Ukraine, and local laboratories at which COVID-19 testing is performed [4].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 1992. "On Veterinary Medicine (Про ветеринарну медицину)".

[<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.

[3] Center for Public Health of Ukraine. 2018. "National HIV Testing Strategy in Ukraine: 2019-2030 (НАЦІОНАЛЬНА СТРАТЕГІЯ ТЕСТУВАННЯ НА ВІЛ В УКРАЇНІ: 2019-2030 роки)".

[https://www.phc.org.ua/sites/default/files/uploads/files/Natsionalna_strategia_testuvannia_na_VIL_v_Ukraini_2019-2030.pdf]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. 2020. "On Changes to the Standards of Medical Care for Coronavirus (COVID-19) (Про внесення змін до Стандартів медичної допомоги 'Коронавірусна хвороба (COVID-19)')".

[<https://zakon.rada.gov.ua/rada/show/v2122282-20#Text>]. Accessed 4 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

There are four accredited national reference laboratories in Ukraine.

The Center for Public Health under the Ministry of Healthcare in Ukraine, headquartered in the capital Kyiv, comprises four laboratories that were accredited to ISO 15189:2015 as of 2020 [1]. The Center for Public Health's website states that as of March 2020, the HIV/AIDS Reference Laboratory, Virology Analysis Reference Laboratory, Microbiology/Parasitology Reference Laboratory, and Dangerous Pathogen Research Reference Laboratory are all accredited to this standard [1]. There is no information on the website of the Center for Public Health or on the website of the Ministry of Healthcare as to whether these laboratories have any other accreditations [2, 3].

[1] Center for Public Health of Ukraine. 2020. "NAAU Grants Accreditation to CPH Reference Laboratories (НААУ ЗАСВІДЧИЛО КОМПЕТЕНТІСТЬ РЕФЕРЕНС-ЛАБОРАТОРІЙ ЦГЗ)". [<https://www.phc.org.ua/news/naau-zasvidchilo-kompetentnist-referens-laboratoriy-cgz>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[3] Center for Public Health of Ukraine. [<https://www.phc.org.ua>]. Accessed 4 February 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

There are national reference laboratories which are subject to external quality assurance (EQA) review in Ukraine.

The Center for Public Health under the Ministry of Healthcare in Ukraine, headquartered in the capital Kyiv, comprises four laboratories: the HIV/AIDS Reference Laboratory, Virology Analysis Reference Laboratory, Microbiology/Parasitology Research Reference Laboratory, and Dangerous Pathogen Research Reference Laboratory [1].

These laboratories are accredited according to ISO 15189:2015 as of March 2020 [2]. The Virology Analysis Reference Laboratory is subject to annual reviews by the World Health Organization (WHO) to ensure compliance with the WHO's diagnostic standards for polio, measles, and rubella, and in November 2018, WHO performed an onsite assessment of the

laboratory to evaluate its compliance with the WHO Terms of Reference for National Influenza Centres (NICs) [3].

The Microbiology/Parasitology Research Reference Laboratory "participates annually in international quality assessment reviews for various types of microbiological research" [1]. The Dangerous Pathogen Research Reference Laboratory is a member of the U.S. Department of Defense's (DoD) Biological Threat Reduction Program (BTRP). It is unclear whether or how regularly this laboratory is subject to EQA as part of the BTRP; however, the U.S. DoD has allocated resources to modernizing and providing security upgrades to participating laboratories in Ukraine [3, 4, 5].

The laboratories mentioned above are also responsible for conducting quality reviews at laboratories around the country [3].

[1] Center for Public Health of Ukraine. "Reference Laboratories of the Center for Public Health (CPH)" ("РЕФЕРЕНС-ЛАБОРАТОРІЇ ЦГЗ"). [<https://phc.org.ua/kontrol-zakhvoryuvan/laboratorni-doslidzhennya/referens-laboratorii-cgz>]. Accessed 4 February 2021.

[2] Center for Public Health of Ukraine. 2020. "NAAU Grants Accreditation to CPH Reference Laboratories" ("НААУ ЗАСВІДЧИЛО КОМПЕТЕНТНІСТЬ РЕФЕРЕНС-ЛАБОРАТОРІЙ ЦГЗ"). [<https://www.phc.org.ua/news/naau-zasvidchilo-kompetentnist-referens-laboratoriy-cgz>]. Accessed 4 February 2021.

[3] World Health Organization (WHO). 2018. "Visit to Assess the Virological Reference Laboratory of Ukraine's Public Health Center". [<https://www.euro.who.int/en/media-centre/events/events/2018/11/visit-to-assess-the-virological-reference-laboratory-of-ukraines-public-health-center>]. Accessed 4 February 2021.

[4] Defense Threat Reduction Agency of the United States of America. 2019. "Fiscal Year (FY) 2020 President's Budget Operation and Maintenance, Defense-Wide Cooperative Threat Reduction Program". [https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2020/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PART_2/CTR_OP-5.pdf]. Accessed 4 February 2021.

[5] U.S. Embassy in Ukraine. "Biological Threat Reduction Program". [<https://ua.usembassy.gov/embassy/kyiv/sections-offices/defense-threat-reduction-office/biological-threat-reduction-program/>]. Accessed 4 February 2021.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of a nationwide specimen transport system with at least 80% coverage in Ukraine.

According to the 2015 Global Health Security Agenda Assessment, a "fully functional" specimen transport system is in place and includes transportation from remote regions of Ukraine to national laboratories for testing [1]. However, this document does not specify the proportion of Ukraine's territory covered by the system; it also indicates that there are insufficient resources dedicated to ensuring that samples are transported in a timely manner and that resource constraints (such as ability to package samples) can reduce the system's functionality [1].

No recent information could be located on the websites of the Ministry of Health, Ministry of Agrarian Policy and Food, or Center for Public Health regarding the specifics of this nationwide network. [2, 3, 4]. A 2018 decree from the Ministry of Agrarian Policy and Food, titled "On Procedures for the Collection of Samples and their Transport to Authorized Laboratories

for the Purposes of State Oversight, and the Documentation Thereof," states that veterinary samples are to be transported by the State Service for Food Safety and Consumer Protection or by a third party contracted in accordance with the law "On Public Procurements," adopted in 2015 and updated in 2021 [5, 6].

However, there is evidence of private courier systems that are involved in the transportation of biological materials in Ukraine, such as the Kyiv-based Smart Express Forwarding [7]. In addition, Cirion, a private company headquartered in Canada that specializes in supporting clinical trials and research, offers private sample transport within, from and to Ukraine through a partnership with Globex24, a private courier company registered in Germany [8]. Neither company's websites state what percentage of Ukraine's territory is covered by their services [7, 8].

- [1] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine." [https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f]. Accessed 4 February 2021.
- [2] Ministry of Healthcare of Ukraine. [http://moz.gov.ua]. Accessed 4 February 2021.
- [3] Ministry of Agrarian Policy and Food of Ukraine. [https://agro.me.gov.ua/]. Accessed 4 February 2021.
- [4] Center for Public Health of Ukraine. [http://phc.org.ua]. Accessed 4 February 2021.
- [5] Ministry of Agrarian Policy and Food of Ukraine. 2018. "On Procedures for the Collection of Samples and their Transport to Authorized Laboratories for the Purposes of State Oversight, and the Documentation Thereof (Про затвердження Порядку відбору зразків та їх перевезення (пересилання) до уповноважених лабораторій для цілей державного контролю та Форми акта відбору зразків)". [https://zakon.rada.gov.ua/laws/show/z1464-18#Text]. Accessed 4 February 2021.
- [6] Verkhovna Rada. 2015. "On Public Procurements (Про публічні закупівлі). [https://zakon.rada.gov.ua/laws/show/922-19#Text]. Accessed 11 February 2021.
- [7] Smart Express Forwarding. "Transportation of Biological Samples and Materials (Доставка біологічних зразків і матеріалів)". [http://www.smartexpress.com.ua/]. Accessed 4 February 2021.
- [8] Cirion Central Laboratory. "Specimen Transportation". [http://www.cirion.com/Contenu.aspx?NavID=385&CultureCode=en-CA]. Accessed 4 February 2021.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence of a plan to rapidly authorize laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak.

In October 2020, the Ministry of Healthcare announced that it planned to engage a number of private laboratories to increase the country's COVID-19 testing capacity [1]. During the same month, the Cabinet of Ministers of Ukraine allocated approximately 261 million hryvnya (US\$9.3m) to the Ministry of Healthcare, part of which was used to contract private laboratories and expand testing capacity [2].

However, there is no evidence that this occurred as part of a pre-existing plan, and no information could be found on the websites of the Ministry of Healthcare, Ministry of Agrarian and Food Policy, or Center for Public Health suggesting that this

was the case [3, 4, 5]. There is also no evidence on these websites, or on that of the State Emergency Service, of a public health emergency response plan [3, 4, 5, 6].

[1] Ministry of Healthcare of Ukraine. 2020. "Ministry of Healthcare Strengthens Domestic Laboratories in Order to Increase Daily Testing Capacity (МОЗ посилює потужності вітчизняних лабораторій задля збільшення кількості тестувань на добу)". [<https://moz.gov.ua/article/news/moz-posiljuje-potuzhnosti-vitchiznanih-laboratorij-zadlja-zbilshennja-kilkosti-testuvan-na-dobu>]. Accessed 4 February 2021.

[2] Interfax Ukraine. 2020. "Stepanov on the Engagement of Private Laboratories in COVID-19 Testing: 'We Will Send Them Samples' (Степанов про залучення приватних лабораторій до проведення тестування на COVID-19: Відвозитимемо їм зразки)". [<https://ua.interfax.com.ua/news/general/694293.html>]. Accessed 4 February 2021.

[3] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[5] Center for Public Health of Ukraine. [<https://www.phc.org.ua>]. Accessed 4 February 2021.

[6] State Emergency Service of Ukraine. [<https://www.dsns.gov.ua/>]. Accessed 12 February 2021.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

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

Current Year Score: 0

There is no evidence that Ukraine is conducting ongoing event-based surveillance and analysis for infectious disease. According to the 2015 Global Health Security Agenda Assessment of Ukraine, an event-based surveillance function to capture events of public health significance not reported through the health system is not formally developed [1]. There is some monitoring of health events and rumors in the media, but further development of the event-based component of surveillance has been recommended [1]. In 2020, the U.S. provided over US\$26m in COVID-19-related assistance to Ukraine, a portion of which was earmarked to support event-based surveillance; however, there is no evidence on the website of the Ministry of Healthcare of Ukraine that this has been implemented [2, 4]. In addition, with the support of the U.S. Government, an Electronic Integrated Disease Surveillance System (EIDSS) has been deployed at institutions across Ukraine; the EIDSS "collects and distributes data" and "notifies on the events in near real-time," but it is not clear whether this data is event-based or indicator-based [3]. There is no further evidence of ongoing event-based surveillance on the websites of the Ministry of Healthcare, the State Emergency Service or the Ministry of Agrarian Policy and Food [4, 5, 6].

[1] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine." [<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.

[2] United States Embassy in Ukraine. 2020. "Updated: U.S. Assistance to Fight COVID-19". [<https://ua.usembassy.gov/update-the-united-states-is-continuing-to-lead-the-humanitarian-and-health-assistance-response-to-covid-19/>]. Accessed 4 February 2021.

[3] United States Department of State. "Electronic Integrated Disease Surveillance System (EIDSS)". [<https://photos.state.gov/libraries/ukraine/895/pdf/dtro-eidss.pdf>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[6] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 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

Ukraine has not reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) within the last two years.

No evidence that Ukraine has reported a PHEIC within the last two years could be found on the website of the WHO or of the Ministry of Healthcare [1, 2].

From 2017 through the summer of 2019, Ukraine saw a major measles outbreak; response measures involved stakeholders such as the Ministry of Healthcare, WHO, United Nations Development Program, and United Nations International Children's Emergency Fund (UNICEF) [3]. However, there is no evidence that this was reported as a potential PHEIC [3].

There is no evidence that Ukraine reported COVID-19 as a PHEIC prior to its declaration as a PHEIC by the WHO in January 2020 [4]. No evidence of this could be found on Ukraine's WHO country page [5].

[1] World Health Organization (WHO). 2021. "Disease Outbreak News (DONs)". [<https://www.who.int/csr/don/en/>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[3] Reliefweb. 2019. "Ukraine: Measles Outbreak DREF Operation No. MDRUA009 Final Report". [<https://reliefweb.int/report/ukraine/ukraine-measles-outbreak-dref-operation-n-mdrua009-final-report>]. Accessed 4 February 2021.

[4] World Health Organization (WHO). 2020. "Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV)". [[https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news/item/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov))]. Accessed 4 February 2021.

[5] World Health Organization (WHO). 2021. "Ukraine: WHO Coronavirus Disease (COVID-19) Dashboard". [<https://covid19.who.int/region/euro/country/ua>]. Accessed 4 February 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Ukraine operates an electronic reporting surveillance system at the national and sub-national levels.

In 2011, the Electronic Integrated Disease Surveillance System (EIDSS) was introduced in Ukraine as a part of the U.S. Department of Defense-funded Biological Threat Reduction Program (BTRP). The EIDSS is a software system that "collects and distributes data [and] notifies on events in near real-time." The EIDSS was originally introduced at seven locations at the national and regional levels [1]. In 2017, the Ministry of Healthcare ramped up efforts to introduce the EIDSS in more locations across the country [2]. There is evidence that the EIDSS is currently in use; moreover, in the November 2020 "Order on the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 Outbreak in Ukraine", the Ministry of Healthcare mandated that subordinate organizations use the EIDSS to report COVID-19 cases [3].

In 2015, it was reported in Ukraine's Global Health Security Agenda Assessment that "[r]eporting of diseases under surveillance from health facilities is paper-based (form 058 and register 060)" [4]. However, at the end of January 2021, the National Health Service of Ukraine mandated that healthcare workers begin filing these same documents using the EIDSS, where technically feasible, to report new COVID-19 cases [5].

No information could be found on the websites of the Ministry of Healthcare, the National Health Service of Ukraine, or the Center for Public Health regarding how broadly the EIDSS has been adopted at the time of writing this [6, 7, 8].

[1] United States Department of State. "Electronic Integrated Disease Surveillance System (EIDSS)".

[<https://photos.state.gov/libraries/ukraine/895/pdf/dtro-eidss.pdf>]. Accessed 4 February 2021.

[2] Government of Ukraine. 2017. "Ukraine introduces electronic system to conduct infectious disease surveillance".

[<https://www.kmu.gov.ua/news/249814276>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2020. "Order on the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 Outbreak in Ukraine". [<https://zakon.rada.gov.ua/laws/show/z1228-20#Text>]. Accessed 4 February 2021.

[4] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine."

[<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.

[5] National Health Service of Ukraine. 2021. "Digitization of Forms 058/O and 060/O".

[<https://ehealth.gov.ua/2021/02/01/tsyfrovizatsiya-formy-058-o-ekstrene-povidomlennya-pro-covid-19/>]. Accessed 4 February 2021.

[6] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[7] Center for Public Health of Ukraine. [<https://www.phc.org.ua>]. Accessed 4 February 2021.

[8] National Health Service of Ukraine. [<https://nszu.gov.ua/>]. Accessed 4 February 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

Ukraine's electronic reporting surveillance system collects laboratory data, but there is no evidence that data is collected in real time. In 2011, the Electronic Integrated Disease Surveillance System (EIDSS) was introduced in Ukraine as a part of the US Department of Defense-funded Biological Threat Reduction Program (BTRP). The EIDSS is a software system that "collects and distributes data [and] notifies on events in near real-time." The EIDSS was originally introduced at seven locations at the national and regional levels [1]. In 2017, the Ministry of Healthcare ramped up efforts to introduce the EIDSS in more locations across the country [2]. There is evidence that the EIDSS is currently in use; in the November 2020 "Order on the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 Outbreak in Ukraine," the Ministry of Healthcare mandated that subordinate organizations use the EIDSS to report COVID cases [3]. However, while the United States Department of State

describes EIDSS as collecting data in "near real-time," no statement of the precise reporting time lag was found the websites of the Ministry of Healthcare, the Center for Public Health, or the National Health Service of Ukraine [1, 4, 5, 6].

[1] United States Department of State. "Electronic Integrated Disease Surveillance System (EIDSS)".

[https://photos.state.gov/libraries/ukraine/895/pdf/dtro-eidss.pdf]. Accessed 4 February 2021

[2] Government of Ukraine. 2017. "Ukraine Introduces Electronic System to Conduct Infectious Disease Surveillance (В Україні впроваджують електронну систему спостереження за інфекційними захворюваннями)".

[https://www.kmu.gov.ua/news/249814276]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2020. "On the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 Outbreak in Ukraine (Деякі питання епідеміологічного нагляду (спостереження) за поширенням на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [https://zakon.rada.gov.ua/laws/show/].

Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [http://moz.gov.ua]. Accessed 4 February 2021.

[5] Center for Public Health of Ukraine. [https://www.phc.org.ua]. Accessed 4 February 2021.

[6] National Health Service of Ukraine. [https://nszu.gov.ua/]. Accessed 4 February 2021.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 1

Electronic health records (EHRs) are in use in Ukraine, but the system is not fully implemented.

The roadmap for Ukraine's e-health system was introduced in April 2018 and it foresaw the creation of a central health database, operated primarily by the Ministry of Healthcare and the National Health Service of Ukraine, that would be accessible to patients and healthcare institutions throughout the country [1]. By March 2019, the system had been introduced in test mode and family doctors, therapists, and pediatricians began accessing it to enter patient information [2]. By June 2019, 25,000 doctors had registered in the system and 2.7 million patients had used it to choose a family doctor [3].

All medical institutions that have signed contracts with the National Health Service of Ukraine (NHSU) in order to receive state healthcare benefits—which in 2019 amounted to 98% of primary health care facilities—are required to utilize the e-health system to create EHRs [4, 5]. The NHSU was formed within the Ministry of Health in 2017 and is a single payer agency that is responsible for allocating state funds to public and private medical institutions, in addition to overseeing the national e-health system [6].

As of January 2021, the NHSU's e-health adoption dashboard reported that 132 million EHRs had been created in the system for 14.9 million patients, encompassing every region of the country [7]. However, throughout 2020, there were widespread reports in Ukrainian media that the system was functioning poorly and that it was of limited use to patients [8, 9, 10]. Moreover, some of the system's basic functionalities have not yet been rolled out, such as a patient portal that will allow users to view their own medical histories [11].

- [1] Cabinet of Ministers of Ukraine. 2020. "On the Electronic Health System (Деякі питання електронної системи охорони здоров'я)". [<https://zakon.rada.gov.ua/laws/show/411-2018-п#n19>]. Accessed 4 February 2021.
- [2] EU4Digital. 2020. "The Digital Doctor: How Electronic Health Records are Transforming Health Care in Ukraine". [<https://eufordigital.eu/the-digital-doctor-how-electronic-health-records-are-transforming-health-care-in-ukraine/>]. Accessed 4 February 2021.
- [3] Ministry of Healthcare of Ukraine. 2019. "The Rollout of eHealth in Ukraine: The Action Plan for the Digitization of Healthcare Has Been Presented" ("Як буде розвиватися eHealth в Україні: презентували проект Концепції інформатизації охорони здоров'я"). [<https://moz.gov.ua/article/reform-plan/jak-bude-rozvivatisja-enealth-v-ukraini-prezentuvali-proekt-konsepicii-informatizacii-ohoroni-zdorovja>]. Accessed 4 February 2021.
- [4] National Health Service of Ukraine. 2020. "NHS: Over 500,000 eHealth Records are Entered into the eHealth System Daily (Понад 500 000 е-медичних записів створюється в ЕСОЗ щоденно— НСЗУ)". [<https://www.kmu.gov.ua/news/ponad-500-000-e-medichnih-zapisiv-stvoryuyetsya-v-esoz-shchodенno-nszu>]. Accessed 4 February 2021.
- [5] World Health Organization (WHO). 2019. "WHO Support for Health System Development in Ukraine". [https://www.euro.who.int/__data/assets/pdf_file/0006/413925/WHO_Health_Systems_support_Ukraine.pdf]. Accessed 4 February 2021.
- [6] Cabinet of Ministers of Ukraine. 2017. "On the Establishment of the National Health Service of Ukraine" ("Про утворення Національної служби здоров'я України"). [<https://zakon.rada.gov.ua/laws/show/1101-2017-п#Text>]. Accessed 11 February 2021.
- [7] National Health Service of Ukraine. "Statistics on the Entry of Electronic Health Records into the eHealth System (Статистика ведення електронних медичних записів в ЕСОЗ)". [<https://nszu.gov.ua/e-data/dashboard/emz-stats>]. Accessed 4 February 2021.
- [8] Liga News. 2020. "Online Medicine: When Will eHealth Start Working in Ukraine, and What is Preventing It? (Медицина в онлайні: Коли в Україні повноцінно запрацює eHealth, і що цьому заважає)". [<https://project.liga.net/projects/eHealth/>]. Accessed 4 February 2021.
- [9] Ukrainska pravda. 2020. "NHSU is Responsible for the Collapse of the Electronic Health System (НСЗУ відповідальна за колапс електронної системи охорони здоров'я)". [<https://blogs.pravda.com.ua/authors/badikov/5f16fb8a83d58/>]. Accessed 4 February 2021.
- [10] Ukrinform. 2020. "eHealth Will Not Lag Anymore, But Now It's Up To The State (eHealth зависати не буде, але тепер справа за державою)". [<https://www.ukrinform.ua/rubric-society/3096485-ehealth-zavisati-ne-bude-ale-teper-sprava-za-derzavou.html>]. Accessed 4 February 2021.
- [11] Ministry of Healthcare of Ukraine. 2021. "Maksym Stepanov: Ministry of Health is Developing Over 30 Digital Projects and Services (Максим Степанов: МОЗ розробляє понад 30 цифрових проєктів та сервісів)". [<https://moz.gov.ua/article/news/maksim-stepanov-moz-rozrobljae-ponad-30-cifrovih-proektiv-ta-servisiv>]. Accessed 4 February 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

Ukraine's public health system has access to the electronic health records (EHRs) of individuals in the country.

Ukraine's Ministry of Healthcare is the primary body responsible for formulating health policy, managing healthcare facilities throughout the country; the Constitution of Ukraine guarantees the public's access to medical care through the Ministry of Healthcare [1, 2]. The National Health Service of Ukraine (NHSU) was formed within the Ministry of Healthcare in 2017 and is a single payer agency that is responsible for allocating state funds to public and private medical institutions [3]. The NHSU

also oversees the national e-health system, which is accessible to patients and healthcare institutions throughout the country [4].

The Law on "Matters Pertaining to the Electronic Health System," adopted in 2018 and amended in 2020, states that the NHSU is the owner of all data contained in the central database of the system and is responsible for ensuring their integrity and completeness [4]. The NHSU regularly cross-checks EHRs with records maintained by the Ministry of Justice of Ukraine and removes data pertaining to deceased patients in addition to updating patient information to reflect name changes and other legal updates.[4, 5]. As per Article 23 of the Law on "Matters Pertaining to the Electronic Health System," the NHSU may also access EHRs "for the purposes of confirming a medical diagnosis, facilitating the provision of medical care or treatment, or facilitating the operation of the electronic health system" [4].

As of January 2021, the NHSU's e-health adoption dashboard reported that 132 million electronic health records had been created in the system for 14.9 million patients, thereby encompassing every region of the country [6]. All medical institutions that have signed contracts with the NHSU in order to receive state medical benefits,"which in 2019 amounted to 98% of primary health care facilities and are required to utilize the e-health system to create EHRs [7, 8].

De-identified aggregate health data from the e-health system are also available on the website of the NHSU [9].

[1] Verkhovna rada. 2020. "Constitution of Ukraine" ("Конституція України").

[<https://zakon.rada.gov.ua/laws/show/254к/96-вр#text>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 1992. "Foundations of Ukraine's Healthcare Legislation (Основи законодавства України про охорону здоров'я)". [<https://zakon.rada.gov.ua/laws/show/2801-12#Text>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2017. "On the Establishment of the National Health Service of Ukraine" ("Про утворення Національної служби здоров'я України"). [<https://zakon.rada.gov.ua/laws/show/1101-2017-п#Text>]. Accessed 11 February 2021.

[4] Cabinet of Ministers of Ukraine. 2020. "Matters of the Electronic Health System (Деякі питання електронної системи охорони здоров'я)". [<https://zakon.rada.gov.ua/laws/show/411-2018-п#n19>]. Accessed 4 February 2021.

[5] National Health Service of Ukraine. "Data Verification to Enable the Proper Disbursal of State Funds (Верифікація даних для цільового використання державних коштів)". [<https://nszu.gov.ua/novini/verifikaciya-danih-dlya-cilovogo-vikoristannya-derzhavnih-ko-35>]. Accessed 28 February 2021.

[6] National Health Service of Ukraine. "Statistics on the Entry of Electronic Health Records into the eHealth System (Статистика ведення електронних медичних записів в ЕСОЗ)". [<https://nszu.gov.ua/e-data/dashboard/emz-stats>]. Accessed 4 February 2021.

[7] National Health Service of Ukraine. 2020. "NHS: Over 500,000 eHealth Records are Entered into the eHealth System Daily (Понад 500 000 е-медичних записів створюється в ЕСОЗ щоденно, – НСЗУ)". [<https://www.kmu.gov.ua/news/ponad-500-000-e-medichnih-zapisiv-stvoryuyetsya-v-esoz-shchodenna-nszu>]. Accessed 4 February 2021.

[8] World Health Organization (WHO). 2019. "WHO Support for Health System Development in Ukraine". [https://www.euro.who.int/__data/assets/pdf_file/0006/413925/WHO_Health-Systems_support_Ukraine.pdf]. Accessed 4 February 2021.

[9] National Health Service of Ukraine. "Analytical Panels (Dashboards) (Аналітичні панелі (Дашборди))". [<https://nszu.gov.ua/e-data/dashboard>]. Accessed 4 February 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

Ukraine has data standards in place to ensure that data is comparable.

As of April 2018, the data center housing the central database of Ukraine's e-health system "fully conforms to the international (ISO 27001:2013 Certificate No.IND 17.0398/U) and Ukrainian standards (Compliance Certificate No.14162 dated July 22, 2016, issued by the State Service for Special Communications and Information Protection of Ukraine)" [1].

[1] Ministry of Healthcare of Ukraine. 2018. "MoH Ensures Privacy, Security, and Confidentiality of eHealth records". [<https://en.moz.gov.ua/article/news/moh-ensures-privacy-security-and-confidentiality-of-ehealth-data->]. Accessed 4 February 2021.

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

2.4.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of a mechanism for inter-ministerial sharing of data on animal, human, and wildlife surveillance.

There is no evidence of such a mechanism on the websites of the Ministry of Ecology and Natural Resources, the Ministry of Agrarian Policy and Food, or the Ministry of Healthcare [1, 2, 3].

In 2011, the Electronic Integrated Disease Surveillance System (EIDSS) was introduced in Ukraine as a part of the U.S. Department of Defense-funded Biological Threat Reduction Program (BTRP). The EIDSS is a software system that "collects and distributes data [and] notifies on events in near real-time." The EIDSS was originally introduced at seven locations at the national and regional levels [4]. In 2017, the Ministry of Healthcare ramped up efforts to introduce the EIDSS in more locations across the country [5].

The EIDSS is currently being used in Ukraine to provide centralized access to COVID-19 surveillance data, as mandated by the Ministry of Healthcare of Ukraine [6]. The EIDSS is a software system that "collects and distributes data [and] notifies on events in near real-time" [5]. Among the stated goals of the transition to electronic COVID-19 surveillance were to "provide a single information repository for medical information" and to "provide for the quick and reliable exchange of patient data in an electronic format" [7].

However, there is no evidence on the websites of the Ministry of Ecology and Natural Resources, the Ministry of Agrarian Policy and Food, or the Ministry of Healthcare that this is applicable to other surveillance activities, nor is there information on these websites about what diseases were monitored in EIDSS prior to 2020 [1, 2, 3].

[1] Ministry of Ecology and Natural Resources of Ukraine. [<https://menr.gov.ua/>]. Accessed 4 February 2021.

[2] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[4] United States Department of State. "Electronic Integrated Disease Surveillance System (EIDSS)".

[<https://photos.state.gov/libraries/ukraine/895/pdf/dtro-eidss.pdf>]. Accessed 4 February 2021.

[5] Government of Ukraine. 2017. "Ukraine Introduces Electronic System to Conduct Infectious Disease Surveillance (В Україні впроваджують електронну систему спостереження за інфекційними захворюваннями)".

[<https://www.kmu.gov.ua/news/249814276>]. Accessed 4 February 2021.

[6] Ministry of Healthcare of Ukraine. 2020. Order on the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 Outbreak in Ukraine (Наказ Деякі питання епідеміологічного нагляду (спостереження) за поширенням на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)".

[<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[7] Ministry of Healthcare of Ukraine. 2020. "Notification on the Publication of the Decree of the Ministry of Healthcare of Ukraine 'On Matters Pertaining to the Epidemiological Surveillance of the SARS-CoV-2/COVID-19 outbreak in Ukraine' (ПОВІДОМЛЕННЯ про оприлюднення проекту наказу Міністерства охорони здоров'я України 'Деякі питання епідеміологічного нагляду (спостереження) за поширенням на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2')". [<https://www.apteka.ua/article/574059>]. Accessed 4 February 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: 1

Ukraine makes de-identified health surveillance data on disease outbreaks publicly available on government websites.

The Center for Public Health publishes monthly bulletins containing infectious disease surveillance data and has done so since December 2017. The monthly bulletin contains data on over 63 infectious diseases, including, for example, cholera, tularemia, anthrax, brucellosis, diphtheria, syphilis, influenza, Lyme disease, and malaria [1].

In addition, the Center for Influenza and Acute Viral Respiratory Infections of the Center for Public Health of Ukraine has published weekly de-identified influenza surveillance data on its website since the beginning of 2019 [2].

Furthermore, the Ministry of Healthcare maintains a dashboard, refreshed every two hours, of national and sub-national COVID-19 surveillance data [3].

[1] Center for Public Health of Ukraine. "Infectious Disease Rates Among the Ukrainian Population".

[<https://phc.org.ua/kontrol-zakhvoryuvan/inshi-infekciyni-zakhvoryuvannya/monitoring-i-ocinka/infekciyna-zakhvoryuvanist-naselennya-ukraini>]. Accessed 4 February 2021.

[2] Center for Public Health of Ukraine. "Influenza and Upper Respiratory Disease Infectious Rate in Ukraine".

[<https://phc.org.ua/kontrol-zakhvoryuvan/inshi-infekciyni-zakhvoryuvannya/monitoring-i-ocinka/zakhvoryuvanist-na-grip-ta-grvi-v-ukraini>]. Accessed 4 February 2021.

[3] National Health Service of Ukraine. "Analytical Panels (Dashboards)". [<https://nszu.gov.ua/e-data/dashboard>]. Accessed 4 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

Ukraine makes de-identified COVID-19 surveillance data on disease outbreaks publicly available on government websites.

The Ministry of Healthcare maintains a dashboard on the website <https://covid19.gov.ua> refreshed every two hours, of national and sub-national COVID-19 surveillance data. The dashboard includes data such as new and total COVID-19 case counts, mortality rates, and healthcare system capacity [1]. A separate dashboard is also available on the website of the Center for Public Health of Ukraine; it is unclear whether this dashboard pulls from the same data source as the one maintained by the Ministry of Healthcare [2].

[1] Ministry of Healthcare of Ukraine. 2021. "Analytic Panels and Open Data (Аналітичні панелі та відкриті дані)". [<https://covid19.gov.ua/analitichni-paneli-dashbordy>]. Accessed 4 February 2021.

[2] National Health Service of Ukraine. "Operational Monitoring of the COVID-19 Situation (Оперативний моніторинг ситуації довкола COVID-19)". [<https://nszu.gov.ua/e-data/dashboard>]. Accessed 4 February 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 safeguarding the confidentiality of identifiable health information for individuals.

According to Ukraine's law "On the Protection of Personal Data" (adopted 2010, last updated in 2020), the processing of personal health data is prohibited unless: 1) the subject of the data has given explicit consent for these data to be processed; 2) the data must be processed to provide for the subject's labor rights; 3) the data are critical to the protection of the subject's well-being; 4) the data are needed to substantiate religious, political, or labor protections; 5) the data are necessary for the substantiation, satisfaction or protection of a legal claim; 6) the data are necessary for the provision of healthcare; 7) the data subject is being investigated for terrorism or espionage; or 8) the data have been released by the subject him/herself [1].

Similarly, Article 286 of the Civil Code, adopted in 2003 and last updated in January 2021, enshrines individuals' right to secrecy about their health, specifying that individuals have the right to keep any detail of their health secret, including diagnoses and even the simple fact they have sought medical treatment [2].

In April 2020, the Law "On Protection of the Population from Infectious Diseases" (adopted 2000) was updated to stipulate that personal health data needed to support COVID-19 prevention efforts could be processed without the consent of the subject during the quarantine period and for 30 days thereafter [3]. This law does not contain other provisions on the protection of identifiable health information [3, 4].

- [1] Verkhovna Rada. "On the Protection of Personal Data" ("Про захист персональних даних"). [https://zakon.rada.gov.ua/laws/show/2297-17#Text]. Accessed 4 February 2021.
- [2] Verkhovna Rada. 2021. "Civil Code of Ukraine.(Цивільний кодекс України)". [http://zakon4.rada.gov.ua/laws/show/435-15]. Accessed 4 February 2021.
- [3] Verkhovna Rada. 2020. "On Changes to the Law of Ukraine 'On Protection of the Population from Infectious Diseases' Pertaining to Measures to Control the Spread of Coronavirus (COVID-19) (Про внесення змін до Закону України 'Про захист населення від інфекційних хвороб щодо запобігання поширенню коронавірусної хвороби (COVID-19))". [https://zakon.rada.gov.ua/laws/show/555-20#Text]. Accessed 11 February 2021.
- [4] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [https://zakon.rada.gov.ua/laws/show/]. Accessed 4 February 2021.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 0

The legislation safeguarding the confidentiality of identifiable health information for individuals makes no mention of cyber attacks.

According to Ukraine's law "On the Protection of Personal Data," adopted in 2010 and updated in 2020, the processing of personal health data is prohibited unless: 1) the subject of the data has given explicit consent for these data to be processed; 2) the data must be processed to provide for the subject's labor rights; 3) the data are critical to the protection of the subject's well-being; 4) the data are needed to substantiate religious, political, or labor protections; 5) the data are necessary for the substantiation, satisfaction or protection of a legal claim; 6) the data are necessary for the provision of healthcare; 7) the data subject is being investigated for terrorism or espionage; or 8) the data have been released by the subject him/herself [1]. This law does not contain any provisions on cybersecurity, while it does state that individuals have the right to protection from "accidental loss, destruction, or harm caused as a result of purposeful disclosure" of personal data [1].

Similarly, Article 286 of the Civil Code, adopted in 2003 and updated in January 2021, enshrines individuals' right to secrecy about their health, specifying that individuals have the right to keep any detail of their health secret, including diagnoses and even the simple fact they have sought medical treatment [2]. However, the Civil Code also does not mention cyber attacks [2]. No further information regarding the protection of identifiable health information from cyber attacks could be found on the website of the Ministry of Health or Center for Public Health [3, 4].

- [1] Verkhovna Rada. 2010. "On the Protection of Personal Data (Про захист персональних даних)". [https://zakon.rada.gov.ua/laws/show/]. Accessed 4 February 2021.
- [2] Verkhovna Rada. 2003. "Civil Code of Ukraine. (Цивільний кодекс України.) [http://zakon4.rada.gov.ua/laws/show/435-15]. Accessed 4 February 2021.
- [3] Ministry of Healthcare of Ukraine. [http://moz.gov.ua]. Accessed 4 February 2021.
- [4] Center for Public Health. [http://phc.org.ua]. Accessed 11 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: 0

There is no evidence of legislation, agreements or public statements committing Ukraine to share surveillance data on any diseases with other countries in its region during a public health emergency.

There is no record of any such legislation, agreements, or statements on the websites of the Ministry of Healthcare, the State Emergency Service, or in the State Emergency Response Plan [1, 2, 3]. The law "On Protection of the Population From Infectious Diseases" (adopted 2000 and updated 2020) also does not contain any provisions about data sharing with other countries in the region [4].

No commitments to share surveillance data on COVID-19 could be found on the websites of the Ministry of Healthcare or Ministry of Foreign Affairs. Ukraine reports COVID-19 surveillance data to the World Health Organization (WHO) on a daily basis, which is used in the WHO's Ukraine COVID-19 dashboard [5].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[2] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[4] Verkhovna Rada. 2000. "On Protection of the Population From Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[5] World Health Organization (WHO). 2021. "Ukraine: WHO Coronavirus Disease (COVID-19) Dashboard". [<https://covid19.who.int/region/euro/country/ua>]. Accessed 4 February 2021.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no evidence of a system in Ukraine to provide support at the sub-national level (e.g., training, metrics standardization, and/or financial resources) to conduct contact tracing in the event of an active or future public health emergency.

Article 22 of the law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last updated in May 2020, establishes that during an infectious disease outbreak, individuals who have been exposed to the disease are subject to medical observation and testing. Article 35 of this law, which was added in April 2020, states that individuals who have been exposed to someone with a confirmed case of COVID-19 must undergo testing. The law does not specify how these individuals are to be identified [1]. It also does not apply for diseases other than COVID-19 [1].

The Ministry of Healthcare's standards of care for COVID-19 provide extensive guidance on how to establish someone as a contact and how such individuals should be treated; however, the process and logistics of contact tracing itself are not addressed [2].

There is no evidence on the website of the Ministry of Healthcare or the Center for Public Health of a coordinated contact tracing effort in Ukraine or a system to provide support for this at the sub-national level [3, 4]. In April 2020, the Ministry of Healthcare introduced an application called "Act at Home" to monitor individuals undergoing self-isolation [5]. In December 2020, the application was updated to include a contact notification function, although details on how this function works are not available online [6]. In January 2021 a Ukrainian lawmaker commented that the country's contact tracing strategy is "a failure...tracing isn't happening" [7].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2020. "Standards of Medical Care for Coronavirus Disease (COVID-19) (СТАНДАРТИ МЕДИЧНОЇ ДОПОМОГИ 'КОРОНАВІРУСНА ХВОРОБА (COVID-19))". [https://moz.gov.ua/uploads/3/19713-standarti_med_dopomogi_covid_19.pdf]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] Center for Public Health of Ukraine. [<https://www.phc.org.ua>]. Accessed 4 February 2021.

[5] Government of Ukraine. 2020. "How the App 'Act at Home' Works (Як працює застосунок 'Дій вдома')". [<https://www.kmu.gov.ua/news/yak-pracyuye-zastosunok-dij-vdoma>]. Accessed 4 February 2021.

[6] TSN. 2020. "The Self-isolation App 'Act at Home' Has Been Updated: What's New (Оновлено застосунок для контролю самоізоляції 'Дій вдома': що змінилося)". [<https://coronavirus.tsn.ua/onovleno-zastosunok-dlya-kontrolyu-samoizolyaciyi-diy-vdoma-scho-zminilosya-1679692.html>]. Accessed 11 February 2021.

[7] RadioFreeEurope/RadioLiberty. 2021. "Ukraine's Health-Care System, Economy Struggle To Cope With COVID-19". [<https://www.rferl.org/a/ukraine-covid-health-care-system-economy-struggle-cope/31030635.html>]. Accessed 4 February 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

Ukraine provides nationwide economic support to enable infected people and their contacts to self-isolate or quarantine as recommended, but there is no evidence of medical wraparound services.

The law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last updated in May 2020, states that individuals required to undergo self-isolation (the criteria for which vary based on the specific disease outbreak) are entitled to paid sick leave for the duration of the self-isolation [1]. This law is applicable to all infectious disease outbreaks,

but does not address medical attention for individuals in self-isolation [1]. There is no evidence on the website of the Ministry of Healthcare or Center for Public Health of Ukraine of a plan to provide medical attention for individuals in self-isolation that covers more than one disease [2, 3].

However, both economic support and medical attention are available for individuals required to undergo self-isolation due to COVID-19. The law "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine" contains comprehensive guidance for self-isolation [4]. According to this law, the following groups are subject to mandatory self-isolation: 1) individuals with confirmed or suspected COVID-19 cases and those with whom they have had contact; 2) individuals arriving from foreign countries; 3) individuals arriving from "areas under temporary occupation" in Ukraine [2]. In November 2020, the Ministry of Social Policy of Ukraine introduced a program enabling workers to receive compensation if they are required to undergo self-isolation after being exposed to COVID-19. To receive this compensation, workers must first receive a certificate from a family doctor, which must then be presented to their employer, who then receives payment from the Ministry of Social Policy and passes it on to the worker [5]. The quarantine law also states that individuals undergoing self-isolation have the right to seek medical attention [4]. Those in self-isolation must download the mobile application "At Home," which has a feature that allows users to request emergency medical attention [4, 6].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<https://moz.gov.ua>]. Accessed 23 February 2021.

[3] Center for Public Health of Ukraine. [<https://www.phc.org.ua/>]. Accessed 23 February 2021.

[4] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [<https://zakon.rada.gov.ua/laws/show/1236-2020-п#Text>]. Accessed 4 February 2021.

[5] Social Insurance Fund of Ukraine. 2020. "Government Provides Financial Assistance to Citizens Infected with COVID-19 or Undergoing Self-isolation (Уряд забезпечує фінансову підтримку громадянам у разі захворювання на COVID-19 та під час самоізоляції)". [<https://www.kmu.gov.ua/news/uryad-zabezpechuye-finansovu-pidtrimku-gromadyanam-u-razi-zahvoryuvannya-na-covid-19-ta-pid-chas-samoizolyacii>]. Accessed 4 February 2021.

[6] Ministry of Digital Transformation of Ukraine. "Vdoma (Вдома)". Google Play Store.

[<https://play.google.com/store/apps/details?id=ua.gov.diia.quarantine>]. Accessed 4 February 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

Ukraine does not make available de-identified data on contact tracing efforts for COVID-19.

The Ministry of Healthcare of Ukraine maintains a dashboard, updated every two hours, containing data about total and new case counts, healthcare system capacity, and mortality rates [1]. The National Health Service of Ukraine also has a publicly available COVID-19 dashboard [2]. However, neither of these dashboards contain information about contact tracing efforts,

nor is this information available on the websites of the Ministry of Healthcare or the National Health Service of Ukraine [3, 4].

[1] Ministry of Healthcare of Ukraine. 2021. "Analytic Panels and Open Data (Аналітичні панелі та відкриті дані)".

[<https://covid19.gov.ua/analitichni-paneli-dashbordj>]. Accessed 4 February 2021.

[2] National Health Service of Ukraine. "Operational Monitoring of the COVID-19 Situation (Оперативний моніторинг ситуації довкола COVID-19)". [<https://nszu.gov.ua/e-data/dashboard>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] Center for Public Health of Ukraine. [<https://www.phc.org.ua>]. Accessed 4 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 an agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of an active or future public health emergency.

No information regarding contact tracing for international travelers could be found on the websites of the Ministry of Healthcare, Center for Public Health of Ukraine, or State Border Guard Service [1, 2, 3].

However, during the COVID-19 outbreak, international travelers (Ukrainian citizens and foreign nationals) are required to undergo a 14-day-long period of self-isolation upon arrival in the country, which is enforced with the state-sponsored "At Home" mobile application, operated by the Ministry of Digital Transformation of Ukraine [4]. In December 2020, the application was updated to include a contact notification function, although details on how this function works are not available online [5].

The law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last updated in 2020, also states that individuals with symptoms of an infectious disease are subject to a medical inspection before being admitted into the country, but no information is provided about contact tracing for these individuals [6].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[2] State Border Guard Service of Ukraine. [<https://dpsu.gov.ua/ua/>]. Accessed 4 February 2021.

[3] Center for Public Health of Ukraine. [<http://phc.org.ua>]. Accessed 11 February 2021.

[4] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [<https://zakon.rada.gov.ua/laws/show/1236-2020-p#Text>]. Accessed 4 February 2021.

[5] TSN. 2020. "The 'Act at Home' app Has Been Updated: What Has Changed" ("Оновлено застосунок для контролю самоізоляції 'Дій вдома': що змінилося Більше читайте тут: <https://coronavirus.tsn.ua/onovleno-zastosunok-dlya->

kontrolyu-samoizolyaciyi-diy-vdoma-scho-zminilosya-1679692.html)". [<https://coronavirus.tsn.ua/onovleno-zastosunok-dlya-kontrolyu-samoizolyaciyi-diy-vdoma-scho-zminilosya-1679692.html>]. Accessed 4 February 2021.

[6] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 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 is available in-country and the state has also sent citizens abroad for such training.

In May 2018, the first stage of Ukraine's first two-year field epidemiology training program (FETP) began, preparing 200 relevant specialists in a program supported by the United States Centers for Disease Control and Prevention (CDC), the United States Department of Defence, the Global Fund to Fight AIDS, tuberculosis, and malaria, and the World Health Organization (WHO) [1].

The program is now known in Ukraine as the "Interventional Epidemiological Service (IES)" and is administered primarily by the Center for Public Health of Ukraine [2]. The website of the Center for Public Health states that epidemiologists, public health laboratory employees, general practitioners, and employees of the State Service on Food Safety and Consumer Protection are eligible to apply for IES. IES residents study disease outbreaks, undergo training in epidemiology, and conduct fieldwork [2]. The first cohort of IES residents graduated in November 2020, having investigated the outbreaks of infectious diseases including COVID-19, anthrax, salmonella, and tularemia; they also conducted a study of the prevalence of tick-borne encephalitis [3].

In 2016, the Eastern Mediterranean Public Health Network (EMPHNET) conducted training for rapid response teams in Ukraine [4].

In 2017, participants from Ukraine attended EMPHNET's training on chemical, biological, radiological, and nuclear threats at the Institute of Public Health in Belgrade, Serbia [5].

TEPHINET reports that Ukraine has sent people to participate in the South Caucasus Field Epidemiology and Laboratory Training Program in Tbilisi, Georgia (a program that was funded by the Defense Threat Reduction Agency 2009-2017, then by the Georgian government and Tbilisi State Medical University thereafter) [6]. However, it is unclear if the state paid for participation in this program [6].

- [1] Ministry of Healthcare of Ukraine. 2018. "Training Program on Field Epidemiology Has Begun for the First Time in Ukraine (Вперше в Україні розпочато Програму підготовки з польової епідеміології)". [<https://phc.org.ua/news/show/vpershe-v-ukrajini-rozpochato-programu-pidgotovki-z-polovoji-epidemiologii>]. Accessed 4 February 2021.
- [2] Center for Public Health of Ukraine. "Interventional Epidemiological Service (Інтервенційна епідеміологічна служба)". [<https://phc.org.ua/pro-centr/intervenciyna-epidemiologichna-sluzhba>]. Accessed 11 February 2021.
- [3] Embassy of the United States in Ukraine. 2020. "First Cohort of Interventional Epidemiological Service (Field Epidemiology Training Program) arrives in Kyiv (Випуск 1-ї когорти резидентів програми Інтервенційної епідеміологічної служби (програми підготовки польових епідеміологів) відбувся в Києві)". [<https://ua.usembassy.gov/uk/graduation-of-the-1st-cohort-of-fetp-residents/>]. Accessed 11 February 2021.
- [4] Eastern Mediterranean Public Health Network. 2016. "EMPHNET Conducts Rapid Response Teams Training in Ukraine". [<http://emphnet.net/?news=emphnet-conducts-rapid-response-teams-training-in-ukraine>]. Accessed 4 February 2021.
- [5] Eastern Mediterranean Public Health Network. 2017. "GHD/EMPHNET Co-Facilitates MediPIET's Training on Chemical, Biological, Radiological and Nuclear Threats". [<http://emphnet.net/en/media-center/news/2017/ghd-emphnet-co-facilitates-medi-piet-s-training-on-chemical-biological-radiological-and-nuclear-threats/>]. Accessed 4 February 2021.
- [6] Training Programme in Epidemiology and Public Health Interventions Network. "South Caucasus Field Epidemiology and Laboratory Training Program". [<https://www.tephinet.org/training-programs/south-caucasus-field-epidemiology-and-laboratory-training-program>]. Accessed 23 February 2021.

2.6.1b

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

Yes = 1, No = 0

Current Year Score: 1

There are field epidemiological training programs (FETPS) that include animal health professionals.

Ukraine's Interventional Epidemiological Service (IES), the country's first two-year field epidemiological training program, which started in May 2018 and graduated its first cohort in November 2020, is open to animal health professionals and includes elements pertaining to animal diseases, particularly zoonotic diseases [1, 2, 3]. The website of the Center for Public Health states that employees of the State Service on Food Safety and Consumer Protection (which implements policies in the area of veterinary medicine) are eligible to apply for IES [4].

In 2016, the Eastern Mediterranean Public Health Network (EMPHNET) conducted training for Ukrainian rapid response teams, hosted at the Institute of Veterinary Medicine at Ukraine's National Academy of Agrarian Sciences and including veterinarians, among others [5].

The South Caucasus Field Epidemiology and Laboratory Training Program, in which Ukrainians have participated, is open to veterinarians [6].

[1] Ministry of Agrarian Policy and Food of Ukraine. 2017. "Specialists of the Derzhproddzhizhiv service will participate in field epidemiology training with the support of the Unites States (Фахівці Держпродспоживслужби візьмуть участь у тренінгах з польової епідеміології за підтримки США)". [<https://agro.me.gov.ua/ua/news/fakhivtsi-derzhprodspozhivsluzhbi-vizmut-uchast-u-treningakh-z-polovoji-epidemiologii-za-pidtrimki-ssha>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2018. "Training Program on Field Epidemiology has Begun for the First Time in Ukraine. (Вперше в Україні розпочато Програму підготовки з польової епідеміології)". [<https://phc.org.ua/news/show/vpershe-v-ukrajini-rozpochato-programu-pidgotovki-z-polovoji-epidemiologii>]. Accessed 4 February 2021.

[3] U.S. Embassy in Ukraine. 2020. "Graduation of the First Cohort of Residents of the Interventional Epidemiological Service (field epidemiology training program) happened in Kyiv (Випуск 1-ї когорти резидентів програми Інтервенційної епідеміологічної служби (програми підготовки польових епідеміологів) відбувся в Києві)".

[<https://ua.usembassy.gov/uk/graduation-of-the-1st-cohort-of-fetp-residents/>]. Accessed 4 February 2021.

[4] Center for Public Health of Ukraine. "Interventional Epidemiological Service (ІНТЕРВЕНЦІЙНА ЕПІДЕМІОЛОГІЧНА СЛУЖБА)". [<https://phc.org.ua/pro-centr/intervenciynna-epidemiologichna-sluzhba>]. Accessed 4 February 2021.

[5] Institute of Veterinary Medicine. 2016. "Training for National Rapid Response Teams (Тренинг Для Национальных Команд Быстрого Реагирования)". [<http://ivm.kiev.ua/ru/novini-institutu-ru/trening-dlya-nacionalnyx-komand-bystrogo-reagirovaniya.html>]. Accessed 23 February 2021.

[6] TEPHINET. "South Caucasus Field Epidemiology and Laboratory Training Program." [<https://www.tephinet.org/training-programs/south-caucasus-field-epidemiology-and-laboratory-training-program>]. Accessed 23 February 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: 1

Ukraine has disease-specific emergency response plans, but there is no evidence of an overarching plan.

Ukraine's law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last modified in May 2020, discusses general provisions for controlling the spread of infectious diseases, including self-isolation requirements,

quarantine procedures, the list of mandatory vaccinations, etc. However, emergency response is not explicitly discussed in this document, nor is there any reference to the country's emergency management agency (the State Emergency Service) or other institutions that might be expected to participate in emergency response (e.g., the National Police, Ministry of Defense, or National Guard of Ukraine) [1].

Ukraine also has a "State Emergency Response Plan," adopted in 2018 and last updated in September 2020, which covers all manner of emergencies, including health emergencies such as pandemics alongside natural disasters and nuclear explosions. However, it does not contain detailed specific provisions related to pandemics, but rather addresses general issues about how the state will function during an emergency [2]. The Plan does not define "emergency" or otherwise clearly delineate the situations to which it pertains, but "pandemics" are included in a short list of examples of especially serious emergencies to which the Ministry of Defense must respond [2]. Moreover, Another clause mentions that the Ministry of Internal Affairs is responsible for ensuring quarantine zones around areas of bacteriological infection [2].

No further evidence regarding an overarching plan could be found on the websites of the Ministry of Healthcare or of the State Emergency Service [3, 4].

Ukraine does have disease-specific emergency response plans. For example, the law "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine," adopted December 2020 and updated in February 2021, contains comprehensive guidance for the country's COVID-19 response, including provisions for the enforcement of quarantine measures, lists of restricted recreational and economic activities, and descriptions of the roles of individual state institutions in responding to the outbreak [5].

In addition, in 2010, the Cabinet of Ministers of Ukraine published a comprehensive H1N1/swine flu response plan, which was put in place in October 2009 and ordered the distribution of rapid diagnostic tests, the creation of informational materials, and the re-allocation of hospital space for H1N1 patients, among other emergency measures [6].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[5] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [<https://zakon.rada.gov.ua/laws/show/1236-2020-п#Text>]. Accessed 4 February 2021.

[6] Cabinet of Ministers of Ukraine. 2010. "On Measures to Prevent the Spread of A/H1N1/California/04/09 Influenza and Upper Respiratory Infections Among the Population (Про запобігання поширенню грипу типу А/Н1Н1/Каліфорнія/04/09 і гострих респіраторних захворювань серед населення)". [<https://zakon.rada.gov.ua/laws/show/1152-2009-п#Text>]. Accessed 4 February 2021.

3.1.1b

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

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

Current Year Score: 0

There is no evidence of an overarching public health emergency preparedness and response plan which has been updated in the last 3 years.

Ukraine's law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last modified in May 2020, discusses general provisions for controlling the spread of infectious diseases, including self-isolation requirements, quarantine procedures, the list of mandatory vaccinations, etc. However, emergency response is not explicitly discussed in this document nor is there any reference to the country's emergency management agency (the State Emergency Service) or other institutions that might be expected to participate in emergency response (e.g., the National Police, Ministry of Defense, or National Guard of Ukraine) [1].

Ukraine also has a "State Emergency Response Plan," adopted in 2018 and last updated in September 2020, which covers all manner of emergencies, including health emergencies such as pandemics alongside natural disasters and nuclear explosions. However, it does not contain detailed specific provisions related to pandemics, but rather addresses general issues about how the state will function during an emergency [2]. The Plan does not define "emergency" or clearly delineate the situations to which it pertains, but "pandemics" are included in a short list of examples of especially serious emergencies to which the Ministry of Defense should respond [2]. Another clause mentions that the Ministry of Internal Affairs is responsible for ensuring quarantine zones around areas of bacteriological infection [2].

No further evidence regarding an overarching plan could be found on the websites of the Ministry of Healthcare or of the State Emergency Service [3, 4].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб). [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

3.1.1c

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

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

Current Year Score: 0

There is no evidence of an overarching public health emergency preparedness and response plan in Ukraine that includes considerations for pediatric or other vulnerable populations.

Ukraine's law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last modified in May 2020, discusses general provisions for controlling the spread of infectious diseases, including self-isolation requirements, quarantine procedures, the list of mandatory vaccinations, etc. However, emergency response is not explicitly discussed in this document, nor is there any reference to the country's emergency management agency (the State Emergency Service) or other institutions that might be expected to participate in emergency response (e.g., the National Police, Ministry of Defense, or National Guard of Ukraine) [1]. However, this law does discuss general measures to prevent the spread of infectious diseases in childcare facilities, including vaccination and hygiene education.

Ukraine also has a "State Emergency Response Plan," adopted in 2018 and last updated in September 2020, which covers all manner of emergencies, including health emergencies such as pandemics alongside natural disasters and nuclear explosions. However, it does not contain detailed specific provisions related to pandemics, but rather addresses general issues about how the state will function during an emergency [2]. The Plan does not define "emergency" or otherwise clearly delineate the situations to which it pertains, but "pandemics" are included in a short list of examples of especially serious emergencies to which the Ministry of Defense should respond [2]. Another clause mentions that the Ministry of Internal Affairs is responsible for ensuring quarantine zones around areas of bacteriological infection [2].

No further evidence regarding an overarching plan could be found on the websites of the Ministry of Healthcare or of the State Emergency Service [3, 4].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

3.1.1d

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

Yes = 1, No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1, No = 0

Current Year Score: 0

Ukraine does not have any specific mechanism(s) for engaging with the private sector to assist with outbreak emergency preparedness and response.

Article 20 of the Civil Defense Code, adopted in 2013 and updated in 2021, contains a detailed list of ways in which private enterprises might be required to assist during emergencies. This includes measures such as assessing risks to property, training employees, protecting employees and disseminating information [1]. However, the Civil Defense Code does not create a specific mechanism to facilitate this assistance [1]. Meanwhile, the State Emergency Response Plan makes no mention of engagement with the private sector [2].

There is no evidence of relevant mechanisms on the websites of the State Emergency Service or the Ministry of Healthcare [3, 4]. There is also no evidence of an overarching emergency response plan in the law "On protection of the population from infectious diseases," adopted in 2020 and last modified in May 2020, in the "State Emergency Response Plan," adopted in 2018 and last updated in September 2020, or on the websites of the State Emergency Service or Ministry of Healthcare [3, 4, 5, 6].

There is evidence of the private sector being engaged on an ad hoc basis to respond to the COVID-19 pandemic. For example, in October 2020, the Ministry of Healthcare announced that it planned to engage a number of private laboratories to increase the country's COVID-19 testing capacity [7]. During the same month, the Cabinet of Ministers of Ukraine allocated approximately 261 million hryvnya (US\$9.3m) to the Ministry of Healthcare, part of which was used to contract private laboratories and expand testing capacity [7, 8].

[1] Verkhovna Rada. 2013. "Civil Defense Code of Ukraine." ("Кодекс цивільного захисту України.")

[<http://zakon.rada.gov.ua/laws/show/5403-17>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan." ("План реагування на надзвичайні ситуації державного рівня.") Legislation of Ukraine. [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[5] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[6] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[7] Ministry of Healthcare of Ukraine. 2020. "Ministry of Healthcare Strengthens Domestic Laboratories in Order to Increase Daily Testing Capacity (МОЗ посилює потужності вітчизняних лабораторій задля збільшення кількості тестувань на добу)". [<https://moz.gov.ua/article/news/moz-posiljuje-potuzhnosti-vitchiznjanih-laboratorij-zadlja-zbilshennja-kilkosti-testuvan-na-dobu>]. Accessed 4 February 2021.

[8] Interfax Ukraine. 2020. "[Minister of Healthcare] Stepanov on the Engagement of Private Laboratories in COVID-19 Testing: 'We Will Send Them Samples' (Степанов про залучення приватних лабораторій до проведення тестування на COVID-19: Відвозитимемо їм зразки)". [<https://ua.interfax.com.ua/news/general/694293.html>]. Accessed 4 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

Ukraine has policies regarding the implementation of non-pharmaceutical interventions (NPIs) during an epidemic/pandemic and these policies are in place for more than one disease.

The law "On Protection of the Population from Infectious Diseases," adopted in 2000 and last updated in 2020, describes a number of NPIs. For example, it mentions that transportation into the country may be limited at the discretion of the Cabinet of Ministers of Ukraine to control the spread of an infectious disease [1]. In addition, the Cabinet of Ministers can

impose a local or nationwide quarantine and modify the operating procedures of businesses and organizations in the quarantine zone [1]. The law also discusses expanded cleaning procedures that may be mandated during the outbreak of an infectious disease [1].

Ukraine also has a comprehensive plan to implement NPIs during the COVID-19 outbreak. As of January 2021, NPIs addressed in this plan include a mask mandate for all public spaces, a requirement for certain individuals to self-isolate, restrictions on the number of attendees at public events, restrictions on operating hours for restaurants and cafés, and strict social distancing requirements for all public-facing establishments [2].

[1] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [<https://zakon.rada.gov.ua/laws/show/1236-2020-п#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 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

Ukraine has activated a national emergency response plan for an infectious disease outbreak in the past year, but there is no evidence that it has completed a national-level biological threat-focused exercise.

Ukraine has developed an emergency response plan in response to the COVID-19 outbreak. The decree "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine" was originally introduced in mid-March 2020; the current version was introduced in December 2020 and last updated in April 2021 [1, 2]. The decree established a nationwide quarantine, travel restrictions, and other measures to control the spread of COVID-19 [1, 2].

The World Health Organization reports that a Simulation Exercise was planned to take place in Ukraine in September 2020, but it does not appear to have been conducted [3].

There is no evidence on the website of the Ministry of Healthcare or the State Emergency Service that Ukraine has

completed a national-level biological threat-focused exercise in the past year [4, 5]. The Fiscal Year 2021 budget report for the United States Department of Defense's Defense Threat Reduction Agency states that Fiscal Year 2019 funds executed over three years will "[c]ontinue training, tabletop, and field exercises and begin transitioning to a train-the-trainer approach to enhance nuclear security in Ukraine." However, there is no evidence of any biological threat-focused exercises that have recently taken place as part of this program [6].

[1] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)".

[<https://zakon.rada.gov.ua/laws/show/1236-2020-п#Text>]. Accessed 2 May 2021.

[2] Cabinet of Ministers of Ukraine. 2020. "On Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)". [<https://zakon.rada.gov.ua/laws/show/211-2020-%D0%BF#Text>]. Accessed 2 May 2021.

[3] World Health Organization. 2021. "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise?region=All&country=196>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[6] Defense Threat Reduction Agency of the United States of America. 2019. "Fiscal Year (FY) 2020 President's Budget Operation and Maintenance, Defense-Wide Cooperative Threat Reduction Program". [https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2020/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PART_2/CTR_OP-5.pdf]. Accessed 4 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 Ukraine has identified a list of gaps and best practices in response in the past year. No evidence could be found on the World Health Organization's (WHO) country page for Ukraine, nor on the websites of the Ministry of Healthcare of Ukraine, the Ministry of Agrarian and Food Policy, or the State Emergency Service of Ukraine [1, 2, 3, 4]. The WHO's After Action Review portal does not indicate that there are any planned AAR activities in Ukraine [5].

[1] World Health Organization (WHO). "Ukraine". [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[3] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[4] Ministry of Agrarian and Food Policy of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 11 February 2021.

[5] World Health Organization (WHO). 2021. "After Action Review". [<https://extranet.who.int/sph/after-action-review>]. Accessed 4 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 Ukraine has completed a national-level biological threat-focused exercise that included private sector representatives in the past year.

The World Health Organization (WHO) reports that a Simulation Exercise was planned to take place in Ukraine in September 2020, but it does not appear to have been conducted [1].

Furthermore, there is no evidence on the WHO's country page for Ukraine nor on the websites of the Ministry of Healthcare, Ministry of Agrarian and Food Policy, or the State Emergency Service, that Ukraine has completed a national-level biological threat-focused exercise in the past year [2, 3, 4, 5]. The Fiscal Year 2021 budget report for the United States Department of Defense's Defense Threat Reduction Agency states that Fiscal Year 2019 funds executed over three years will "[c]ontinue training, tabletop, and field exercises and begin transitioning to a train-the-trainer approach to enhance nuclear security in Ukraine." However, there is no evidence of any biological threat-focused exercises that have recently taken place as part of this program [6].

[1] World Health Organization (WHO). 2021. "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise?region=All&country=196>]. Accessed 4 February 2021.

[2] World Health Organization (WHO). "Ukraine". [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[5] Ministry of Agrarian and Food Policy of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 11 February 2021.

[6] Defense Threat Reduction Agency of the United States of America. 2019. "Fiscal Year (FY) 2020 President's Budget Operation and Maintenance, Defense-Wide Cooperative Threat Reduction Program".

[https://comptroller.defense.gov/Portals/45/Documents/defbudget/fy2020/budget_justification/pdfs/01_Operation_and_Maintenance/O_M_VOL_1_PART_2/CTR_OP-5.pdf]. Accessed 4 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: 0

While regulations require the activation of a coordination centre in response to emergencies, there is no evidence of a permanent Emergency Operations Center in place.

The State Emergency Service of Ukraine (DSNS) is responsible for civil defense, disaster response and prevention, including rescue work, fire extinguishing and safety, accident rescue [1, 2].

Although they are not the DSNS's primary focus, public health emergencies unambiguously fall within the body's jurisdiction, as attested by article 4 of the Regulations on the State Emergency Service of Ukraine, last updated in 2018, which state that the DSNS is responsible for responding to any events that threaten the public's health and well-being [3].

In addition, according to Ukraine's "State Emergency Response Plan," adopted in 2018 and updated in 2020, in the case of an emergency, a Headquarters for the Elimination of the Effects of Emergency is to be formed, consisting of representatives of the DSNS, heads of emergency rescue services, relevant experts and representatives of relevant state institutions [4]. According to this law, the DSNS is also responsible for informing the population and the government about the actual or potential emergence of a threat to public safety [4].

As of November 2020, an Emergency Headquarters had been formed in Ukraine to combat COVID-19, comprising representatives from the DSNS, the Ministry of Healthcare, the Center for Public Health, the State Service of Food Safety and Consumer Protection, the Ministry of Internal Affairs and its subordinates, and the State Border Guard Service [5]. There is no evidence on the websites of these agencies that an Emergency Headquarters has been formed for other public health emergencies [1, 6, 7, 8, 9].

The DSNS has been active in Ukraine's efforts to combat the spread of COVID-19. For example, it has conducted inspections to assess government facilities' compliance with quarantine restrictions and social distancing requirements [10]. The DSNS is also responsible for conducting disinfection procedures in public places and on roads; the agency publishes regular updates on its website regarding its disinfection efforts across the country [11].

[1] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[2] State Emergency Service of Ukraine. "Tasks of the SESU." [<http://www.dsns.gov.ua/en/Diyalnist-sluzhbi.html>]. Accessed 4 February 2021.

[3] State Emergency Service of Ukraine. "Regulations on the State Emergency Service of Ukraine." ("Положення про Державну службу України з надзвичайних ситуацій.") [<https://zakon.rada.gov.ua/laws/show/1052-2015-%D0%BF>]. Accessed 10 November 2018.

[4] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[5] World Health Organization (WHO). 2020. "Ukraine: Decision Making for Social and Movement Measures in the Context of COVID-19". [https://www.who.int/docs/default-source/hgf/ukraine.pdf?sfvrsn=b78923d_9]. Accessed 4 February 2021.

[6] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 11 February 2021.

[7] Center for Public Health of Ukraine. [<http://phc.org.ua>]. Accessed 12 February 2021.

[8] State Service of Food Safety and Consumer Protection of Ukraine. [<http://dpss.gov.ua/>]. Accessed 12 February 2021.

[9] Ministry of Internal Affairs of Ukraine. [<https://mvs.gov.ua/en/>]. Accessed 12 February 2021.

[10] State Emergency Service of Ukraine. 2020. "Lugansk Region: Rescue Workers Called to Participate in Measures to Control the Spread of COVID-19 (Луганщина: рятувальники закликали службовців долучитися до профілактичних заходів щодо запобігання захворюваності на COVID-19)". [<https://www.dsns.gov.ua/ua/Ostanni-novini/114749.html>]. Accessed 4 February 2021.

[11] State Emergency Service of Ukraine. "Latest News (Останні новини)". [<https://www.dsns.gov.ua/ua/Ostanni-novini/>]. Accessed 4 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 State Emergency Service is required to conduct public health emergency drills at least once per year or that it conducts a drill once a year.

There is no evidence of such a requirement on the State Emergency Service's website, in the Civil Defense Code or in the "State Emergency Response Plan," adopted in 2018 and updated in 2020 [1, 2, 3].

However, the State Emergency Service is responsible for coordinating drills and trainings in accordance with the yearly schedule of civil defense-related activities, which is issued by the Cabinet of Ministers [4, 5]. The activities schedule for 2021 indicates that the State Emergency Service must coordinate an epidemic response exercise involving representatives of the Ministry of Healthcare and local officials by May of the same year [5]. The activities schedule for 2020 mandated that the agency coordinate a public health emergency response drill involving representatives from the Ministry of Healthcare, the State Emergency Service, and local officials by 15 December of the same year [6]. No documentation about the results of the 2020 or 2021 drills (if they took place) is publicly available on the websites of the State Emergency Service or of the Ministry of Healthcare [7, 8]. The requirement of an annual drill is also not explicitly stated anywhere.

[1] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 2012. "Civil Defense Code of Ukraine (Кодекс цивільного захисту України)". Legislation of Ukraine. [<http://zakon.rada.gov.ua/laws/show/5403-17>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[4] Cabinet of Ministers of Ukraine. 2013. "On Preparation of the Action Plans of the Responsible Bodies and Civil Defense Forces (Про затвердження Порядку підготовки до дій за призначенням органів управління та сил цивільного захисту)". [<https://zakon.rada.gov.ua/laws/show/443-2013-п#n9>]. Accessed 4 February 2021.

[5] Cabinet of Ministers of Ukraine. 2020. "On the Plan of the Main Civil Defense Activities for 2021 (Про затвердження плану основних заходів цивільного захисту на 2021 рік)". [<https://zakon.rada.gov.ua/laws/show/1659-2020-р#Text>]. Accessed 4 February 2021.

[6] Cabinet of Ministers of Ukraine. 2019. "On the Plan of the Main Civil Defense Activities for 2020 (Про затвердження плану основних заходів цивільного захисту на 2020 рік)". [<https://zakon.rada.gov.ua/laws/show/1316-2019-%D1%80#Text>]. Accessed 4 February 2021.

[7] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[8] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 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 evidence that Ukraine's State Emergency Service has conducted a coordinated emergency response or response exercise within 120 minutes of the identification of a public health emergency.

Ukraine has not conducted a Joint External Evaluation (JEE) [1].

Although the national civil defense activities schedule for 2020, published by the Cabinet of Ministers of Ukraine, mandated that the agency coordinate a public health emergency response drill involving representatives from the Ministry of Healthcare, the State Emergency Service, and local officials, documentation regarding this drill (if it took place) is not available on the websites of the State Emergency Service or of the Ministry of Healthcare [2, 3, 4].

The State Emergency Service has been engaged in Ukraine's COVID-19 prevention efforts; however, no information regarding response times is available on its website [4, 5].

[1] World Health Organization. "WHO European Region: JEE Mission Reports". [<https://www.who.int/ihr/procedures/mission-reports-europe/en/>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2019. "On the Plan of the Main Civil Defense Activities for 2020 (Про затвердження плану основних заходів цивільного захисту на 2020 рік)". [<https://zakon.rada.gov.ua/laws/show/1316-2019-%D1%80#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. "Latest News (Останні новини)". [<https://www.dsns.gov.ua/ua/Ostanni-novini/>]. Accessed 4 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: 0

There is no evidence of such a requirement on the State Emergency Service's website, in the Civil Defense Code or in the "State Emergency Response Plan," adopted in 2018 and updated in 2020 [1, 2, 3].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[2] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2019. "On the Plan of the Main Civil Defense Activities for 2020 (Про затвердження плану основних заходів цивільного захисту на 2020 рік)". [<https://zakon.rada.gov.ua/laws/show/1316-2019-%D1%80#Text>].

Accessed 4 February 2021.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

Ukraine does not have a risk communication plan covering health emergencies that outlines how messages will reach populations with different communication needs. A risk communication plan is included in the "State Emergency Response Plan," adopted in 2018 and updated in 2020, and in a decree titled "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense," adopted in 2017 and updated in 2020 [1, 2]. The plans specify how information about the risk of an emergency will be communicated between local, regional, and central state institutions as well as how information will be communicated to the general public [1]. They indicate that the State Emergency Service is responsible for coordinating risk communication efforts. Public health emergencies are not explicitly addressed in this plan; however, it is applicable to any situation that poses a threat to the health and well-being of the population [1]. While this risk communication plan states that special efforts must be made to ensure the flow of risk communications to individuals with physical, mental, intellectual or sensory impairments, it does not specify how this is to be handled [1]. Until 2017, a decree of the Cabinet of Ministers was in effect that stipulated that information about emergencies (including epidemics and epizootic disease outbreaks) was to be transmitted via television, radio, and outdoor warning sirens in Ukrainian and "in the language most widely used by the region's population" [3]. The new version of this decree, "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense," adopted in 2017 and last modified in 2020, makes no mention of languages other than Ukrainian and does not explicitly refer to epidemics or epizootic disease outbreaks [2]. No further evidence of a risk communication plan accounting for messaging to populations and sectors with different communications needs could be found on the websites of the Ministry of Health or the State Emergency Service [4, 5].

[1] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan." [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2017. "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense." [<https://zakon.rada.gov.ua/laws/show/733-2017-%D1%80%D0%B0%D0%B5%D0%BF#Text>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2017. "On the Coordination of Communications and Notification in Emergency Situations". [<https://zakon.rada.gov.ua/laws/show/192-99-%D1%80%D0%B0%D0%B5%D0%BF#Text>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 23 February 2021.

[5] State Emergency Service of Ukraine. [<https://www.dsns.gov.ua/>]. Accessed 23 February 2021.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1, No = 0

Current Year Score: 0

Ukraine has a risk communication plan in place, but it does not explicitly cover public health emergencies.

A risk communication plan is included in the 2018 "State Emergency Response Plan" and elaborated in a decree (adopted in 2017, last updated in 2020), titled "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense" [1, 2]. The plan specifies how information about the risk of an emergency will be communicated between local, regional, and central state institutions, as well as how information will be communicated to the general public [1]. This plan indicates that the State Emergency Service is responsible for coordinating risk communication efforts. Public health emergencies are not explicitly addressed in this plan; however, it is applicable to any situation that poses a threat to the health and well-being of the population [1].

Since March 2018 Ukraine, among other countries, has been benefiting from a World Health Organization (WHO) project to improve risk communication capacity, including by eventually drafting a new public health-related risk communication plan in accordance with a WHO template [3]. The WHO website does not mention a timeframe within which Ukraine is likely to adopt a new plan or give any details of what the plan might look like [3]. There is no evidence that this plan has been adopted as of 2021 on the websites of the WHO or the Ministry of Health [4, 5].

[1] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2017. "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense (Про затвердження Положення про організацію оповіщення про загрозу виникнення або виникнення надзвичайних ситуацій та зв'язку у сфері цивільного захисту)". [<https://zakon.rada.gov.ua/laws/show/733-2017-п#Text>]. Accessed 4 February 2021.

[3] World Health Organization. 2018. "WHO Launches Cutting-edge Package to Scale Up Risk Communication Capacity in the European Region in 5 Steps". [<http://www.euro.who.int/en/countries/ukraine/news/news/2018/09/who-launches-a-cutting-edge-package-to-scale-up-risk-communication-capacity-in-the-european-region-in-5-steps>"]. Accessed 4 February 2021.

[4] World Health Organization. [<http://www.euro.who.int/>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 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

Ukraine does not have a risk communication plan that designates a specific position within the government to serve as the primary spokesperson during a public health emergency. Ukraine's risk communication strategy, as outlined in its "State

Emergency Response Plan," adopted in 2018 and updated in 2020, and in a decree titled "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense," adopted in 2017 and updated in 2020, specifies that the State Emergency Service is responsible for coordinating communication efforts in the event of an emergency [1, 2]. However, while this strategy is applicable to public health emergencies, neither of these documents explicitly designates a primary spokesperson for these situations. The law "On protection of the population from infectious diseases," adopted in 2000 and updated in 2020, does not designate a specific government position or specify that a spokesperson should be selected during a public health emergency [3]. No further information could be found on the websites of the Ministry of Healthcare or State Emergency Service [4, 5].

[1] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2017. "On the Coordination of Communications about the Occurrence or Risk of Emergencies in the Field of Civil Defense. (Про затвердження Положення про організацію оповіщення про загрозу виникнення або виникнення надзвичайних ситуацій та зв'язку у сфері цивільного захисту)". [<https://zakon.rada.gov.ua/laws/show/733-2017-п#Text>]. Accessed 4 February 2021.

[3] Verkhovna Rada. 2000. "On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 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

The public health system in Ukraine actively shares messages via online platforms about ongoing public health concerns and to dispel misinformation.

The Ministry of Healthcare of Ukraine has a web portal that is updated on a daily basis and is also active on Facebook, Twitter, and Telegram, the latter of which is used primarily to share updates about COVID-19 [1, 2, 3]. The Ministry of Healthcare has used its web presence to dispel information; for example, in November 2020, it addressed a rumor that the government planned to introduce so-called "black zones" (i.e., areas under total lockdown) to control the spread of COVID-19, explaining that this was misinformation [4].

Previously, in February 2020, an announcement was sent from the official email address of the Ministry of Healthcare of Ukraine (info@moz.gov.ua) claiming that there were five confirmed cases of COVID-19 in Ukraine and that emergency committees were being formed in every region of the country [5]. However, the ministry denied sending out such a communication, claiming that this was an intentional act of disinformation and that the email address had been spoofed; it called upon Ukrainians to monitor official Ministry of Health channels for reliable information [6].

In December 2018, the Ministry of Healthcare published an article criticizing the campaign team of Yulia Tymoshenko (currently a member of the Ukrainian parliament and formerly the country's Prime Minister) for spreading misinformation about vaccines [7].

The Center for Public Health of the Ministry of Healthcare also maintains a web portal which is updated daily and it publishes near-daily updates on Facebook [8, 9].

- [1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.
- [2] Ministry of Healthcare of Ukraine (Facebook). [<https://www.facebook.com/moz.ukr>]. Accessed 4 February 2021.
- [3] Ministry of Healthcare of Ukraine (Twitter). [https://twitter.com/MoH_Ukraine]. Accessed 4 February 2021.
- [4] Ministry of Healthcare of Ukraine. 2020. "Maksym Stepanov: Information About the Introduction of 'Black Quarantine Zones' is Fake" (Максим Степанов: Інформація про введення 'чорних карантинних зон' — це фейк"). [<https://moz.gov.ua/article/news/maksim-stepanov-informacija-pro-vvedennja-chornih-karantinnih-zon---ce-fejk>]. Accessed 4 February 2021.
- [5] Liga Tech. 2020. "Fake Notice About the Discovery of Coronavirus in Ukraine Being Sent From the Email of the Ministry of Healthcare (С почты Минздрава рассылают поддельные письма о выявлении коронавируса в Украине)". [<https://tech.liga.net/technology/novosti/s-pochty-minzdrava-rassylayut-poddelnye-pisma-o-vyyavlenii-koronavirusa-v-ukraine>]. Accessed 4 February 2021.
- [6] Ministry of Healthcare of Ukraine. 2020. "There Are No Confirmed Cases of COVID-19 in Ukraine: MoH Anti-fake (В Україні немає підтверджених випадків коронавірусу COVID-19 – антифейк МОЗ)". [<https://moz.gov.ua/article/news/v-ukraini-nemaie-pidverdzenih-vipadkiv-koronavirusu-covid-19---antifejk-moz>]. Accessed 4 February 2021.
- [7] Ministry of Healthcare of Ukraine. 2018. "MoH Anti-fake on Vaccination: We Condemn Yulia Tymoshenko's Election Season Misinformation (Антифейк МОЗ України про вакцинацію: спростовуємо чергову передвборчу брехню Юлії Тимошенко)". [<https://moz.gov.ua/article/news/antifejk-moz-ukraini-pro-vakcinaciju-sprostovujemo-chergovu-peredvborchu-brehnju-julii-timoshenko>]. Accessed 4 February 2021.
- [8] Center for Public Health of Ukraine. [<http://phc.gov.ua>]. Accessed 4 February 2021.
- [9] Center for Public Health of Ukraine (Facebook). [<https://www.facebook.com/phc.org.ua>]. Accessed 4 February 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 Ukraine have shared misinformation about infectious diseases in the past two years.

No information regarding this could be found in Ukrainian or international news outlets [1, 2, 3].

However, in December 2018, the Ministry of Healthcare published an article criticizing the campaign team of Yulia Tymoshenko (currently a member of the Ukrainian parliament and formerly the country's Prime Minister) for spreading misinformation about vaccines [4].

In addition, in February 2020, an announcement was sent from the official email address of the Ministry of Healthcare of Ukraine (info@moz.gov.ua) claiming that there were five confirmed cases of COVID-19 in Ukraine and that emergency committees were being formed in every region of the country [5]. However, the ministry denied sending out such a

communication, claiming that this was an intentional act of disinformation and that the email address had been spoofed, and called upon Ukrainians to monitor official Ministry of Health channels for reliable information [6].

[1] TSN. [<http://tsn.ua>]. Accessed 4 February 2021.

[2] Liga News. [<http://liga.net>]. Accessed 4 February 2021.

[3] Hromadske. [<https://hromadske.ua>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. 2018. "MoH Anti-fake on Vaccination: We condemn Yulia Tymoshenko's Election Season Misinformation" ("Антифейк МОЗ України про вакцинацію: спростовуємо чергову передвиборчу брехню Юлії Тимошенко"). [<https://moz.gov.ua/article/news/antifejk-moz-ukraini-pro-vakcinaciju-sprostovuemo-chergovu-peredviborchu-brehnju-julii-timoshenko>]. Accessed 4 February 2021.

[5] Liga Tech. 2020. "Fake Notice About the Discovery of Coronavirus in Ukraine Being Sent from the Email of the Ministry of Healthcare (С почты Минздрава рассылают поддельные письма о выявлении коронавируса в Украине)". [<https://tech.liga.net/technology/novosti/s-pochty-minzdrava-rassylayut-poddelnye-pisma-o-vyyavlenii-koronavirusa-v-ukraine>]. Accessed 4 February 2021.

[6] Ministry of Healthcare of Ukraine. 2020. "There Are No Confirmed Cases of COVID-19 in Ukraine: MoH Anti-fake (В Україні немає підтверджених випадків коронавірусу COVID-19—антифейк МОЗ)". [<https://moz.gov.ua/article/news/v-ukraini-nemaie-pidverdzenih-vipadkiv-koronavirusu-covid-19---antifejk-moz>]. Accessed 4 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: 58.89

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: 130.63

2019

International Telecommunication Union (ITU)

3.6.3 Female access to a mobile phone

3.6.3a

Percentage point gap between males and females whose home has access to a mobile phone

Input number

Current Year Score: 0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 10.0

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

Ukraine has issued restrictions on the export of medical goods due to an infectious disease outbreak in the past year without international support.

On 11 March 2020, in response to the COVID-19 pandemic, Ukraine imposed a ban on the export of personal protective equipment (including gloves, medical masks, protective goggles and face shields, respirators, and protective gowns) through June 1, 2020 [1]. This restriction was subsequently extended through August 1 [2]. There is no evidence that this occurred with international/bilateral support.

[1] Government of Ukraine. 2020. "Government Temporarily Restricts Export of Goods Needed to Fight Epidemic (Уряд тимчасово обмежив експорт товарів протиепідемічного призначення)". [<https://www.kmu.gov.ua/news/uryad-timchasovo-obmezhev-eksport-tovariv-protiepidemichnogo-priznachennya>]. Accessed 4 February 2021.

[2] Uteka. 2020. "Export Restrictions on Aanti-epidemic Goods Prolonged to 1 August (Продовжено заборону на експорт протиепідемічних товарів до 1 серпня)". [<https://uteka.ua/ua/publication/news-14-novosti-zakonodatelstva-1-prodlen>].

zapret-na-eksport-protivoepidemeskix-tovarov-do-1-avgusta]. Accessed 4 February 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: 0

In the past year, Ukraine has enacted restrictions on the export of non-medical goods due to an infectious disease outbreak without international support.

At the beginning of April 2020, in response to the COVID-19 pandemic, Ukraine suspended the export of buckwheat until July 1, 2020. The Cabinet of Ministers of Ukraine announced that this measure was necessary in order to protect the domestic market [1]. There is no evidence that this occurred with international/bilateral support.

[1] Government of Ukraine. 2020. "Government Introduces Quota System for the Export of Buckwheat Through 1 June 2020 (Уряд ввів квотування на експорт гречки до 1 липня 2020 року)". [<https://www.kmu.gov.ua/news/uryad-vviv-kvotuvannya-na-eksport-grechki-do-1-lipnya-2020-roku>]. Accessed 4 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, Ukraine has implemented a ban on the entry of foreign travelers due to an infectious disease outbreak without international support.

A decree issued by the Ukrainian Cabinet of Ministers on March 11, 2020 in response to the COVID-19 pandemic shut down international passenger rail and air travel (with individual exceptions possible through consultation with the Ministry of Infrastructure, the Ministry of Foreign Affairs, and the State Border Guard Service) [1]. Ukraine's borders were closed to foreign citizens on March 15, 2020 [2].

Foreigners were permitted to enter Ukraine from 15 June, 2020 onward; however, the Government announced a month-long ban on foreigners entering the country from 29 August to 28 September, 2020. The ban was lifted on September 29, 2020 [3]. As of January 2021, foreigners are permitted to enter the country; however, they are required to be in possession of an insurance policy that is recognized in Ukraine, and travelers from COVID-19 hotspots are required to self-isolate for a period of 14 days unless they are able to produce a negative PCR test conducted no more than 48 hours before entry into the country [1].

There is no evidence that these bans took place with international support.

[1] Cabinet of Ministers of Ukraine. 2020. "On the Establishment of a Quarantine and the Introduction of Anti-Epidemic Measures to Prevent the Spread of Coronavirus SARS-CoV-2 (COVID-19) in Ukraine (Про встановлення карантину та запровадження обмежувальних протиепідемічних заходів з метою запобігання поширенню на території України гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2)".

[<https://zakon.rada.gov.ua/laws/show/1236-2020-п#Text>]. Accessed 4 February 2021.

[2] LB.ua. 2020. "Ukraine Decides to Close its Borders for Two Weeks (Україна решила закрыть границы на две недели)".

[https://lb.ua/news/2020/03/13/452450_ukraina_reshila_zakrit_granitsi_dve.html]. Accessed 4 February 2021.

[3] Organization for Economic Cooperation and Development. 2020. "The COVID-19 Crisis in Ukraine".

[<https://www.oecd.org/eurasia/competitiveness-programme/eastern-partners/COVID-19-CRISIS-IN-UKRAINE.pdf>]. Accessed 4 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: 299.23

2014

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 666.1

2014

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 of a public workforce strategy that has been introduced or updated within the past five years to identify fields where there is an insufficient workforce and strategies to address these shortcomings.

The most recent document that guides healthcare reform in Ukraine encompasses the period from 2015 to 2020. It describes the lack of qualified doctors, nurses, and other medical professionals as especially problematic in the context of the population's rapid aging and mentions that incentives must be created for people to enter the health workforce, including better compensation and opportunities for professional development. However, this document does not lay out a concrete strategy for increasing the size of the workforce or provide data on gaps [1].

The World Health Organization reported in 2019 that it had worked with the Ministry of Healthcare in 2017 "to finalize the calculation of the human resources needs for public health services" [2]. However, no strategy to address these needs could be found on the websites of the Ministry of Healthcare, the Ministry of Social Policy, or the Ministry of Education and Science [3, 4, 5].

According to Ukraine's 2015 Global Health Security Agenda Assessment, the ongoing reform of the country's health sector is supposed to include the drafting of a new public health workforce strategy [6]. The Assessment does not mention a timeframe within which the strategy was expected to be adopted.

[1] Ministry of Healthcare of Ukraine. 2015. "National Strategy for the Reform of the Healthcare System of Ukraine for 2015-2020" ("Національна стратегія реформування системи охорони здоров'я в Україні на період 2015 – 2020 років").

[<https://moz.gov.ua/uploads/0/691-strategiya.pdf>]. Accessed 4 February 2021.

[2] World Health Organization. 2019. "WHO Support for Health System Development in Ukraine".

[https://www.euro.who.int/__data/assets/pdf_file/0006/413925/WHO_Health-Systems_support_Ukraine.pdf]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[4] Ministry of Social Policy of Ukraine. [<https://www.msp.gov.ua/en>]. Accessed 4 February 2021.

[5] Ministry of Education and Science of Ukraine. [<https://mon.gov.ua/eng>]. Accessed 4 February 2021.

[6] Global Health Security Agenda. 2015. "Global Health Security Agenda Assessment of Ukraine."

[<https://stm.fi/documents/1271139/1356256/GHSA+Ukraine+Assesement+2016/711d4487-572b-44f6-bbdf-81d321de923f>]. Accessed 4 February 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 746

2014

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

While there is evidence Ukraine does have isolation facilities, there is no evidence of units capable of isolating and safely treating patients with highly communicable diseases.

In August 2018, an isolation ward with 80 beds opened at the LV Gromashevsky Institute of Epidemiology and Infectious Diseases in Kyiv [1]. No information could be found on the website of this institute about its capacity as of 2021, and there are no references to specific highly communicable diseases on its website [2]. Another isolation ward with 30 beds is located at Kirovograd Oblast Hospital in Kropyvnytsky and has operated since December 2009; this facility has the capacity to isolate patients with diseases such as influenza, malaria, toxoplasmosis, SARS, and anthrax [3].

In February 2020, prior to the first confirmed case of COVID-19 in Ukraine, a doctor from the Center of Public Health of Ukraine reported that hospitals around the country were equipped with specialized isolation facilities and would be able to contain an outbreak of the virus [4]. However, a representative from the Ministry of Healthcare also commented that the country's existing isolation facilities only had the capacity to handle "the beginning stages of an outbreak" and that "[i]n the long term, it won't be feasible to keep patients in isolation facilities" [5].

The 2018 edition of the law "On Protection of the Population from Infectious Diseases," originally adopted in 2000, defined isolation wards as "specialized medical institutions intended for hospitalization of infected persons for the purpose of their examination, preventative treatment and medical observation" [6]. However, the law in its 2020 edition provides no definition for the term [6,7].

[1] Unknown author. "First Top-quality Infectious Clinic in Ukraine." [<http://thekievtimes.ua/tech/244684-pervaya-polnocennaya-infekcionnaya-klinika-v-ukraine-zarabotaet-v-konce-avgusta.html>].

[2] LV Gromashevsky Institute of Epidemiology and Infectious Diseases. [<http://duieih.kiev.ua/>].

[3] Kirovograd Oblast Hospital. "Infectious Department."

[http://hospital.edukit.kr.ua/viddilennya_likarni/terapevtichni/infekcijne/]

[4] Zik. 2020. "Epidemiologist: Ukraine has Facilities and Isolation Rooms for the Treatment of Coronavirus (В Україні є медзаклади з ізоляторами й інфекційними боксами для лікування коронавірусу, – епідеміолог)".

[https://zikua.tv/news/ludyna/v_ukraini_ie_medzaklady_z_izolatoramy_i_infektsiinymy_boksamy_dlia_likuvannia_koronavirusu_epidemiolog_958747]. Accessed 4 February 2021.

[5] Radio Svoboda. 2020. "MoH Declares Readiness to Cope with the Likely Coronavirus Outbreak in Ukraine (У МОЗ розповіли про готовність лікарень до ймовірного спалаху коронавірусу в Україні)".

[<https://www.radiosvoboda.org/a/news-u-moz-rozpovily-pro-gotovnist-likaren-do-spalakhu-koronavirusu/30451846.html>]. Accessed 4 February 2021.

[6] Verkhovna Rada. 2018. On Protection of the Population from Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14/ed20181004#Text>]. Accessed 4 February 2021.

[7] Verkhovna Rada. 2000. "On Protection of the Population From Infectious Diseases (Про захист населення від інфекційних хвороб)". [<https://zakon.rada.gov.ua/laws/show/1645-14#Text>]. Accessed 4 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: 1

In the past two years, Ukraine has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak, but there is no evidence that the country has developed, updated, or tested a plan to expand isolation capacity.

In late March 2020, the Ministry of Healthcare of Ukraine announced that 240 facilities across the country had been identified for the hospitalization of the first wave of COVID-19 patients, with a total of 4,100 isolation spaces [1]. In August 2020, Minister of Healthcare, Maksym Stepanov, announced that 10,237 additional hospital beds had been deployed to hospitalize COVID-19 patients [2]. The number of beds had increased to 53,445 by November 2020 and was forecast to increase to 90,000 [3].

While Ukraine has expanded its ability to isolate patients, there is still evidence of a lack of capacity. For example, in April 2021, it was reported that the COVID-19 ward at Kiev's Hospital Number 3 (one of the city's primary locations for the treatment of COVID-19) was operating at above 100% capacity, and that most other hospitals in the city had run out of space for COVID-19 patients [4]. In April 2021, city council officials in the country's second-largest city, Kharkiv, reported that a lack of qualified medical personnel and equipment had made it impossible to increase the number of available hospital beds [5].

[1] Ministry of Healthcare of Ukraine. November 2020. "Maksym Stepanov: The Number of Beds for COVID-19 Patients Has Increased by 4.5 Times Since the Beginning of the Pandemic" ("Максим Степанов: Від початку пандемії кількість ліжок для госпіталізації пацієнтів із COVID-19 збільшена у 4,5 рази"). [<https://moz.gov.ua/article/news/maksim-stepanov-vid-pochatku-pandemii-kilkist-lizhok-dlja-gospitalizacii-pacientiv-iz-covid-19-zbilshena-u-45-raza>]. Accessed 7 May 2021.

[2] Cabinet of Ministers of Ukraine. August 2020. "Maksym Stepanov: Second-wave COVID-19 Hospitals Already Ready With Over 10,000 beds (Максим Степанов: В лікарнях до другої хвилі захворюваності на COVID-19 вже підготовлено понад 10 тисяч ліжок)". [<https://www.kmu.gov.ua/news/maksim-stepanov-v-likarnyah-drugoyi-hvili-zahvoryuvanosti-na-covid-19-vzhe-pidgotovleno-ponad-10-tisyach-lizhok>]. Accessed 7 May 2021.

[3] Ministry of Healthcare of Ukraine. March 2020. "List of COVID-19 Hospitals Made Public (Визначено перелік лікарень для госпіталізації пацієнтів з COVID-19)". [<https://moz.gov.ua/article/news/viznachenno-perelik-likaren-dlja-gospitalizacii-pacientiv-z-covid-19>]. Accessed 7 May 2021.

[4] Nastoyashee vremya. April 2021. "'We Have Depleted Practically All Available Resources'. Coronavirus wards in Kiev are overflowing" ("Мы задействовали практически все резервы". В Киеве переполнены палаты для больных с коронавирусом"). [<https://www.currenttime.tv/a/my-zadeystvovali-vse-rezervy-v-kieve-perepolneny-palaty-dlya-bolnyh-s-koronavirusom/31193315.html>]. Accessed 2 May 2021.

[5] Ukrinform. April 2021. "Vice Mayor: There Are Not Enough Doctors in Kharkiv to Deploy Additional Hospital Beds (У Харкові бракує лікарів для розгортання додаткових COVID-ліжок - відемер)". [<https://www.ukrinform.ua/rubric-regions/3232231-u-harkovi-brakue-likariv-dla-rozgotanna-dodatkovih-covidlizok-vicemer.html>]. Accessed 2 May 2021.

[6] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 2 May 2021.

[7] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 2 May 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 2

Ukraine has a national procurement protocol in place for the acquisition of laboratory needs and medical supplies by both the Ministry of Healthcare and the Ministry of Agrarian Policy and Food.

The law "On Public Procurements," adopted in 2015 and last updated in 2021, establishes the legal and economic principles for the procurement of goods, works and services to meet the needs of the state and its citizens [1]. The web portal "Prozorro" is an official open-data resource offering free access to all public purchasing data on all tenders announced since August 2016 [2]. The portal provides data on all tenders in Ukrainian and tender announcements over a specific expected value in English as well [2]. The Ministry of Healthcare and the Ministry of Agrarian Policy and Food have used the portal to announce tenders for laboratory supplies such as reagents and medical supplies like personal protective equipment (PPE) [3, 4, 5].

In 2018, the Ministry of Healthcare established a purchasing agency called "Medical Procurement of Ukraine," whose role is to oversee the procurement of medical supplies, vaccines, medicines, and other health-related goods [6,7]. Medical Procurement of Ukraine is subordinate to the Ministry of Healthcare, but its executive functions are overseen by an independent advisory board with seven members [8]. The agency oversees medical purchasing on the Prozorro procurement portal [9].

[1] Verkhovna Rada. 2015. "On Public Procurements." ("Про публічні закупівлі.") [<https://zakon.rada.gov.ua/laws/show/922-19#Text>]. Accessed 4 February 2021.

[2] Prozorro. [<https://prozorro.gov.ua/>]. Accessed 4 February 2021.

[3] Prozorro. 2021. "Medical Goods, Various (Laboratory Reagents for Analyzers) (Лікарські засоби різні (лабораторні реагенти для аналізаторів))." [<https://prozorro.gov.ua/en/tender/UA-2021-01-15-002744-a>]. Accessed 4 February 2021.

[4] Prozorro. 2020. "Personal Protective Equipment (Засоби особистого захисту)". [<https://prozorro.gov.ua/tender/UA-2020-11-20-014449-c>]. Accessed 4 February 2021.

[5] Prozorro. 2017. "Personal Protective Equipment (Gas Masks) (Засоби індивідуального захисту (протигази))." [<https://prozorro.gov.ua/tender/UA-2017-10-24-002107-a>]. Accessed 26 February 2021.

[6] Ministry of Healthcare of Ukraine. 2019. "How the State Enterprise Medical Procurements Ukraine works (Як працює Державне підприємство 'Медичні закупівлі України')." [<https://moz.gov.ua/article/news/jak-pracjuje-derzhavne-pidpriemstvo-medichni-zakupivli-ukraini>]. Accessed 4 February 2021.

[7] Cabinet of Ministers of Ukraine. 2019. "Matters Pertaining to the Effective Functioning of the System of Procurement of Medical Goods, Devices, Auxiliary Goods, and Other Medical Necessities (Деякі питання забезпечення ефективного функціонування системи закупівель лікарських засобів, медичних виробів, допоміжних засобів та інших товарів медичного призначення)". [<https://zakon.rada.gov.ua/laws/show/1172-2019-n#Text>]. Accessed 4 February 2021.

[8] Medical Procurements Ukraine. 2020. "Advisory Board (Наглядова рада)". [<https://medzakupivli.com/uk/pro>

mzu/naglyadova-rada]. Accessed 4 February 2021.

[9] Medical Procurements Ukraine. "Medical Catalog Prozorro Market (Медичний каталог Prozorro Market)".

[<https://medzakupivli.com/uk/zamovnikam/instrymenti-zakypivel/medichnii-katalog-prozorro-market-2>]. Accessed 4 February 2021.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 0

There is no evidence that Ukraine has a stockpile of medical supplies for national use during a public health emergency.

The Civil Defense Code, adopted in 2012 and updated in 2021, states that the Cabinet of Ministers is responsible for the maintenance of a stockpile of personal protective equipment and other materials necessary during an emergency [1]. The "State Emergency Response Plan," adopted in 2018 and updated in 2020, states that the Ministry of Healthcare is responsible for creating and managing a stockpile of material and financial resources necessarily during a health emergency. The requirement for the Ministry of Healthcare to maintain a stockpile is reinforced in a decree on "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations," adopted in 2015 and updated in 2020 [3]. None of these documents include any mention of what exactly these stockpiles should include or specific references to medical supplies or countermeasures [1, 2, 3].

Ukraine has made efforts to form a stockpile of medical countermeasures (MCMs), but not specifically for use during a public health emergency. In 2018, Ukraine transitioned to a new budgeting procedure for vaccines that ensures that the number of available vaccines is 25% greater than the forecast requirement each year. This budgeting plan was developed by the Ministry of Healthcare in cooperation with the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) [4]. During the same year, Ukraine acquired a full stock of vaccines "for the first time in seven years" with the assistance of UNICEF [5]. However, these measures were taken to create a surplus of supply for routine vaccinations and do not ensure that the country has a stockpile for use during a public health emergency [4, 5].

In addition, in April 2020, Minister of Healthcare, Maksym Stepanov, announced that the ministry would begin stockpiling personal protective equipment (PPE); he stated that the absence of such a stockpile was problematic at the onset of the COVID-19 outbreak and that the formation of one was necessary to mitigate the effects of future epidemics [6]. In May 2020, the state-run procurement agency Medical Procurement of Ukraine was ordered to begin working towards the formation of a three-month reserve of PPE [7]. However, there is no evidence on the websites of the Ministry of Healthcare that these reserves of PPE have been created since May 2020 [8].

No information could be found on the websites of the Ministry of Healthcare or the Ministry of Defense regarding whether Ukraine maintains a stockpile of medicines in excess of its yearly forecast for the medicines listed in the "National List of Basic Medicines," which was last updated in 2017 [8, 9, 10]. No further evidence of a stockpile of medical supplies or medical countermeasures could be found on the websites of the State Emergency Service or of the State Service of Ukraine on Medicines and Drugs Control [11, 12].

- [1] Verkhovna Rada. 2012. "Civil Defense Code of Ukraine." ("Кодекс цивільного захисту України.") [<http://zakon.rada.gov.ua/laws/show/5403-17>]. Accessed 4 February 2021.
- [2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan." ("План реагування на надзвичайні ситуації державного рівня.") [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.
- [3] Cabinet of Ministers of Ukraine. 2015. "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations (Про затвердження Порядку створення та використання матеріальних резервів для запобігання і ліквідації наслідків надзвичайних ситуацій). [<https://zakon.rada.gov.ua/rada/show/775-2015-%D0%BF#Text>]. Accessed 4 February 2021.
- [4] LB.ua. 2018. "Cabinet of Ministers Approves New Vaccine Procurement Scheme that Accounts for 25-Percent Buffer (Кабмін утвердил нову методику закупок вакцин с учетом 25%-го буферного запаса)". [https://rus.lb.ua/society/2018/02/21/390787_kabmin_utverdil_novuyu_metodiku.html]. Accessed 4 February 2021.
- [5] Radio Svoboda. 2018. "Ukraine Plans to Procure Extra Vaccines—МОН (В Україні плануватимуть закупівлю вакцин з надлишко—МОЗ)". [<https://www.radiosvoboda.org/a/29187673.html>]. Accessed 4 February 2021.
- [6] Ministry of Healthcare of Ukraine. 2020. "We Will Begin creating a stockpile of personal protective equipment for medical professionals—Максим Степанов (Ми починаємо створювати резерв засобів індивідуального захисту для медиків—Максим Степанов)". [<https://moz.gov.ua/article/news/mi-pochinaemo-stvorjuvati-rezerv-zasobiv-individualnogo-zahistu-dlja-medikov---maksim-stepanov>]. Accessed 4 February 2021.
- [7] Office of the President of Ukraine. 2020. "Ukraine Must Form a Three-month Supply of Goods to Combat COVID-19—Meeting with Representative of the Office of the President on Medical Procurement (В Україні має бути сформований тримісячний запас засобів для боротьби з COVID-19 – нарада за участі керівника Офісу Президента щодо медичних закупівель)". [<https://www.president.gov.ua/news/v-ukrayini-maye-buti-sformovaniy-trimisyachnij-zapas-zasobiv-61317>]. Accessed 4 February 2021.
- [8] Ministry of Healthcare. [<http://moz.gov.ua>]. Accessed 11 February 2021.
- [9] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/en/>]. Accessed 11 February 2021.
- [10] Cabinet of Ministers of Ukraine. 2017. "Changes to the National List of Basic Medicines" ("Про внесення змін до Національного переліку основних лікарських засобів"). [<https://zakon.rada.gov.ua/laws/show/1081-2017-p#Text>]. Accessed 4 February 2021.
- [11] State Emergency Service of Ukraine. [<https://www.dsns.gov.ua/>]. Accessed 11 February 2021.
- [12] State Service of Ukraine on Medicines and Drugs Control. [<https://www.dls.gov.ua/en/>]. Accessed 11 February 2021.

4.2.2b

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

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

Current Year Score: 0

There is no evidence that Ukraine maintains a stockpile of laboratory supplies for national use during a public health emergency.

The Civil Defense Code, adopted in 2012 and updated in 2021, states that the Cabinet of Ministers is responsible for the maintenance of a stockpile of personal protective equipment and other materials necessary during an emergency [1]. The "State Emergency Response Plan," adopted in 2018 and updated in 2020, states that the Ministry of Healthcare is responsible for creating and managing a stockpile of material and financial resources necessarily during a health emergency [2]. The requirement for the Ministry of Healthcare to maintain a stockpile is reinforced in a decree on "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations," adopted in 2015 and updated in 2020 [3]. None of these documents include any mention of what exactly these stockpiles should include [1, 2, 3].

There is no evidence of a stockpile of laboratory supplies on the websites of the Ministry of Health, Ministry of Defense, or the State Emergency Agency [4, 5, 6]. However, Ukraine's budget plan for 2020 (published in February 2020) foresaw the purchase of more than 56,000 reagent kits for the diagnosis of COVID-19 [7].

- [1] Verkhovna Rada. 2012. "Civil Defense Code of Ukraine (Кодекс цивільного захисту України)". Legislation of Ukraine. [<http://zakon.rada.gov.ua/laws/show/5403-17>]. Accessed 4 February 2021.
- [2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.
- [3] Cabinet of Ministers of Ukraine. 2015. "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations (Про затвердження Порядку створення та використання матеріальних резервів для запобігання і ліквідації наслідків надзвичайних ситуацій)". [<https://zakon.rada.gov.ua/rada/show/775-2015-%D0%BF#Text>]. Accessed 4 February 2021.
- [4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.
- [5] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.
- [6] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.
- [7] Ministry of Healthcare of Ukraine. 2020. "Passport: Budget Program for 2020 (Паспорт бюджетної програми на 2020 рік)". [https://moz.gov.ua/uploads/5/27726-dn_2910_15_12_2020_dod.pdf]. Accessed 4 February 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 Ukraine requires an annual review of the national stockpile to ensure that the supply is sufficient for a public health emergency.

The Civil Defense Code, adopted in 2012 and updated in 2021, states that the Cabinet of Ministers is responsible for the maintenance of a stockpile of personal protective equipment and other materials necessary during an emergency [1]. The "State Emergency Response Plan," adopted in 2018 and updated in 2020, states that the Ministry of Healthcare is responsible for creating and managing a stockpile of material and financial resources necessarily during a health emergency [2]. The requirement for the Ministry of Healthcare to maintain a stockpile is reinforced in a decree on "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations," adopted in 2015 and updated in 2020 [3].

However, none of these documents require that an annual review of the national stockpile be conducted [1, 2, 3]. There is no further evidence that an annual review is required, or that one has been conducted recently, on the websites of the Ministry of Health, Ministry of Defense, or State Emergency Service [4, 5, 6].

- [1] Verkhovna Rada. 2012. "Civil Defense Code of Ukraine." ("Кодекс цивільного захисту України.") Legislation of Ukraine. [<http://zakon.rada.gov.ua/laws/show/5403-17>]. Accessed 4 February 2021.
- [2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.
- [3] Cabinet of Ministers of Ukraine. 2015. "Procedures for the Formation and Use of Material Reserves for the Prevention and Mitigation of Emergency Situations (Про затвердження Порядку створення та використання матеріальних резервів для

запобігання і ліквідації наслідків надзвичайних ситуацій)". [<https://zakon.rada.gov.ua/rada/show/775-2015-%D0%BF#Text>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[6] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 0

There is no evidence of a plan to leverage domestic manufacturing capacity to produce medical supplies for national use during a public health emergency or of a mechanism to procure them.

No evidence regarding an established plan to leverage domestic manufacturing capacity could be found on the websites of the Ministry of Healthcare, Ministry of Defense, or State Emergency Service [1, 2, 3]. However, in March 2020, the Ministry of Healthcare called upon domestic manufacturers to assist in the production of personal protective equipment in response to the COVID-19 pandemic [4]. The Ministry of Healthcare has also held consultations with domestic manufacturers of PPE to ensure that their products meet international standards [5]. Finally, personal protective equipment (PPE) is temporarily exempt from value-added tax in Ukraine during the COVID-19 pandemic [6].

There is a mechanism to procure medical supplies and countermeasures in Ukraine; however, there are no provisions for it to be used specifically during a public health emergency. The law "On Public Procurements," adopted in 2015 and updated in 2021, establishes the legal and economic principles for the procurement of goods, works, and services to meet the needs of the state and its citizens [7]. The web portal "Prozorro" is an official open-data resource offering free access to all public purchasing data on all tenders announced since August 2016 [8]. Prozorro has been used for the procurement of medical supplies during the COVID-19 pandemic; for example, in May 2020, the government began using the portal to develop a three-month stockpile of PPE [9]. In January 2021, Prozorro was being used to procure medical countermeasures (MCMs), like vaccines, and has also been used during the COVID-19 outbreak to publicize information about vaccine procurement [10, 11].

However, there is no evidence of a special procurement mechanism for public health emergencies on the Prozorro website, in the law "On Public Procurements," or on the websites of the Ministries of Healthcare, Ministry of Defense, State Emergency Service, or State Service of Ukraine on Medicines and Drugs Control. [1, 2, 3, 7, 8, 12]

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 12 February 2021.

[2] Ministry of Defense of Ukraine. [<http://mil.gov.ua>]. Accessed 12 February 2021.

[3] State Emergency Service of Ukraine. [<https://www.dsns.gov.ua/>]. Accessed 12 February 2021.

[4] Ministry of Health of Ukraine. 2020. "Viktor Lyashko: Domestic Manufacturers Will Increase Their Production of Personal Protective Equipment (Вітчизняні виробники нарощують виробництво засобів індивідуального захисту, - Віктор Ляшко)".

[<https://moz.gov.ua/article/news/vitchiznjani-virobniki-naroschujut-virobnictvo-zasobiv-individualnogo-zahistu---viktork-ljashko>]. Accessed 4 February 2021.

[5] Government of Ukraine. 2020. "МОН: We Will Help Ukrainian Manufacturers of Personal Protective Equipment Meet International Standards (засобів індивідуального захисту щодо проходження міжнародної сертифікації)".

[<https://www.kmu.gov.ua/news/moz-mi-pidtrimayemo-ukrayinskih-virobnikiv-zasobiv-individualnogo-zahistu-shchodoprohodzhennya-mizhnarodnoyi-sertifikaciyi>]. Accessed 4 February 2021.

[6] Cabinet of Ministers of Ukraine. 2021. "On the List of Goods (Including Medical Goods, Medical Devices or Medical Equipment) That Are Necessary for the Prevention, Localization, and Liquidation of Outbreaks, Epidemics, and Pandemics of the Respiratory Disease COVID-10 (SARS-CoV-2), and Which are Exempt From the Value-added Tax on the Customs Territory of Ukraine" ("Про затвердження переліку товарів (у тому числі лікарських засобів, медичних виробів та/або медичного обладнання), необхідних для виконання заходів, спрямованих на запобігання виникненню і поширенню, локалізацію та ліквідацію спалахів, епідемій та пандемій гострої респіраторної хвороби COVID-19, спричиненої коронавірусом SARS-CoV-2, операції з ввезення яких на митну територію України та/або операції з постачання яких на митній території України звільнюються від оподаткування податком на додану вартість)". [<https://zakon.rada.gov.ua/laws/show/224-2020-p#Text>]. Accessed 4 February 2021.

[7] Verkhovna Rada. 2015. "On Public Procurements. (Про публічні закупівлі)". [<https://zakon.rada.gov.ua/laws/show/922-19#Text>]. Accessed 4 February 2021.

[8] Prozorro. [<https://prozorro.gov.ua/>]. Accessed 4 February 2021.

[9] Office of the President of Ukraine. 2020. "Ukraine Must Form a Three-month Supply of Good to Combat of COVID-19— Meeting with Representative of the Office of the President on Medical Procurement (В Україні має бути сформований тримісячний запас засобів для боротьби з COVID-19 – нарада за участі керівника Офісу Президента щодо медичних закупівель)". [<https://www.president.gov.ua/news/v-ukrayini-maye-buti-sformovaniy-trimisyachnij-zapas-zasobiv-61317>]. Accessed 4 February 2021.

[10] Prozorro. 2021. "Pharmaceutical Product Lot No. 1: Rabies Vaccine Indirab (Фармацевтична продукція Лот № 1 Вакцина проти сказу (Rabies vaccine) Індіраб (Вакцина проти сказу (Rabies vaccine)))".

[<https://prozorro.gov.ua/en/tender/UA-2021-01-29-001392-a>]. Accessed 4 February 2021.

[11] Ukrinform. 2020. "Agreement to Procure Chinese COVID Vaccine Published on Prozorro (Договір на закупівлю китайської COVID-вакцини виклали у ProZorro)". [<https://www.ukrinform.ua/rubric-economy/3164235-dogovir-na-zakupivlu-kitajskoi-covidvakcini-viklali-u-prozorro.html>]. Accessed 4 February 2021.

[12] State Service of Ukraine on Medicines and Drugs Control. [<https://www.dls.gov.ua/en/>]. Accessed 11 February 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 of a plan to leverage domestic manufacturing capacity to produce laboratory supplies for national use during a public health emergency or of a mechanism to procure laboratory supplies during a public health emergency.

No evidence regarding an established plan to leverage domestic manufacturing capacity could be found on the websites of the Ministry of Health, Ministry of Defense, or State Emergency Service [1, 2, 3]. While there are manufacturers in Ukraine that produce reagents, their quality is regarded as subpar and non-competitive [4].

There is a mechanism to procure laboratory supplies in Ukraine, but no evidence of special provisions for procurement during public health emergencies. The law "On Public Procurements," adopted in 2015 and updated in 2021, establishes the legal and economic principles for the procurement of goods, works and services to meet the needs of the state and its citizens [5]. The web portal "Prozorro" is an official open-data resource offering free access to all public purchasing data on all tenders announced since August 2016 [6]. Prozorro was being used in January 2021 to procure laboratory supplies (namely, reagents) [7].

However, there is no evidence of a mechanism to procure laboratory supplies for public health emergencies on the Prozorro website, in the law "On Public Procurements," or on the websites of the Ministries of Healthcare, Ministry of Defense, State Emergency Service, or State Service of Ukraine on Medicines and Drugs Control [1, 2, 3, 5, 6, 8].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[2] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

[3] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[4] Interfax Ukraine. 2020. "Ukraine Will Be Unable to Avail of Domestic Tests Because of Their Poor Quality: 'Sinevo' (Україна не зможе забезпечити себе вітчизняними тестами на COVID-19 через їх недостатню якість—'Сінево)".

[<https://ua.interfax.com.ua/news/pharmacy/677238.html>]. Accessed 4 February 2021.

[5] Verkhovna Rada. 2015. "On Public Procurements." ("Про публічні закупівлі.") [<https://zakon.rada.gov.ua/laws/show/922-19#Text>]. Accessed 4 February 2021.

[6] Prozorro. [<https://prozorro.gov.ua/>]. Accessed 4 February 2021.

[7] Prozorro. 2021. "Laboratory Reagents (Реагенти лабораторні)". [<https://prozorro.gov.ua/tender/UA-2021-01-08-000202-b>]. Accessed 4 February 2021.

[8] State Service of Ukraine on Medicines and Drugs Control. [<https://www.dls.gov.ua/en/>]. Accessed 11 February 2021.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of a plan, program, or guidelines in place for dispensing medical countermeasures during a public health emergency.

According to the State Emergency Response Plan, the Ministry of Healthcare is responsible for dispensing medical countermeasures during public health emergencies [1]. However, the Ministry of Health's website contains no evidence that the Ministry has any plan, program or guidelines about how to do this [2].

In January 2021, President Volodymyr Zelenskyy of Ukraine stated that there was an immediate need to a COVID-19 vaccination plan to be drawn up, including the number of vaccines, timing, prioritization, and logistics [3]. Prime Minister Denys Shmyhal' then stated that the country has already worked out the logistics of storing, transporting, and dispensing the

vaccine, including maintenance of the "cold chain" [4]. However, these guidelines are not publicly available on the websites of the Ministry of Healthcare, State Emergency Service, or Ministry of Defense of Ukraine [5, 6, 7].

[1] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[3] Office of the President of Ukraine. 2021. "Vaccination Program in Ukraine Should Have a Detailed Plan For Each Region— President". [<https://www.president.gov.ua/en/news/programa-vakcinaciyi-v-ukrayini-maye-mistiti-detalnij-plan-p-66169>]. Accessed 4 February 2021.

[4] Government of Ukraine. 2021. "Prime Minister: Ukraine Has a Sufficient Quantity of Effective Vaccines" ("Прем'єр-міністр: Україна буде забезпечена необхідною кількістю ефективних вакцин"). [<https://www.kmu.gov.ua/news/premyer-ministr-ukrayina-bude-zabezpechena-neobhidnoyu-kilkistyu-efektivnih-vakcin>]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[6] Ministry of Defense of Ukraine. [<https://www.mil.gov.ua/>]. Accessed 4 February 2021.

[7] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 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 of a public plan in place to receive health personnel from abroad in case of a public health emergency.

Article 37 of the 2006 "Law on Protection of the Population and Territories from Man-made and Natural Emergencies" foresaw international co-operation on the basis of multilateral and bilateral agreements [1]. However, this document was replaced in 2018 by the State Emergency Response Plan, which makes no mention of receiving health personnel from other countries. There is no mention of such plans or agreements on the websites of the Ministry of Healthcare, the State Emergency Service, the Ministry of Foreign Affairs, or the Ministry of Defense [2, 3, 4, 5, 6].

There is also no evidence that Ukraine has received or invited medical personnel as part of its response to COVID-19 [2, 3, 4, 5, 6, 7].

[1] Verkhovna Rada. 2000. "Law on Protection of the Population and Territories From Man-made and Natural Emergencies." ("Про захист населення і територій від надзвичайних ситуацій техногенного та природного характеру.") Legislation of Ukraine. [<http://zakon.rada.gov.ua/laws/show/1809-14/ed20070620>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)". [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[4] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[5] Ministry of Foreign Affairs of Ukraine. [<https://mfa.gov.ua/>] Accessed 26 October 2018.

[6] Ministry of Defense of Ukraine. [<http://www.mil.gov.ua/>]. Accessed 4 February 2021.

[7] World Health Organization. "Ukraine". [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 February 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: 4

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.9

2014

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: 305.84

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

Ukraine has legislation committing to provide prioritized healthcare services to healthcare workers who become sick as a result of responding to a public health emergency.

Article 77 of Ukraine's "Basic Law on Healthcare" (adopted 1993, last amended 2020) states that healthcare and pharmaceutical workers as well as biologists, microbiologists, virologists, biochemists, and other trained non-medical professionals who work at healthcare institutions are entitled to receive medical treatment before others [1, 2]. This provision applies generally, and is not restricted to public health emergencies (although it prevented the spread of epidemic diseases is among the law's objectives, as per Article 30) [1, 2].

Article 37 of the same law also guarantees that healthcare workers be provided full health insurance by their employers, which covers any illness that results from their work [1]. It guarantees that anyone involved in saving lives or providing medical assistance "during an emergency or extreme situation" is entitled to free treatment for any injury sustained during such activities [1].

[1] Verkhovna Rada. 1993. "Basic Law of Ukraine on Healthcare." ("Основи законодавства України про охорону здоров'я"). [<http://zakon.rada.gov.ua/laws/show/2801-12>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 2020. "Law Adopted: 'On Changes to Article 77 of the Basic Law on Healthcare in Ukraine (concerning benefits and pay increases for non-medical professionals who work in the healthcare system) (Прийнято Закон 'Про внесення змін до статті 77 Основ законодавства України про охорону здоров'я (щодо пільг та підвищення оплати праці професіоналів з вищою немедичною освітою, які працюють в системі охорони здоров'я)". [<https://www.rada.gov.ua/news/Novyny/201202.html>]. Accessed 4 February 2021.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a system for public health officials and healthcare workers to communicate during a public healthcare emergency.

There is no mention of such a system on the website of the Ministry of Healthcare [1].

The "State Emergency Response Plan," adopted in 2018 and updated in 2020, includes clauses on communication between different state agencies, but this is limited to the chain of communication rather than any actual system, and in any case does not mention communication between public health officials and healthcare workers [2]. Moreover, this plan does not focus on healthcare [2].

In 2020, the Center for Public Health within the Ministry of Healthcare of Ukraine created a COVID-19 website targeted at healthcare workers. The website contains frequently asked questions and general information about diagnostic practices but does not provide a special mechanism for healthcare workers to contact the Center [3].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan." ("План реагування на надзвичайні ситуації державного рівня") [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Center for Public Health of Ukraine. "What is There to Know About the Novel Coronavirus? (Що треба знати про новий коронавірус?)". [<https://covid19.phc.org.ua>]. Accessed 4 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 no evidence of a system for public health officials and public/private healthcare workers to communicate during a public healthcare emergency.

There is no mention of such a system on the Ministry of Healthcare's website [1].

The "State Emergency Response Plan," adopted in 2018 and updated in 2020, includes clauses on communication between different state agencies, but this is limited to the chain of communication rather than any actual system, and in any case does not mention communication between public health officials and healthcare workers [2]. Moreover, this plan does not focus on healthcare [2].

In 2020, the Center for Public Health within the Ministry of Healthcare of Ukraine created a COVID-19 website targeted at healthcare workers. The website contains frequently asked questions and general information about diagnostic practices but does not provide a special mechanism for healthcare workers to contact the Center [3].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня)." [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[3] Center for Public Health of Ukraine. "What is There to Know About the Novel Coronavirus? (Що треба знати про новий коронавірус?)". [<https://covid19.phc.org.ua>]. Accessed 4 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

Ukraine's national public health system is monitoring the number of healthcare associated infections (HCAI) in healthcare facilities.

Ukraine's Ministry of Healthcare monitors COVID-19 infections among healthcare workers and was publicizing these data in a daily bulletin as of May 2021 [1].

In addition, in March 2019, the Cabinet of Ministers of Ukraine approved a "National Antimicrobial Resistance Action Plan." The Plan tasked various government bodies, including the Ministry of Healthcare, the Ministry of Economic Development, Trade, and Agriculture and the National Academy of Science, with developing sector-specific antimicrobial resistance (AMRs) plans by the end of 2020. This plan included the development of regulations to strengthen measures to prevent HCAs [2].

Subsequently, at the beginning of 2020, the Ministry of Healthcare published decrees titled "On the Introduction of Measures to Prevent Infections in Institutions of Healthcare" and "On Procedures for the Conduct of Epidemiological Surveillance and Monitoring of Healthcare-Associated Infections" [3, 4]. The latter law provides a comprehensive definition of healthcare-associated infections and describes possible transmission vectors [3]. It states that healthcare institutions are required to conduct both routine surveillance and sentinel surveillance (participating institutions are selected by the Center for Public Health) [3]. However, according to this law, routine surveillance of HCAs is not subject to external review and is meant for the healthcare institution's internal use. In contrast, sentinel surveillance is coordinated and overseen by the Center for Public Health [3].

Neither HCAI surveillance data, nor other evidence that this monitoring is actually taking place are available on the websites of the Ministry of Healthcare or the Center for Public Health [4, 5].

[1] Ministry of Healthcare of Ukraine. May 2021. "Current Information about the Spread of COVID-19 (Оперативна інформація про поширення коронавірусної інфекції 2019-nCoV). [<https://moz.gov.ua/article/news/operativna-informacija-pro-poshirennya-koronavirusnoi-infekcii-2019-cov19>]. Accessed 2 May 2021.

[2] Cabinet of Ministers of Ukraine. 2019. "On the Confirmation of the National Antimicrobial Resistance Action Plan (Про затвердження Національного плану дій щодо боротьби із стійкістю до протимікробних препаратів)". [<https://zakon.rada.gov.ua/laws/show/116-2019-p#Text>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. 2020. "On the Introduction of Measures to Prevent Infections in Institutions of Healthcare (Інструкція з впровадження профілактики інфекцій та інфекційного контролю в закладах охорони здоров'я)". [https://moz.gov.ua/uploads/3/18795-pro_20200212_1_dod_4.pdf]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. 2020. "On Procedures for the Conduct of Epidemiological Surveillance and Monitoring of Healthcare-Associated Infections (Порядок здійснення епідеміологічного нагляду та ведення обліку інфекційних хвороб, пов'язаних з наданням медичної допомоги)". [<https://moz.gov.ua/uploads/3/18792->

pro_20200212_1_dod_1.pdf]. Accessed 4 February 2021.

[5] Ministry of Healthcare of Ukraine. [http://moz.gov.ua]. Accessed 4 February 2021.

[6] Center for Public Health of Ukraine. [https://www.phc.org.ua]. Accessed 4 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

There is a national requirement for ethical review before beginning a clinical trial.

According to the Ministry of Healthcare "Order of Conducting Clinical Trials of Drugs and Examination of Clinical Trials' Materials" (adopted 2009, last amended 2012) before clinical trials can start, they must be approved – first by the State Expert Center at the Ministry of Healthcare and then by the relevant local ethics committee. [1] According to the law "On Medical Goods" (adopted 1996, last amended 2021) each institution that performs clinical trials has an independent local ethics committee consisting of medical and scientific experts as well as experts in human rights and safety. [2] These committees operate on the basis of approval from the Ministry of Healthcare. [2]

In September 2020, the State Expert Center announced temporary adaptations to the clinical trial process; for instance, if COVID-19 containment measures prevent clinical trial participants from appearing in person to the site where the trial is being conducted, remote participation or participation by phone or video call may be acceptable alternatives. [3] In addition, during the COVID-19 pandemic, the Center began prioritizing clinical trials for medical interventions meant to treat or control the outbreak of the virus [3].

[1] Ministry of Healthcare of Ukraine. 2012. "Order of Conducting Clinical Trials of Drugs and Examination of Clinical Trials' Materials (Порядок проведення клінічних випробувань лікарських засобів та експертизи матеріалів клінічних випробувань.)" [http://zakon.rada.gov.ua/laws/show/z1235-12]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 1996. "On Medical Goods (Про лікарські засоби)". [http://zakon.rada.gov.ua/laws/show/123/96-%D0%B2%D1%80]. Accessed 4 February 2021.

[3] State Expert Center of Ukraine. 2020. "Attention Applicants and Researchers! (До уваги заявників та дослідників!)". [https://www.dec.gov.ua/announcement/do-uvagy-zayavnykiv-ta-doslidnykiv-2]. Accessed 4 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: 0

There is no evidence of an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics.

No mention is made of such a process in the law "On Medical Goods" or the "Order on the Procedure for Conducting Clinical Trials of Medicinal Products and Expert Evaluation of Materials Pertinent to Clinical Trials," or on the website of the Ministry of Healthcare [1, 2, 3].

In January 2021, the Ukrainian parliament adopted an amendment to the law "On Medical Goods" (adopted 1996) that allows medical countermeasures (MCMs) specific to the COVID-19 pandemic to be registered with the government prior to the conclusion of clinical trials, if certain conditions are met [4]. However, the amendment did not establish an expedited clinical trial process [4].

[1] Ministry of Healthcare of Ukraine. 2012. "Order of Conducting Clinical Trials of Drugs and Examination of Clinical Trials' Materials (Порядок проведення клінічних випробувань лікарських засобів та експертизи матеріалів клінічних випробувань)". [<http://zakon.rada.gov.ua/laws/show/z1235-12>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 1996. "On Medical Goods" ("Про лікарські засоби"). [<http://zakon.rada.gov.ua/laws/show/123/96-%D0%B2%D1%80>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[4] Verkhovna Rada. 2021. "Law Adopted: 'Changes to the "On Medical Goods" Pertaining to State Registration of Medical Goods under the Circumstances of a Medical Emergency (Прийнято Закон 'Про внесення змін до Закону України' Про лікарські засоби' щодо державної реєстрації лікарських засобів під зобов'язання для екстреного медичного застосування)". [<https://www.rada.gov.ua/news/Novyny/202376.html>]. Accessed 4 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

There is a government agency responsible for approving new medical countermeasures for humans.

The approval of new medical countermeasures for humans is the responsibility of the Department of State Registration of Medical and Immunobiological Drugs [1, 2]. The "Regulations on the Department of State Registration of Medical and Immunobiological Drugs" mandates that the department approve and monitor new medicinal products, although it does not explicitly mention "medical countermeasures" or public health emergencies [2]. As per article 3.13 of this regulation, the department is responsible for ensuring the safety and efficacy of medicinal products [2]. This department is within the Directorate of Pharmaceutical Activities and of the Quality of Pharmaceutical Products, which is in turn within the Ministry of Healthcare [3].

[1] Ministry of Healthcare of Ukraine. "Department of State Registration of Medical and Immunobiological Drugs." ("Відділ державної реєстрації лікарських та імунобіологічних засобів.") [<https://regulation.gov.ua/catalogue/department/id4605>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. "Regulations on the Department of State Registration of Medicinal and Immunobiological Drugs under the Directorate of Pharmaceutical Activities and of the Quality of Pharmaceutical Products." ("Положення про Відділ державної реєстрації лікарських та імунобіологічних засобів Управління фармацевтичної

діяльності та якості фармацевтичної продукції".) [<http://tools.regulation.gov.ua/files/npa/243240.docx>]. Accessed 4 February 2021.

[3] Ministry of Healthcare of Ukraine. "Departments of the Ministry of Healthcare." ("Підрозділи МОЗ.") [<http://moz.gov.ua/struktura>]. Accessed 4 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

There is an expedited process for approving medical countermeasures for human use during public health emergencies.

According to the law "On Medical Goods" (adopted 1996, last amended 2021) during public health emergencies, it is permitted to import medicines that are not registered in Ukraine if it can be proven that the drugs in question are registered and used in the country of origin [1].

Furthermore, in January 2021, the Ukrainian parliament adopted an amendment to the law "On Medical Goods" that allows medical countermeasures specific to the COVID-19 pandemic to be registered with the government prior to the conclusion of clinical trials, if certain conditions are met [2].

[1] Ministry of Healthcare of Ukraine. 1996. "On Medical Goods" ("Про лікарські засоби.") [<http://zakon.rada.gov.ua/laws/show/123/96-%D0%B2%D1%80>]. Accessed 4 February 2021.

[2] Verkhovna Rada. 2021. "Law Adopted: 'Changes to the Law "On Medical Goods" Pertaining to State Registration of Medical Goods Under the Circumstances of a Medical Emergency" ("Прийнято Закон "Про внесення змін до Закону України "Про лікарські засоби" щодо державної реєстрації лікарських засобів під зобов'язання для екстреного медичного застосування"). [<https://www.rada.gov.ua/news/Novyny/202376.html>]. Accessed 4 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: 0

There is no national risk reduction strategy and the closest equivalent makes no mention of pandemics.

According to a 2017 Law by Ukraine on commitments under the Sendai Framework, at that time the country had no national disaster risk reduction strategy, with an objective to develop one by 2030 but no details on a timeline or the responsibility for drafting it [1]. In the meantime, the closest that Ukraine has is 2014's Concept on Risk Management of Man-Made and Natural Emergencies, which does not make any mention of pandemics, but instead focuses on the need to monitor and reduce the level of risk to the economy and population from accidents and natural disasters, particularly through the adoption of a standardized scale for rating risks [2].

In 2019, a project called the 3P Consortium was launched by the Austrian Red Cross, Danish Red Cross, Ukrainian Red Cross and other international non-governmental organization (NGOs) to reduce vulnerability to disaster risks in Eastern Ukraine and to support the Government of Ukraine in fulfilling its commitment under the Sendai Framework for Disaster Risk Reduction, 2015-2030. However, epidemic and pandemic risk reduction are not explicitly included as part of the Consortium's mission [3].

In January 2021, the United Nations Office for Disaster Risk Reduction was hiring a Brussels-based specialist to contribute to the development of Ukraine's National Disaster Risk Reduction Strategy [4].

No further evidence on the development of a risk reduction strategy could be found on the websites of the Ministry of Healthcare or of the State Emergency Service [5, 6].

[1] PreventionWeb. 2017. "Sendai Framework Data Readiness Review—Report—Ukraine."

[https://www.preventionweb.net/files/53205_ukraineukr.pdf]. Accessed 4 February 2021.

[2] Cabinet of Ministers of Ukraine. 2014. "Concept on Risk Management of Man-made and Natural Emergencies. (Концепція управління ризиками виникнення надзвичайних ситуацій техногенного та природного характеру.)"

[<http://zakon4.rada.gov.ua/laws/show/37-2014-%D1%80>]. Accessed 4 February 2021.

[3] ACTED. 2019. "ACTED The 3P Consortium: Prepare, Prevent and Protect Civilian pPopulations from disaster risks in conflict-affected areas". [<https://www.acted.org/en/the-3p-consortium-prepare-prevent-and-protect-civilian-populations-from-disaster-risks-in-conflict-affected-areas-2/>]. Accessed 4 February 2021.

[4] United Nations Careers. "Job Opening: Disaster Risk Reduction & Risk Assessment Specialist".

[<https://careers.un.org/lbw/jobdetail.aspx?id=148316>]. Accessed 4 February 2021.

[5] State Emergency Service of Ukraine. [<https://www.dsns.gov.ua/>]. Accessed 12 February 2021.

[6] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 12 February 2021.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 0

There is no evidence of permanent agreements with neighboring countries with regards to public health emergencies.

There is no record of such agreements on the websites of the Ministry of Healthcare, the Ministry of Foreign Affairs, or the State Emergency Service [1, 2, 3].

However, Ukraine has received extensive humanitarian aid, including medical aid, from Poland, Hungary, and the European Union (EU). As of February 2018, the EU had provided Ukraine with over EUR 677 million (approximately US\$820m) in humanitarian aid, part of which has gone to the provision of healthcare [4]. In October 2020, the European Commission allocated an additional 10 million euros (US\$12.1m) in humanitarian aid to support the population of the conflict zones in Eastern Ukraine; part of this money was earmarked to support COVID-19 prevention efforts in the area [5].

Neighboring Poland has also sent humanitarian aid, including medical supplies [6]. Neighboring Hungary has sent aid, including hospital beds, medical equipment, and vaccines [7].

In January 2021, the President of Ukraine, Volodymyr Zelensky, called upon the EU to support Eastern Partnership countries, including Ukraine, in matters of joint procurement procedures and accelerating the supply of vaccines [8]. Prior to that, 13 foreign ministers from EU member states authored a joint letter calling upon the European Commission to help Eastern Partnership countries, including Ukraine, secure access to COVID-19 vaccines [9].

Furthermore, the European Centre for Disease Prevention and Control (ECDC) has conducted assessments in Ukraine to evaluate the strengths and weaknesses of its national system for the prevention and control of communicable diseases [10]. However, there is no evidence on the website of the ECDC of an institutionalized agreement to provide emergency support to Ukraine [11].

[1] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[2] Ministry of Foreign Affairs of Ukraine. [<https://mfa.gov.ua/>] Accessed 4 February 2021.

[3] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.

[4] European Commission. 2018. "Crisis in Eastern Ukraine: The EU Announces €24 million for Ongoing Humanitarian Needs." [https://ec.europa.eu/echo/news/crisis-eastern-ukraine-eu-announces-24-million-ongoing-humanitarian-needs_en]. Accessed 4 February 2021.

[5] Reliefweb. 2020. "Ukraine: €10 million in Humanitarian aid to Withstand Winter and Coronavirus Pandemic".

[<https://reliefweb.int/report/ukraine/ukraine-10-million-humanitarian-aid-withstand-winter-and-coronavirus-pandemic>]. Accessed 4 February 2021.

- [6] Polska Pomoc. 2015. "Polish aid for Ukraine." [<https://www.polskapomoc.gov.pl/Polish,aid,for,Ukraine,2276.html>]. Accessed 4 February 2021.
- [7] Unknown author. 2016. "Hungary Sends 56 Tonnes of Humanitarian Aid to Ukraine." Daily News Hungary. [<https://dailynewshungary.com/hungary-sends-56-tonnes-humanitarian-aid-ukraine/>]. Accessed 4 February 2021.
- [8] Reuters. 2021. "Ukraine Asks EU Neighbours For More Help Getting COVID-19 Vaccines". [<https://www.reuters.com/article/ukraine-moldova/ukraine-asks-eu-neighbours-for-more-help-getting-covid-19-vaccines-idUSL8N2JN44T>]. Accessed 4 February 2021.
- [9] Emerging Europe. 2021. "EU Foreign Ministers Join Call for Eastern Partnership Countries to Get Covid-19 jabs". [<https://emerging-europe.com/news/eu-foreign-ministers-join-call-for-eastern-partnership-countries-to-get-covid-19-jabs/>]. Accessed 4 February 2021.
- [10] European Centre for Disease Prevention and Control. 2020. "ECDC International Relations Policy 2020". [https://www.ecdc.europa.eu/sites/portal/files/documents/ECDC%20International%20Relations%20Policy%202020-FINAL_0.pdf]. Accessed 26 February 2021.
- [11] European Centre for Disease Prevention and Control. [<https://www.ecdc.europa.eu/en>]. Accessed 26 February 2021.

5.2.1b

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

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

Current Year Score: 0

There is no evidence of agreements with neighbouring countries with regards to animal health emergencies.

There is no evidence of such agreements on the websites of the Ministry of Agrarian Policy and Food, the Ministry of Foreign Affairs, the State Emergency Service or the Ministry of Healthcare. [1, 2, 3, 4]

The law "On Veterinary Medicine" (adopted in 1992 and last modified in 2020), contains a section titled "International Cooperation"; however, it does not address cooperation with other countries in the area of emergency response. [5]

In addition, Ukraine is a member state of the World Organization for Animal Health (OIE); however, the OIE only "strongly encourages" member states to support each other in responding to animal health emergencies and does not mandate doing so [6].

- [1] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.
- [2] Ministry of Foreign Affairs of Ukraine. [<https://mfa.gov.ua/>]. Accessed 4 February 2021.
- [3] State Emergency Service of Ukraine. [<http://www.dsns.gov.ua/>]. Accessed 4 February 2021.
- [4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.
- [5] Verkhovna Rada. 1992. "On Veterinary Medicine" ("Про ветеринарну медицину"). [<https://zakon.rada.gov.ua/laws/show/2498-12#Text>]. Accessed 4 February 2021.
- [6] World Organization for Animal Health (OIE). "Planning for Emergencies". [<https://www.oie.int/solidarity/emergency-management/planning-for-emergencies/>]. Accessed 4 February 2021.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

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

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

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

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

Yes = 1, No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1, No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 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

Ukraine has allocated national funds to improve capacity to address epidemic threats within the past three years.

In 2019, the Cabinet of Ministers approved a spending program titled "Public Health and Anti-Epidemic Measures"; it called for funds from the national budget to be allocated to the state-run procurement agency (Medical Procurement of Ukraine) for the purchase of medical supplies, vaccines, test kits, and diagnostic supplies necessary for epidemic surveillance [1]. This program came into effect on January 1, 2020 and was active through August 2020 [2, 3].

In addition, in 2018, Ukraine transitioned to a new budgeting procedure for vaccines that ensures that the number of available vaccines is 25% greater than the forecasted requirement each year [4]. This budgeting plan was developed by the Ministry of Healthcare in cooperation with the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF), and it entailed a one-time purchase of excess vaccines, which will be replenished as new supplies arrive [4]. Vaccines procured under this new procedure included all those listed in Ukraine's Vaccine Calendar; among the diseases listed on the Calendar are diphtheria, measles, poliomyelitis, tuberculosis, influenza, and rubella [5, 6].

- [1] Cabinet of Ministers of Ukraine. 2020. "On the Allocation of Funds from the State Budget for the Programme 'Public Health and Anti-epidemic Measures' (Про затвердження Порядку використання коштів, передбачених у державному бюджеті для виконання програми 'Громадське здоров'я та заходи боротьби з епідеміями)". [<https://zakon.rada.gov.ua/laws/show/1121-2019-п#Text>]. Accessed 4 February 2021.
- [2] Apteka.ua. 2020. "Government Approves Budget Spending Program 'Public Health and Anti-Epidemic Measures' (Уряд схвалив порядок використання бюджетних коштів для програми 'Громадське здоров'я та заходи боротьби з епідеміями)". [<https://www.apteka.ua/article/529408>]. Accessed 12 February 2021.
- [3] Interfax Ukraine. 2020. "Cabinet of Ministers Changes Spending Procedures for 'Public Health and Anti-Epidemic Measures' Program' (Кабмін змінив порядок використання коштів за програмою 'Громадське здоров'я і заходи боротьби з епідеміями)". [<https://ua.interfax.com.ua/news/political/680624.html>]. Accessed 12 February 2021.
- [4] Interfax Ukraine. 2018. "Buffer Supply of Vaccine Will Be Purchased One Time and Replenished from New Arrivals (Буферний запас вакцин буде закуплено один раз, буде оновлюватися з нових поставок)". [<https://ua.interfax.com.ua/news/pharmacy/488776.html>]. Accessed 4 February 2021.
- [5] Ministry of Healthcare of Ukraine. 2018. "Confirming the Procedure of Calculating Requirements for Vaccines and Medical Goods Used For Preventive Immunization, and the Procedure for Determining Vaccine Requirements and Medical Goods Used for Immunization" ("Про затвердження Методики розрахунку потреби в медичних імунобіологічних препаратах (вакцинах) та медичних виробів, які використовуються для профілактичних щеплень, та Порядку визначення потреби в медичних імунобіологічних препаратах (вакцинах) та медичних виробів, які використовуються для профілактичних щеплень"). [<https://zakon.rada.gov.ua/laws/show/z0664-18#Text>]. Accessed 12 February 2021.
- [6] Ministry of Healthcare of Ukraine. 2014. "Improvements to the Administration of Preventive Vaccines in Ukraine" ("Про удосконалення проведення профілактичних щеплень в Україні"). [<https://zakon.rada.gov.ua/laws/show/z1237-14#n18>]. Accessed 12 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: 1

There is a special emergency public fund that Ukraine can access in the face of a public health emergency.

The State Reserve Fund serves as a source of funding in the event of emergencies "of a technogenic, environmental, or social nature" and is overseen by the Cabinet of Ministers of Ukraine [1]. Public health emergencies are not explicitly mentioned in the law on the State Reserve Fund, adopted in 2002 and updated in 2020; however, funds have been allocated from the Reserve Fund to combat COVID-19 [1, 2].

In addition, according to the "State Emergency Response Plan" (adopted 2018, last amended 2020) the Ministry of Healthcare maintains a special fund for emergency situations (a term that explicitly includes public health emergencies) and is responsible for its use [3]. The Plan does not give the fund a name and contains no specifications of the fund's value or the purposes for which it can be used [3]. There is no information about the fund on the website of the Ministry of Healthcare [4].

Ukraine is not eligible for World Bank pandemic funding [5, 6].

[1] Cabinet of Ministers of Ukraine. 2020. "On the Procedure of Allocation of Funding from the Budget Reserve Fund (Про затвердження Порядку використання коштів резервного фонду бюджету)". [<https://zakon.rada.gov.ua/laws/show/415-2002-п#Text>]. Accessed 4 February 2021.

[2] Government of Ukraine. 2020. "Ministry of Finance Ensures Transparency and Efficiency of Spending from the Fund to Combat COVID-19 (Мінфін забезпечує прозорість та ефективність використання коштів Фонду для боротьби з COVID-19)". [<https://www.kmu.gov.ua/news/minfin-zabezpechuye-prozorst-ta-efektivnist-vikoristannya-koshtiv-fondu-dlya-borotbi-z-covid-19>]. Accessed 4 February 2021.

[3] Cabinet of Ministers of Ukraine. 2018. "State Emergency Response Plan. (План реагування на надзвичайні ситуації державного рівня.)" [<http://zakon.rada.gov.ua/laws/show/223-2018-%D0%BF>]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua/>]. Accessed 4 February 2021.

[5] International Development Association. 2017. "Borrowing Countries." World Bank. [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 4 February 2021.

[6] Pandemic Emergency Financing Facility. 2017. "Operational Brief for Eligible Countries." World Bank. [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 4 February 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 senior leaders in Ukraine have made public commitments to improve domestic capacity to address epidemic threats. Similarly, there is no evidence of commitments to support other countries' capacity.

However, there is evidence of support for funding for preparedness efforts. In 2018, Ukraine transitioned to a new budgeting procedure for vaccines that ensures that the number of available vaccines is 25% greater than the forecasted requirement each year [1, 2]. This budgeting plan was developed by the Ministry of Healthcare in cooperation with the World Health Organization (WHO) and the United Nations International Children's Emergency Fund (UNICEF) and it entailed a one-time purchase of excess vaccines, which will be replenished as new supplies arrive [1, 2]. The then-Minister of Healthcare of Ukraine, Ulana Suprun, commented that the new budgeting practices would ensure that the country had a reliable stock of vaccines [3]. Vaccines procured under this new procedure included all those listed in Ukraine's Vaccine Calendar; among the diseases listed on the Calendar are diphtheria, measles, poliomyelitis, tuberculosis, influenza, and rubella [2, 4].

In addition, in 2019, the Cabinet of Ministers approved a spending program entitled, "Public Health and Anti-Epidemic Measures"; it called for funds from the national budget to be allocated to the state-run procurement agency (Medical Procurement of Ukraine) for the purchase of medical supplies, vaccines, test kits, and diagnostic supplies necessary for epidemic surveillance [5]. This program came into effect on January 1, 2020 and was active as of August 2020 [6, 7].

No evidence could be found on the websites of the Ministry of Health, Ministry of Foreign Affairs, or WHO that senior Ukrainian leaders have committed to improving other countries' capacity to address epidemic threats [8, 9, 10].

[1] Interfax Ukraine. 2018. "Buffer Supply of Vaccine Will Be Purchased One Time and Replenished from New Arrivals (Буферний запас вакцин буде закуплено один раз, буде оновлюватися з нових поставок)". [<https://ua.interfax.com.ua/news/pharmacy/488776.html>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. 2018. "Confirming the Procedure of Calculating Requirements for Vaccines and Medical Goods Used for Preventive Immunization, and the Procedure for Determining Vaccine Requirements and Medical Goods Used for Immunization (Про затвердження Методики розрахунку потреби в медичних імунобіологічних препаратах (вакцинах) та медичних виробів, які використовуються для профілактичних щеплень, та Порядку визначення потреби в медичних імунобіологічних препаратах (вакцинах) та медичних виробів, які використовуються для профілактичних щеплень)". [<https://zakon.rada.gov.ua/laws/show/z0664-18#Text>]. Accessed 12 February 2021.

[3] Ministry of Healthcare of Ukraine. 2018. "MoH Will Adopt International Vaccine Procurement Standards (МОЗ замовлятиме вакцини за міжнародними стандартами розрахунку)". [<https://moz.gov.ua/article/news/moz-zamovljatime-vakcini-za-mizhnarodnimi-standartami-rozrahunku->]. Accessed 4 February 2021.

[4] Ministry of Healthcare of Ukraine. 2014. "Improvements to the Administration of Preventive Vaccines in Ukraine (Про удосконалення проведення профілактичних щеплень в Україні)". [<https://zakon.rada.gov.ua/laws/show/z1237-14#n18>]. Accessed 12 February 2021.

[5] Cabinet of Ministers of Ukraine. 2020. "On the Allocation of Funds from the State Budget for the Program 'Public Health and Anti-epidemic Measures' (Про затвердження Порядку використання коштів, передбачених у державному бюджеті для виконання програми 'Громадське здоров'я та заходи боротьби з епідеміями')".

[<https://zakon.rada.gov.ua/laws/show/1121-2019-п#Text>]. Accessed 4 February 2021.

[6] Apteka.ua. 2020. "Government Approves Budget Spending Program 'Public Health and Anti-Epidemic Measures' (Уряд схвалив порядок використання бюджетних коштів для програми 'Громадське здоров'я та заходи боротьби з епідеміями')". [<https://www.apteka.ua/article/529408>]. Accessed 12 February 2021.

[7] Interfax Ukraine. 2020. "Cabinet of Ministers Changes Spending Procedures for 'Public Health and Anti-Epidemic Measures' Program' (Кабмін змінив порядок використання коштів за програмою 'Громадське здоров'я і заходи боротьби з епідеміями')". [<https://ua.interfax.com.ua/news/political/680624.html>]. Accessed 12 February 2021.

[8] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[9] Ministry of Foreign Affairs of Ukraine. [<https://mfa.gov.ua/>] Accessed 4 February 2021.

[10] World Health Organization (WHO). "Ukraine". [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 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

There is evidence that Ukraine has invested finances to improve capacity to address epidemic threats in the past three years, but it has not supported other countries' epidemic response capacity.

In April 2018, the Ministry of Health of Ukraine signed an agreement to procure vaccines and antiretroviral drugs through the United Nations Development Program (UNDP), the United Nations Children's Fund (UNICEF), and the United Kingdom-based procurement agency Crown Agents. UNICEF also provided technical support to Ukraine in reforming its medical procurement process [1].

In addition, in 2018, Ukraine transitioned to a new budgeting procedure for vaccines that ensures that the number of available vaccines is 25% greater than the forecasted requirement each year. This budgeting plan was developed by the Ministry of Healthcare with technical support from the World Health Organization (WHO) and UNICEF, and it entailed a one-time purchase of excess vaccines, which will be replenished as new supplies arrive [2].

Since 2018, Ukraine has received over IS\$300m from international donors in health security investments, as per the Global Health Security (GHS) Funding Tracker [3].

Ukraine has not disbursed any funds to other countries to support their health security capacity since 2014, which is corroborated by the Global Health Security Funding Tracker [4]. No further information regarding this could be found on the websites of the Ministry of Health, Ministry of Foreign Affairs, or WHO [5, 6, 7].

[1] United Nations Children's Fund (UNICEF). 2018. "Ministry of Health Signs Agreements with International Organizations for Procurement of Medicine for the 2018 Budget". [<https://www.unicef.org/ukraine/en/press-releases/ministry-health-signs-agreements-international-organizations-procurement-medicine>]. Accessed 4 February 2021.

- [2] Interfax Ukraine. 2018. "Buffer Supply of Vaccine Will Be Purchased One Time and Replenished from New Arrivals (Буферний запас вакцин буде закуплено один раз, буде оновлюватися з нових поставок)". [<https://ua.interfax.com.ua/news/pharmacy/488776.html>]. Accessed 4 February 2021.
- [3] Global Health Security (GHS) Tracking. "Recipient Profile: Ukraine". [<https://tracking.ghscosting.org/details/1073/recipient>]. Accessed 2 May 2021.
- [4] Global Health Security (GHS) Tracking. "Funder Profile: Ukraine". [<https://tracking.ghscosting.org/details/236/recipient>]. Accessed 2 May 2021.
- [5] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.
- [6] Ministry of Foreign Affairs of Ukraine. [<https://mfa.gov.ua/>] Accessed 4 February 2021.
- [7] World Health Organization (WHO). "Ukraine". [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 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 plan for sharing data or specimens with other countries or with international organizations that goes beyond influenza.

Ukraine's Ministry of Agrarian Policy and Food does have a number of bilateral agreements (namely, with its counterparts in Czechia, Hungary, Turkey, Belarus, Kyrgyzstan, and Slovakia) that include provisions to share "biological materials"; however, pathogens with pandemic potential are not explicitly mentioned [1, 2, 3, 4, 5, 6].

However, there is evidence that Ukraine shares biological materials with international organizations. For example, in January 2021, Ukraine's Deputy Minister of Healthcare stated that the country would send 150-200 samples per month to the World Health Organization (WHO) in Berlin, Germany to detect the "British" strain of COVID-19 [7].

No evidence of a plan to share biological materials could be found on the websites of the Ministry of Healthcare, the Ministry of Agrarian Policy and Food, or the Ministry of Education and Science [8, 9, 10].

- [1] Verkhovna Rada. 1993. "Agreement Between the Ministry of Agriculture and Food of Ukraine and the Ministry of Agriculture of Hungary on Economic, Scientific and Industrial Cooperation (Угода між Міністерством сільського господарства і продовольства України і Міністерством землеробства Угорської Республіки про економічне, науково-технічне та виробниче співробітництво)". [https://zakon.rada.gov.ua/laws/show/348_328#Text]. Accessed 4 February 2021.
- [2] Verkhovna Rada. 1993. "Agreement Between the Ministry of Agriculture and Food of Ukraine and the Ministry of Agriculture of the Czech Republic on Economic, Technical, and Industrial Cooperation (Угода між Міністерством сільського господарства і продовольства України і Міністерством сільського господарства Чеської Республіки про економічне, науково-технічне та виробниче співробітництво)". [https://zakon.rada.gov.ua/laws/show/203_036#Text]. Accessed 4 February 2021.
- [3] Verkhovna Rada. 1992. "Agreement on Technical, Scientific and Economic Cooperation between the Ministry of Agriculture of Ukraine and the Ministry of Agriculture and Rural Affairs of Turkey (Протокол про технічне, наукове та економічне співробітництво між Міністерством сільського господарства України і Міністерством сільського господарства та сільських справ Турецької Республіки)". [https://zakon.rada.gov.ua/laws/show/792_006#Text]. Accessed 4 February 2021.
- [4] Verkhovna Rada. 1997. "Agreement Between the Ministry of Agriculture and Food of Ukraine and the Ministry of Agriculture and Food of the Republic of Belarus on Economic and Technical Cooperation (Угода між Міністерством сільського господарства і продовольства України та Міністерством сільського господарства і продовольства Республіки Білорусь про економічне і науково-технічне співробітництво)". [https://zakon.rada.gov.ua/laws/show/112_149#Text]. Accessed 4 February 2021.
- [5] Verkhovna Rada. 1997. "Agreement Between the Ministry of Agriculture and Food of Ukraine and the Ministry of Agriculture and Water of the Republic of Kyrgyzstan on Economic and Scientific Cooperation (УГОДА між Міністерством сільського господарства і продовольства України та Міністерством сільського і водного господарства Киргизької Республіки про економічне і науково-технічне співробітництво)". [<https://ips.ligazakon.net/document/view/MU97497?an=2>]. Accessed 4 February 2021.
- [6] Verkhovna Rada. 1993. "Agreement Between the Ministry of Agriculture and Food of Ukraine and the Ministry of Land Affairs of the Slovak Republic on Economic, Scientific, and Industrial Cooperation" (УГОДА між Міністерством сільського господарства і продовольства України і Міністерством землеробства Словацької Республіки про економічне, науково-технічне та виробниче співробітництво)". [<https://ips.ligazakon.net/document/MU93522?an=2>]. Accessed 4 February 2021.
- [7] Interfax Ukraine. 2021. "Ukraine Will Send its First Samples to a WHO Laboratory to Detect the British Strain of COVID-19 on January 19-21—Lyashko ("Україна 19-21 січня направить до лабораторії ВООЗ перші зразки для виявлення британського штаму COVID-19 - Ляшко)". [<https://ua.interfax.com.ua/news/general/714834.html>]. Accessed 4 February 2021.
- [8] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.
- [9] Ministry of Agrarian Policy and Food of Ukraine. [<https://agro.me.gov.ua/>]. Accessed 4 February 2021.
- [10] Ministry of Education and Science of Ukraine. [<https://mon.gov.ua/ua>]. Accessed 4 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 Ukraine has failed to share influenza samples during an outbreak in the past two years.

There is no evidence of such a failure on the World Health Organization's (WHO) website or in Ukrainian or international news media [1].

Ukraine's last major influenza outbreak was in 2009 and on that occasion samples were shared with the WHO [2].

[1] World Health Organization (WHO). "Ukraine" [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 February 2021.

[2] Unknown author. 2009. "WHO 'Assumes' Ukraine Gripped by Swine Flu." The Independent.

[<https://www.independent.co.uk/life-style/health-and-families/health-news/who-assumes-ukraine-gripped-by-swine-flu-1814111.html>]. Accessed 4 February 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 evidence that Ukraine has not shared pandemic pathogen samples in the past two years.

No evidence could be found on the websites of the World Health Organization (WHO), the Ministry of Healthcare of Ukraine, or local/international news media [1, 2].

In January 2021, for example, Ukraine's Deputy Minister of Healthcare stated that the country would send 150-200 samples per month to the World Health Organization in Berlin, Germany to detect the "British" strain of COVID-19 [3].

[1] World Health Organization. "Ukraine" [<https://www.euro.who.int/en/countries/ukraine>]. Accessed 4 February 2021.

[2] Ministry of Healthcare of Ukraine. [<http://moz.gov.ua>]. Accessed 4 February 2021.

[3] Interfax Ukraine. 2021. "Ukraine Will Send its First Samples to a WHO Laboratory to Detect the British Strain of COVID-19 on January 19-21 - Lyashko" ("Україна 19-21 січня направить до лабораторії ВООЗ перші зразки для виявлення британського штаму COVID-19 - Ляшко"). [<https://ua.interfax.com.ua/news/general/714834.html>]. Accessed 4 February 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: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 33

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 0

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: 2

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: 1

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 0

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: 0

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 100

2012

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: 0.72

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

2018

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 0

According to the International Labor Organization (ILO), informal employment accounts for approximately 24% of the total employment in Ukraine [1]. The ILO is involved in European Union (EU)-funded efforts to reduce the share of informal employment in the Ukrainian labor market [1].

[1] International Labour Organization. 2019. "ILO helps Ukraine to reduce undeclared work".

[https://www.ilo.org/budapest/whats-new/WCMS_672587/lang--en/index.htm]. Accessed 4 February 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: 0

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 1

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.27

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: 1

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 2

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 69.47

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: 0.24

2008-2018

World Bank; Economist Impact

6.4.3 Natural disaster risk

6.4.3a

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

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

Current Year Score: 2

2021

Economist Intelligence

6.5 PUBLIC HEALTH VULNERABILITIES

6.5.1 Access to quality healthcare

6.5.1a

Total life expectancy (years)

Input number

Current Year Score: 71.58

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: 649

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 16.7

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 25.5

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 24.1

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: 93.79

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 96.22

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: 327.21

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: 0

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

Share of population that trust medical and health advice from health professionals , More than 80% = 2, Between 60-80%, or no data available = 1, Less than 60% = 0

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018