

Ireland

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

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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: 2

There is evidence of a national AMR plan for the surveillance, detection, and reporting of priority AMR pathogens in Ireland. Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 (iNAP) is the national plan for the surveillance, detection and reporting of priority AMR pathogens. [1] The iNAP describes current systems in place for surveillance, detection and reporting, as well as specific interventions and priorities for the coming years. [1] Strategy Objective 2 in the iNAP provides a comprehensive overview of plans to enhance surveillance—including conducting a gap analysis of surveillance capabilities to identify areas to enhance—and describes strategic interventions and activities to improve detection, such as implementing a national laboratory system that has "capacity to produce high-quality microbiological data". [1] The iNAP points to a number of reporting mechanisms in place, such as the Computerised Infectious Disease Reporting (CIDR), which leads to weekly, quarterly and annual reports. [1] The iNAP also describes reports to develop moving forward, such as joint surveillance report(s) between the animal and human health sectors. [1] The Health Protection Surveillance Centre (HPSC) part of the Health Service Executive (HSE), Ireland's public health services agency, coordinates the national AMR surveillance. [2] Since 2017, Ireland has been a member of the EU Joint Programming Initiative on Antimicrobial Resistance (JPIAMR), the largest international research initiative aimed at AMR. [3]

[1] Department of Health of Ireland. 2017. "iNAP: Ireland's National Action Plan on Antimicrobial Resistance 2017-2020". [<https://assets.gov.ie/9519/afcba9bce7c54bf9bcbe9a74f49fdaf2.pdf>]. Accessed 8 February 2021.

[2] World Health Organization. "Global AMR Surveillance System (GLASS) country profiles: Ireland". [<http://apps.who.int/gho/tableau-public/tpc-frame.jsp?id=2004>]. Accessed 8 February 2021.

[3] Norlin, Paula. 29 March 2017. "Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) news: Ireland joins international initiative to tackle Antimicrobial Resistance". [<https://www.jpiaamr.eu/?s=Ireland>]. Accessed 8 February 2021.

1.1.1b

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

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

Current Year Score: 2

Ireland has a national laboratory system that tests for all 7+1 priority AMR pathogens. The Health Protection Surveillance Centre (HPSC), part of the Health Service Executive (HSE), Ireland's public health services agency, participates in the European Antimicrobial Resistance Surveillance Network (EARS-Net). [1] HPSC's Enhanced EARS-Net Surveillance reporting for 2017 includes data on 4 of the 7+1 priority AMR pathogens: E. coli, K. pneumoniae, S. aureus, S. pneumoniae from 16

microbiology laboratories. [2] Regarding *N. gonorrhoeae*, Ireland participates in the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP), providing data on centralised testing from the Interim National Gonococcal Reference Laboratory, an accredited testing laboratory. [3, 4] The National Salmonella, Shigella and Listeria Reference Laboratory (NSSLRL) tests for *Salmonella* spp. and *Shigella* spp. [5] HPSC also tracks *Mycobacterium tuberculosis*, and Ireland has a sentinel surveillance project for influenza. [6, 7]

[1] European Centre for Disease Prevention and Control. "European Antimicrobial Resistance Surveillance Network (EARS-Net)". [<https://ecdc.europa.eu/en/about-us/partnerships-and-networks/disease-and-laboratory-networks/ears-net>]. Accessed 8 February 2021.

[2] Health Protection Surveillance Centre (HPSC) of Ireland. 2017. "Enhanced EARS-Net Surveillance 2017". [https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/europeanantimicrobialresistancesurveillancesystemears/enhancedbacteraemiasurveillance/enhancedears-netsurveillancereports/EARSNet_Enhanced_2017_H2.pdf]. Accessed 8 February 2021.

[3] Health Protection Surveillance Centre (HPSC) of Ireland. 2017. "National Guidelines for the Prevention and Control of Gonorrhoea and for minimising the impact of Antimicrobial Resistance in *Neisseria Gonorrhoea*". [<https://www.hpsc.ie/a-z/sexuallytransmittedinfections/gonorrhoea/amrgonorrhoea/amrgonorrhoeaguidance/AMR%20Gonorrhoea%20guidelines%20documentn%20FINAL%202017.pdf>]. Accessed 8 February 2021.

[4] Health Protection Surveillance Centre (HPSC) of Ireland. 2017. "Surveillance Reports (AMR Gonorrhoea)". [<https://www.hpsc.ie/a-z/sexuallytransmittedinfections/gonorrhoea/amrgonorrhoea/surveillancereports/>]. Accessed 8 February 2021.

[5] National Salmonella, Shigella & Listeria Reference Laboratory of Ireland. 2016. "National Salmonella, Shigella & Listeria Reference Laboratory of Ireland (Human Health): Annual Report for 2016". [<https://www.saolta.ie/sites/default/files/publications/NSSLRL%20Annual%20Report%202016.pdf>]. Accessed 8 February 2021.

[6] Health Protection Surveillance Centre (HPSC) of Ireland. "Tuberculosis (TB)". [<http://www.hpsc.ie/a-z/vaccinepreventable/tuberculosis/tb/>]. Accessed 8 February 2021.

[7] Health Service Executive (HSE) and Health Protection Surveillance Centre (HPSC) of Ireland. "Annual Epidemiological Reports". [<https://www.hpsc.ie/about/annualreports/>]. Accessed 8 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: 1

Ireland conducts environmental detection and surveillance for antimicrobial residues and AMR organisms. In the Antimicrobial Resistance Country Self Assessment, Ireland indicated that there is a functioning system in place to monitor discharge of waste into the environment. [1] Reports from the country's Environmental Protection Agency (EPA) detail research conducted to detect specific pathogens and AMR organisms in the country's water sources, including *E. coli* and Enterococci. [2, 3]

[1] World Health Organization. "Global Database for Antimicrobial Resistance Country Self Assessment 2017-2018 - Ireland (item 9.3, scored as "D")". [<http://amrcountryprogress.org/>]. Accessed 8 February 2021.

[2] Environmental Protection Agency (EPA) of Ireland. 2012. STRIVE Report N89. "Enhancing Human Health through Improved Water Quality". [http://www.epa.ie/researchandeducation/research/researchpublications/strivereports/EPA_Cormican_EHHWC_webFin%20

[1].pdf]. Accessed 8 February 2021.

[3] Environmental Protection Agency (EPA) of Ireland. 2015. Research Report No. 162. "Hospital Effluent: impact on the microbial environment and risk to human health".

[<http://www.epa.ie/pubs/reports/research/health/EPA%20162%20final%20web.pdf>]. Accessed 8 February 2021.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 1

There is evidence of national legislation or regulation in place requiring prescriptions for antibiotic use for humans in Ireland, but there is evidence of gaps in enforcement. In Ireland, prescriptions are required for antibiotic use for humans, which is explained in Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 (iNAP). [1] According to the Medicinal Products (Prescription and Control of Supply) Regulations 2003 (S.I. No. 540/2003), it is prohibited to supply prescription only medicines by mail order (including via the internet). [2] Ireland also has guidelines for antibiotic prescribing for humans, which include specific guidance, such as dosing antibiotics for children and drug interactions. [3, 4, 5] However, the "Antimicrobial Resistance and causes of non-prudent use of antibiotics in human medicine in the EU" report of 2017 by the European Commission notes that there is use of antibiotics without a prescription in Ireland, and that pharmacies are its main source. [6]

[1] Department of Health of Ireland. 2017. "iNAP: Ireland's National Action Plan on Antimicrobial Resistance 2017-2020". [<https://assets.gov.ie/9519/afcba9bce7c54bf9bcbe9a74f49fdaf2.pdf>]. Accessed 8 February 2021.

[2] Office of the Attorney General of Ireland. Statutory Instrument (S.I.) No. 540/2003 of 11 November 2003. "Medicinal Products (Prescription and Control of Supply) Regulations 2003".

[<http://www.irishstatutebook.ie/eli/2003/si/540/made/en/print>]. Accessed 8 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Antibiotic Prescribing". [<https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/>]. Accessed 8 February 2021.

[4] Health Service Executive (HSE) of Ireland. "Antibiotic Prescribing - Prescribing for Children".

[<https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/prescribing-for-children/>]. Accessed 8 February 2021.

[5] Health Service Executive (HSE) of Ireland. "Antibiotic Prescribing - Drug Interactions Table".

[<https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing/drug-interactions/>]. Accessed 8 February 2021.

[6] European Commission. 2017. "Antimicrobial Resistance and causes of non-prudent use of antibiotics in human medicine in the EU".

[https://ec.europa.eu/health/sites/health/files/antimicrobial_resistance/docs/amr_arna_report_20170717_en.pdf].

Accessed 8 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: 2

There is evidence of national legislation or regulation in place requiring prescriptions for antibiotic use for animals, and there is no evidence of gaps in enforcement in Ireland. As described in Ireland's National Action Plan on Antimicrobial Resistance

2017-2020 (iNAP), prescriptions are required for antibiotic use for animals and can only be prescribed by a veterinary practitioner who is providing care and has specific knowledge of the animal/s. [1] Two pieces of European Union legislation, Council Directive 2001/82/EC and Council Directive 90/167/EEC are the basis for Ireland's national legislation for the control of veterinary medicines and the production of medicated feeds, respectively. [1] Council Directive 90/167/EEC, to which EU Member States must adhere, requires a prescription to be issued by a veterinarian for medicated feeds. [2] The Council Directive 90/167/EEC is still valid until 27 January 2022, after which it will be replaced by the Regulation (EU) 2019/4 of the European Parliament and of the Council of 11 December 2018. This regulation still maintains the adherence to the requirement of a prescription to be issued by a veterinarian for medicated feeds. [3] The "Report on sales of veterinary antibiotics in Ireland during 2019" by the Health Products Regulatory Agency does not provide any evidence on antibiotics for animal use sold without prescription. The report notes that sales of antibiotics for animal use has fallen during 2019, which is an encouraging sign for prudent use of veterinary antibiotics. [4]

[1] Department of Health of Ireland. 2017. "iNAP: Ireland's National Action Plan on Antimicrobial Resistance 2017-2020". [https://assets.gov.ie/9519/afcba9bce7c54bf9bcbe9a74f49fdaf2.pdf]. Accessed 8 February 2021.

[2] Council of the European Union Directive No 90/167/EEC of 26 March 1990 "Laying down the conditions governing the preparation, placing on the market and use of medicated feedingstuffs in the Community". [https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A31990L0167]. Accessed 8 February 2021.

[3] The European Parliament and the Council of the European Union. Regulation (EU) 2019/4 of 11 December 2018. "On the manufacture, placing on the market and use of medicated feed, amending Regulation (EC) No 183/2005 of the European Parliament and of the Council and repealing Council Directive 90/167/EEC". Accessed 8 March 2021.

[4] Health Products Regulatory Agency. 2019. "Report on sales of veterinary antibiotics in Ireland during 2019". [http://www.hpra.ie/docs/default-source/default-document-library/report-on-sales-of-veterinary-antibiotics-in-ireland-during-2019.pdf?sfvrsn=0]. Accessed 8 February 2021.

1.2 ZOOBOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1, No = 0

Current Year Score: 1

There is evidence of national legislation, plans, or equivalent strategy documents on zoonotic disease in Ireland. There are several pieces of legislation pertaining to zoonotic diseases, which National Zoonoses Committee of Ireland—the national conglomerate of regional zoonoses committees, which consist of human and animal health experts—lists on their website.

[1] The list includes zoonoses-related Irish and European Union legislation covering human health, and zoonoses and zoonotic Agents, and food. [1] Ireland's Statutory Instrument (S.I.) No. 154/2004 are regulations to implement Directive 2003/99/EC of the European Union, on the monitoring of zoonoses and zoonotic agents. [2] Directive 2003/99/EC is intended to ensure proper monitoring and investigation of zoonoses, zoonotic agents, and related antimicrobial resistance. [3] The European Commission's Regulation (EC) No. 999/2001 includes rules concerning brucellosis, salmonellosis, and listeriosis, and Regulations (EC) No. 853/2004, No. 854/2004 and (EU) No. 2015/1375 includes measures to inspect meat for the presence of parasites, such as *Cysticercus* and *Trichinella*. [4, 5]

[1] National Zoonoses Committee (NZC) of Ireland. "About NZC". [http://www.zoonoses.ie/public/legislation.aspx]. Accessed 8 February 2021.

[2] Office of the Attorney General of Ireland. Statutory Instrument (S.I.) No. 154/2004 of 12 June 2004. "European Communities (Monitoring of Zoonoses) Regulations 2004". [<http://www.irishstatutebook.ie/eli/2004/si/154/made/en/print>]. Accessed 8 February 2021.

[3] European Parliament and the Council of the European Union. Directive 2003/99/EC of 17 November 2003. "Monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1540861133318&uri=CELEX:32003L0099>]. Accessed 8 February 2021.

[4] European Parliament and the Council of the European Union. Regulation (EC) No 854/2004 of 29 April 2004. "Laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004R0853>]. Accessed 8 February 2021.

[5] European Commission of the European Union. (EU) No 2015/1375 of 10 August 2015. "Laying down specific rules on official controls for Trichinella in meat". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1536195555051&uri=CELEX:32015R1375>]. Accessed 8 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, plans or equivalent strategy document(s) which includes measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. There are several pieces of legislation pertaining to zoonotic diseases, which National Zoonoses Committee of Ireland—the national conglomerate of regional zoonoses committees, which consist of human and animal health experts—lists on their website. [1] The list however does not include legislation pertaining to risk identification and reduction of zoonotic disease spillover events from animals to humans. It includes zoonoses-related Irish and European Union legislation covering human health, and zoonoses and zoonotic Agents, and food. [1] Ireland's Statutory Instrument (S.I.) No. 154/2004 are regulations to implement Directive 2003/99/EC of the European Union, on the monitoring of zoonoses and zoonotic agents. [2] Directive 2003/99/EC is intended to ensure proper monitoring and investigation of zoonoses, zoonotic agents, and related antimicrobial resistance. [3] The European Commission's Regulation (EC) No. 999/2001 includes rules concerning brucellosis, salmonellosis, and listeriosis, and Regulations (EC) No. 853/2004, No. 854/2004 and (EU) No. 2015/1375 includes measures to inspect meat for the presence of parasites, such as *Cysticercus* and *Trichinella*. [4, 5] There is no further evidence found on the websites of the Department of Health, and the Department of Agriculture, Food and the Marine (DAFM). [6, 7]

[1] National Zoonoses Committee (NZC) of Ireland. "About NZC". [<http://www.zoonoses.ie/public/legislation.aspx>]. Accessed 28 February 2021.

[2] Office of the Attorney General of Ireland. Statutory Instrument (S.I.) No. 154/2004 of 12 June 2004. "European Communities (Monitoring of Zoonoses) Regulations 2004". [<http://www.irishstatutebook.ie/eli/2004/si/154/made/en/print>]. Accessed 28 February 2021.

[3] European Parliament and the Council of the European Union. Directive 2003/99/EC of 17 November 2003. "Monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1540861133318&uri=CELEX:32003L0099>]. Accessed 28 February 2021.

[4] European Parliament and the Council of the European Union. Regulation (EC) No 854/2004 of 29 April 2004. "Laying down specific rules for the organisation of official controls on products of animal origin intended for human consumption". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004R0853>]. Accessed 28 February 2021.

[5] European Commission of the European Union. (EU) No 2015/1375 of 10 August 2015. "Laying down specific rules on

official controls for Trichinella in meat". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1536195555051&uri=CELEX:32015R1375>]. Accessed 28 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 28 February 2021.

[7] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 28 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 national legislation, plans, or guidelines that account for the surveillance and control of multiple zoonotic pathogens of public health concern in Ireland. Ireland has plans, both through the European Union and on its own, that account for the surveillance and control of multiple zoonotic pathogens of public health concern. Directive 2003/99/EC of the European Parliament and of the Council of the European Union on the monitoring of zoonoses and zoonotic agents requires that European Member States, which includes Ireland, monitor specific zoonoses and zoonotic agents, including brucellosis, listeriosis, and salmonellosis. [1, 2] The European Food Safety Authority (EFSA)'s manual regarding Directive 2003/99/EC, details the process for monitoring and reporting. [3] The 2016 Surveillance Report from the Department of Agriculture, Food and the Marine and the Agri-Food and Biosciences Institute in Ireland discusses isolation and identification of the following zoonoses: campylobacteriosis, cryptosporidiosis, erysipelas, giardiasis, leptospirosis, listeriosis, Q fever, salmonellosis, and toxoplasmosis. [4]

[1] European Parliament and the Council of the European Union. Regulation (EC) No 2003/99/EC of 17 November 2003.

"Monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC ". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003L0099>]. Accessed 8 February 2021.

[2] Food Safety Authority of Ireland. "Monitoring of Zoonoses and Zoonotic Agents".

[https://www.fsai.ie/legislation/food_legislation/zoonoses/monitoring_zoonoses.html]. Accessed 8 February 2021.

[3] Boelaert, F., Rizzi, V., Van der Stede, Y., A-V, Stoicescu. European Food Safety Authority (EFSA). 25 January 2018.

"TECHNICAL REPORT: Manual for reporting on zoonoses and zoonotic agents, within the framework of Directive 2003/99/EC, and on some other pathogenic microbiological agents for information derived from the year 2017".

[<https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2018.EN-1370>]. Accessed 8 February 2021.

[4] Department of Agriculture, Food and the Marine (DAFM) and Agri-Food and Biosciences Institute (AFBI) of Ireland. 2016.

"All-Island Disease Surveillance Report 2016."

[<https://www.afbini.gov.uk/sites/afbini.gov.uk/files/publications/All%20Island%20Disease%20Surveillance%20Report%202016.pdf>]. Accessed 8 February 2021.

1.2.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence of a department, agency, or similar unit dedicated to zoonotic disease that functions across ministries in Ireland. No such unit exists in connection with the Department of Health or the Department of Agriculture, Food and the Marine. [1, 2] However, the National Zoonoses Committee (NZC) of Ireland—the national conglomerate of regional

zoonoses committees, which consist of human and animal health experts but does not sit under any particular agency or department—serves as a national forum for the country's Regional Zoonoses Committees and is intended to provide exchange of timely information of zoonotic disease. [3] Members of the NZC include representatives from the Health Service Executive, the Health Protection Surveillance Centre, and Department of Agriculture. [3] However, there is no information regarding whether the NZC functions across ministries.

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 February 2021.

[2] Department of Agriculture, Food and the Marine of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 8 February 2021.

[3] National Zoonoses Committee of Ireland. [<http://www.zoonoses.ie/public/about.aspx>]. Accessed 8 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: 1

Ireland has a national mechanisms for owners of livestock to conduct and report on disease surveillance to Ireland's Department of Agriculture, Food and the Marine (DAFM). The DAFM's Animal Health Surveillance Strategy for Ireland 2016-2021 explains there are five central veterinary divisions in DAFM that work together with relevant administrative divisions to draw up active surveillance programmes (27 programmes in 2015), which are then implemented by veterinary, technical and administrative staff based in 16 Regional Veterinary Offices (RVOs). [1] A list of diseases—such as Foot and Mouth Disease, Salmonellosis, and Trichinellosis—that must be notified to the DAFM is provided on the department's website, per the Notification of Diseases Affecting Terrestrial Animals Regulations 2016 (S.I. No. 130 of 2016), amended by S.I. No. 408 of 2017. [2] Whether suspected or confirmed, the diseases on this list must be reported to DAFM by a livestock owner or any person who has reasonable grounds to suspect that an animal or animal product is affected. [3] Ireland's Regional Veterinary Laboratories is a laboratory network of the DAFM that provides diagnostic service to veterinary practitioners and farmers. [4]

[1] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Animal Health Surveillance Strategy for Ireland 2016-2021".

[<http://www.animalhealthsurveillance.agriculture.gov.ie/media/animalhealthsurveillance/content/publications/AHSDOC140717.pdf>]. Accessed 8 February 2021.

[2] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "List of Notifiable Diseases".

[<https://www.agriculture.gov.ie/animalhealthwelfare/diseasecontrol/listofnotifiablediseases/>]. Accessed 8 February 2021.

[3] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 130/2016. "Notification and Control of Diseases affecting Terrestrial Animals (No. 2) Regulations 2016.". [<http://www.irishstatutebook.ie/eli/2016/si/130/made/en/print>]. Accessed 8 February 2021.

[4] Government of Ireland. "Regional Veterinary Laboratories". [<https://www.gov.ie/en/service/7f9f7-laboratory-services/>]. Accessed 8 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: 1

There are laws and guidelines that safeguard the confidentiality of information generated through surveillance activities for animals (for owners) in Ireland. The Department of Agriculture, Food and the Marine (DAFM)'s Animal Health Surveillance Strategy for Ireland 2016-2021 states that surveillance requirements must be in compliance with the Data Protection Act. [1] The DAFM website summarizes its role and relevant information from the Ireland's Data Protection Act 1988 as amended by the 2003 Data Protection Act, The Data Protection Act 2018 and The General Data Protection Regulations (EU 2016/679), which came into effect on 25 May 2018, including: "Where possible the Department will anonymise or pseudonymise (mask) personal data so that the personal data will only be available to those who have a clear business need to see it". [2] In addition, DAFM provides a Data Protection Notice, ensuring the safety and security of all personal data submitted as part of the Animal Identification and Movement (AIM) system. [3] The Veterinary Council of Ireland's Code of Professional Conduct for Veterinary Practitioners states that practitioners must consider information concerning an animal under his/her care as confidential to the owner except in certain cases, such as when required by law or with the owners' consent. [4]

[1] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Animal Health Surveillance Strategy for Ireland 2016-2021".

[<http://www.animalhealthsurveillance.agriculture.gov.ie/media/animalhealthsurveillance/content/publications/AHSDOC140717.pdf>]. Accessed 8 February 2021.

[2] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Information on Data Protection".

[<https://www.agriculture.gov.ie/dataprotection/informationondataprotection/#d.en.113402>]. Accessed 8 February 2021.

[3] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Data Protection Notice - Animal Identification and Movement (AIM)". [<https://www.agriculture.gov.ie/animalhealthwelfare/animalidentificationmovement/>]. Accessed 8 February 2021.

[4] Veterinary Council of Ireland. "Code of Professional Conduct". [<http://www.vci.ie/Publications/Code-of-Professional-Conduct>]. Accessed 8 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 that Ireland conducts surveillance of zoonotic disease in wildlife. The Department of Agriculture, Food and the Marine and the Agri-Food and Biosciences Institute of Ireland conduct surveillance of a wide range of wildlife species—birds, rabbits, hares, otters, deer and badgers—towards detection of diseases, such as avian influenza and tuberculosis. [1] Avian species are tested for avian influenza for the zoonotic potential of this disease. [1] The Health Protection Surveillance Centre (HPSC)—which is part of the Health Service Executive, Ireland's public health services agency—lists several wild animal-related diseases found in the human population of Ireland, however, there is no publicly available information on surveillance of these diseases in wildlife. [2] The HPSC also conducts surveillance for the types of diseases that are carried by mosquitoes, including malaria, West Nile, chikungunya, and dengue viruses. [3]

[1] Department of Agriculture, Food and the Marine (DAFM) and Agri-Food and Biosciences Institute (AFBI) of Ireland. 2016. "All-Island Disease Surveillance Report 2016."

[<https://www.afbini.gov.uk/sites/afbini.gov.uk/files/publications/All%20Island%20Disease%20Surveillance%20Report%202016.pdf>]. Accessed 10 February 2021.

[2] Health Protection Surveillance Centre (HPSC) of Ireland. "Wild Animals". [<http://www.hpsc.ie/az/zoonotic/petsandotheranimals/browsebyanimal/wildanimals/>]. Accessed 10 February 2021.

[3] Health Protection Surveillance Centre (HPSC) of Ireland. "Vectorborne Diseases - Mosquitos - Fact Sheet".
[<http://www.hpsc.ie/a-z/vectorborne/mosquitoes/factsheet/>]. Accessed 10 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: 1

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 78.03

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: -

No data available

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: 1

There is evidence that Ireland's plans related to zoonotic disease include mechanisms for working with the private sector in controlling or responding to zoonoses. The Department of Agriculture, Food and the Marine (DAFM)'s Animal Health

Surveillance Strategy for Ireland 2016-2021 mentions private commercial labs supporting animal health-related testing services and industry-led disease control programs, and describes surveillance programs undertaken by commercial enterprises as being supervised by DAFM. [1] No additional details could be found on the role of the private sector in controlling or responding to zoonoses through Ireland's Department of Health or the Health Protection Surveillance Centre (HPSC). [2, 3]

[1] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Animal Health Surveillance Strategy for Ireland 2016-2021".

[<http://www.animalhealthsurveillance.agriculture.gov.ie/media/animalhealthsurveillance/content/publications/AHSDOC140717.pdf>]. Accessed 10 February 2021.

[2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[3] Health Protection Surveillance Centre (HPSC) of Ireland. [<http://www.hpsc.ie/>]. Accessed 10 February 2021.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Ireland has in place a record, updated within the past five years, of the facilities in which especially dangerous pathogens and toxins are stored or processed, including details on inventories and inventory management systems of those facilities . Although there is evidence that facilities are required to seek permission before working with dangerous substances, no evidence could be found that this includes details on inventories and inventory management systems of those facilities. The Health and Safety Authority of Ireland requires notification 30 days prior to commencement of work with groups 2, 3, and 4 biological agents, and notification is required for storage of these agents in a culture collection. Furthermore, the policy notes that "if a group 2 - 4 biological agent is being stored in a culture collection, this will need to be notified to the Authority as the collection will need to be maintained and this will involve viability checks of the agent and deliberate propagation." [1] No further information is available via the Health Protection Surveillance Centre. [2] Although Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988, no further information is available via these reports. [3] However the reports indicate that there are no Biosafety Level 4 (BL4) laboratories but approximately 36 BL3 laboratories that handle Category 3 pathogens. Some information is provided on where pathogens are processed—including B. anthracis at Cherry Orchard Hospital, Dublin, and Ebola and influenza at the National Virus Reference Laboratory—but there is no information available on inventory and inventory management. There is also no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [4]. Lastly, there is no evidence provided by the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [5, 6, 7, 8, 9, 10]

[1] Health and Safety Authority of Ireland "Biological Agents Notification".

[https://www.hsa.ie/eng/Topics/Biological_Agents/Legislation/Notification/]. Accessed 10 February 2021.

[2] Health Protection Surveillance Centre (HPSC) of Ireland. "Computerised Infectious Disease Reporting".

[<http://www.hpsc.ie/cidr/>]. Accessed 10 February 2021.

[3] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.

[4] Verification Research, Training and Information Centre (VERTIC) Database.

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

[5] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[6] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[7] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 10 February 2021.

[8] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[9] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[10] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/department-of-defence/>]. Accessed 10 February 2021.

1.3.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Ireland has 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. Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. [1] The reports refer to the Biological Weapons Act of 2011--the national legislation that contains provisions for criminal offences to prohibit possession, development, and transfer of biological weapons--and biosafety measures, but not biosecurity. [1, 2] Part 5, Special Measures, of S.I. No. 572 of 2013, requires health care and laboratory facilities apply containment measures for group 2-4 biological agents, to minimise the risk of infection, but the focus is on biosafety and not biosecurity. [3] The Department of Agriculture website has measures related to biosecurity but only in the context of the food supply chain. [4] There is also no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [5]. Lastly, there is no evidence provided by the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [6, 7, 8, 9, 10, 11]

[1] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.

[2] electronic Irish Statute Book (eISB). No. 13 of 2011. "Biological Weapons Act of 2011".

[<http://www.irishstatutebook.ie/eli/2011/act/13/enacted/en/pdf>]. Accessed 10 February 2021.

[3] electronic Irish Statute Book (eISB). S.I. No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 10 February 2021.

[4] Ireland Department of Agriculture, Food and the Marine. "Biosecurity." [<https://www.gov.ie/en/publication/d8cbf-animal-health-welfare-biosecurity/>]. Accessed 10 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[7] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[8] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 10 February 2021.

[9] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[10] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[11] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/department-of-defence/>]. Accessed 10 February 2021.

1.3.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of an established agency (or agencies) responsible for the enforcement of biosecurity legislation and regulations in Ireland. In fact, there is insufficient evidence that Ireland has 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. Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. [1] The reports refer to the Biological Weapons Act of 2011--the national legislation that contains provisions for criminal offences to prohibit possession, development, and transfer of biological weapons--and biosafety measures, but not biosecurity. [1, 2] Part 5, Special Measures, of S.I. No. 572 of 2013, requires health care and laboratory facilities apply containment measures for group 2-4 biological agents, to minimise the risk of infection, but the focus is on biosafety and not biosecurity. [3] The Department of Agriculture website has measures related to biosecurity but only in the context of the food supply chain. [4] There is also no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [5]. Lastly, there is no evidence provided by the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [6, 7, 8, 9, 10, 11]

[1] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.

[2] electronic Irish Statute Book (eISB). No. 13 of 2011. "Biological Weapons Act of 2011".

[<http://www.irishstatutebook.ie/eli/2011/act/13/enacted/en/pdf>]. Accessed 10 February 2021.

[3] electronic Irish Statute Book (eISB). S.I. No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 10 February 2021.

[4] Ireland Department of Agriculture, Food and the Marine. "Biosecurity." [<https://www.gov.ie/en/publication/d8cbf-animal-health-welfare-biosecurity/>]. Accessed 10 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[7] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[8] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 10 February 2021.

[9] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[10] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[11] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/department-of-defence/>]. Accessed 10 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 public evidence that Ireland has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. The National Virus Reference Laboratory, Institute of Public Health, and Health Research Board do not provide indication of such a consolidation. [1, 2, 3] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988, however there is no evidence provided in the reports that Ireland has taken action to consolidate its inventories of especially dangerous pathogens into a minimum number of facilities. [4] There is also no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [5]. Lastly, there is no evidence provided by the Department of Health, Department of Public Health, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [6, 7, 8, 9, 10]

[1] UCD National Virus Reference Laboratory. [<https://nvrl.ucd.ie/>]. Accessed 10 February 2021.

[2] Institute of Public Health in Ireland. [<https://www.publichealth.ie/>]. Accessed 10 February 2021.

[3] Health Research Board. [<http://www.hrb.ie/>]. Accessed 10 February 2021.

[4] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[7] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[8] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[9] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[10] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/department-of-defence/>]. Accessed 10 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 evidence of Ireland's in-country capacity to conduct PCR-based diagnostic testing for Ebola, which would preclude culturing a live pathogen. A 2014 presentation, available on Ireland's Health Protection Surveillance Centre (HPSC) website, details the process of laboratory diagnostics for Ebola Virus Disease (EVD). [1] The presentation describes the capacity of the National Virus Reference Laboratory (NVRL) to conduct such a test. The NVRL performs two tests on each sample: "the commercial real time PCR assay targeting L (polymerase) gene, and the in-house PCR assay targeting the GP (glycoprotein) gene". [1] The NVRL website also indicates the lab's ability to test for Ebola, though does not specify the PCR-based technique. [2] There is no evidence on PCR-based diagnostic testing found for anthrax on the websites of the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [3, 4, 5, 6, 7, 8]

[1] Health Service Executive of Ireland. 12 November 2014. "Ebola Virus Disease (EVD) Laboratory Diagnostics".

[<https://studylib.net/doc/5814965/ebola-virus-disease--evd--laboratory-diagnostics>] Accessed 11 September 2018.

[2] UCD National Virus Reference Laboratory. "Ebola virus testing". [<https://nvrl.ucd.ie/node/81>]. Accessed 11 September 2018.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[4] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[5] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 10 February 2021.

[6] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[7] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[8] Department of Defence of Ireland. [[https://www.gov.ie/en/organisation/departments-of-defence/](https://www.gov.ie/en/organisation/departments/departments-of-defence/)]. Accessed 10 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

There is insufficient evidence that Ireland requires biosecurity training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. [1] The reports indicate that Ireland's National Virus Reference Laboratory (NVRL) has a High Containment Laboratory procedures training for staff and continuous training programme for senior staff responsible for the high containment Class 3 (+) laboratory. They also state that the Department of Agriculture, Food and the Marine laboratories receive regular training from the EU Community Reference Laboratories (CRLs) and the Defence Forces provides training in protection from bioweapons. However, the content of these trainings is unknown, as well as whether they trainings use a standardised, required approach. There is also no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [2]. Lastly, there is no evidence provided by the websites of the Department of Health,

Department of Public Health, Institute of Public Health, Health Service Executive, the State Laboratory, Department of Agriculture, Food and the Marine (DAFM), and the Department of Defence. [3, 4, 5, 6, 7, 8, 9]

[1] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.

[2] Verification Research, Training and Information Centre (VERTIC) Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.

[4] Department of Public Health of Ireland. [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 10 February 2021.

[5] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 10 February 2021.

[6] Service Executive (HSE) of Ireland. [<https://www.hse.ie/eng/>]. Accessed 10 February 2021.

[7] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 10 February 2021.

[8] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.

[9] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/departement-of-defence/>]. Accessed 10 February 2021.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no evidence that Ireland has regulations or licensing conditions which 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. The Statutory Instrument (S.I.) No. 572 of 2013, which is Ireland's Regulations on the Safety, Health and Welfare at Work (Biological Agents)—including Duties of employers and employee and protective and preventive measures—makes no mention of drug testing, background checks, and psychological or mental fitness checks on personnel with access to especially dangerous pathogens. [1] The Health and Safety Authority (HSA)'s Code of Practice to support S.I. No. 572 of 2013 lists biological agents and describes containment measures but does not mention personnel checks. [2] The Health and Safety Authority, Department of Health, Department of Defence, and Department of Agriculture, Food and the Marine do not indicate whether checks are conducted. [3, 4, 5, 6] The National Virus Reference Laboratory, Institute of Public Health, and Health Research Board also do not provide indication that personnel checks are conducted in these environments. [7, 8, 9] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988, however the reports do not provide any additional information regarding personnel checks for those with access to especially dangerous pathogens. [10] Lastly, there is no evidence provided by the Verification Research, Training and Information Centre (VERTIC) Database. [11]

- [1] electronic Irish Statute Book (eISB). S.I. No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 10 February 2021.
- [2] Health and Safety Authority of Ireland. 2017 (update). "2013 Code of Practice for the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013)". [https://www.hsa.ie/eng/Topics/Biological_Agents/Legislation/Relevant_Legislation/]. Accessed 10 February 2021.
- [3] Health and Safety Authority of Ireland. [<https://www.hsa.ie/eng/>]. Accessed 10 February 2021.
- [4] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 10 February 2021.
- [5] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 10 February 2021.
- [6] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 10 February 2021.
- [7] UCD National Virus Reference Laboratory. [<https://nvrl.ucd.ie/>]. Accessed 10 February 2021.
- [8] Institute of Public Health in Ireland. [<https://www.publichealth.ie/>]. Accessed 10 February 2021.
- [9] Health Research Board. [<http://www.hrb.ie/>]. Accessed 10 February 2021.
- [10] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 February 2021.
- [11] Verification Research, Training and Information Centre (VERTIC) Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 10 February 2021.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 1

Ireland has publicly available information on national regulations on the safe and secure transport of infectious substances (Categories A and B). Irish Statutory Instrument (S.I.) No. 197/2018 - European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) (Amendment) Regulations 2018 is in accordance with European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), including the safe and secure transport of Category A and B infectious substances. [1, 2, 3] The Health and Safety Authority of Ireland also points to the WHO guidance—detailing packaging, labelling, and shipping—on the transport of infectious substances, including Category A and B infectious substances. [4] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures (CBM) to the United Nations Office at Geneva (UNOG) since 1988, however there is no additional information on national regulations on the safe and secure transport of infectious substances is available in its reports. [5]

- [1] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 197/2018 "European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) (Amendment) Regulations 2018". [<http://www.irishstatutebook.ie/eli/2018/si/197/made/en/print>]. Accessed 10 February 2021.
- [2] Health and Safety Authority of Ireland. "Class 6.2 Infectious Substances". [https://www.hsa.ie/eng/Your_Industry/ADR_-_Carriage_of_Dangerous_Goods_by_Road/Information_Guidance/Class_6_2_Infectious_Substances/]. Accessed 10 February 2021.
- [3] Health and Safety Authority of Ireland. "ADR General Information - Legislation". [https://www.hsa.ie/eng/Your_Industry/ADR_-_Carriage_of_Dangerous_Goods_by_Road/ADR_General_Information/Legislation/]. Accessed 10 February 2021.

[4] World Health Organization (WHO). "Guidance on regulations for the transport of infectious substances 2017-2018". [<http://www.who.int/ihr/publications/WHO-WHE-CPI-2017.8/en/>]. Accessed 10 February 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 10 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 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 in Ireland. There are a number of pieces of national legislation in place in Ireland, which regulate the cross-border transfer and end-user screening of biological materials. [1] Ireland's primary legislation regarding control and export of goods and technology is the Control of Exports Act 2008. [2] Other relevant legislation includes: European Council Regulation (EC) No. 428 of 2009, which sets up a Community regime for the control of exports, transfer, brokering and transit of dual-use items; Commission Delegated Regulation (EU) 2017/2268, which amends Council Regulation (EC) No 428/2009; and Ireland's Statutory Instrument (S.I.) No. 357 of 2018, which amends Ireland's Control of Exports (Dual Use Items) legislation (S.I. No. 443 of 2009) to adhere to (EC) No. 428/2009. [1] Article 12 of EC No. 428/2009 specifies that "considerations about intended end use and the risk of diversion" are among the considerations that Member States shall take into account when deciding whether to grant an export authorization. [3] A dual-use export licence is required for controlled products that fall under the Commission Delegated Regulation (EU) 2017/2268, which include "biological agents" defined as, "pathogens or toxins, selected or modified (such as altering purity, shelf life, virulence, dissemination characteristics, or resistance to UV radiation) to produce casualties in humans or animals, degrade equipment or damage crops or the environment.". [4] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. The reports also include the Control of Exports Act and EC No. 428/2009 under its declaration of legislation. [5]

[1] Department of Business, Enterprise and Innovation of Ireland. "Export Licensing Legislation". [<https://dbei.gov.ie/en/What-We-Do/Trade-Investment/Export-Licences/Export-Licensing-Legislation/>]. Accessed 12 February 2021.

[2] electronic Irish Statute Book (eISB). "Control of Exports Act 2008". [<http://www.irishstatutebook.ie/eli/2008/act/1/enacted/en/print>]. Accessed 12 February 2021.

[3] European Commission of the European Union. Council Regulation (EC) No 428/2009 of 5 May 2009. "Setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:134:0001:0269:en:PDF>]. Accessed 12 February 2021.

[4] European Commission of the European Union. Delegated Regulation (EU) 2017/2268 of 26 September 2017. "Amending Council Regulation (EC) No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537060088134&uri=CELEX:32017R2268>]. Accessed 12 February 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 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

Ireland has national biosafety legislation in place. Statutory Instrument (S.I.) No. 572 of 2013 on Safety, Health and Welfare at Work (Biological Agents) Regulations address protection of workers from the health risks associated with biological agents. [1, 2] According to the legislation, risk assessments must be conducted, all employees of the facility managing biological agent must receive adequate trainings, hygiene and PPE requirements must be met at facilities, vaccination and health surveillance is carried out, and emergency plans are established. [1, 2] The legislation gives effect to European Union (EU) Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work, but regulations and practices vary from country to country. [3] Ireland is party to the Cartagena Protocol on Biosafety, an international treaty that sets rules for the transboundary movement of GMOs for the protection of biodiversity, also taking into account risks to human health. [4] Ireland is also party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. [5] The reports include S.I. No. 572 as biosafety legislation, along with an accompanying Code of Practice and guidance document. [5]

[1] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 12 February 2021.

[2] Health and Safety Authority of Ireland. 2017 (update). "2013 Code of Practice for the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013)".

[https://www.hsa.ie/eng/Legislation/New_Legislation/Safety_Health_and_Welfare_at_Work_Biological_Agents_Regulations_2013/]. Accessed 12 February 2021.

[3] Pastorino, B., de Lamballerie, X., & Charrel, R. 2017. "Biosafety and biosecurity in European containment level 3 laboratories: focus on French recent progress and essential requirements". *Frontiers in Public Health*, 5, 121. [<https://www.ncbi.nlm.nih.gov/pubmed/28620600>]. Accessed 12 February 2021.

[4] Convention on Biological Diversity. "The Cartagena Protocol on Biosafety." [<https://bch.cbd.int/protocol>]. Accessed 12 February 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 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 Ireland. The Health and Safety Authority (HSA) in Ireland is responsible for enforcement of the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013), the country's biosafety legislation that addresses protection of workers from the health risks associated with biological agents. [1] The legislation gives effect to European Union (EU) Directive

2000/54/EC on the protection of workers from risks related to exposure to biological agents at work. [2] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. In the reports the HSA is named as the agency responsible for S.I. No. 572 of 2013. [3]

[1] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 12 February 2021.

[2] Pastorino, B., de Lamballerie, X., & Charrel, R. 2017. "Biosafety and biosecurity in European containment level 3 laboratories: focus on French recent progress and essential requirements". *Frontiers in Public Health*, 5, 121. [<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5449436/>]. Accessed 12 February 2021.

[3] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 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

There is no evidence that Ireland requires biosafety training, using a standardized, required approach, such as through a common curriculum or a train-the-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. The Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013) requires that employers give "appropriate training" to employees working with biological agents, but no mention is made of a standardized approach, such as through a common curriculum. [1] The Health and Safety Authority of Ireland does not mention training in the Code of Practice to accompany S.I. No. 572 of 2013. [2] The National Virus Reference Laboratory has a "Virtual Learning Environment" for staff, though this is not a standardized, required training. [3] In addition, WHO/Europe provides biosafety and biosecurity training for the region, which is also not standardised and required. [4] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. The reports indicate that Ireland's National Virus Reference Laboratory (NRVL) has a High Containment Laboratory procedures training for staff and continuous training programme for senior staff responsible for the high containment Class 3 (+) laboratory. [5] The reports also state that the Department of Agriculture, Food and the Marine laboratories receive regular training from the EU Community Reference Laboratories (CRLs) and the Defence Forces provides training in protection from bioweapons. However, the content of these trainings is unknown, as well as whether they trainings use a standardised, required approach. There is no mention of a standardized, required biosafety training through the websites of the Department of Health, Institute of Public Health, Health Research Board in Ireland, and the Department of Agriculture, Food and the Marine. [6, 7, 8, 9] Lastly, there is no evidence found on the Verification Research, Training and Information Centre (VERTIC) Database. [10]

[1] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 12 February 2021.

[2] Health and Safety Authority of Ireland. 2017 (update). "2013 Code of Practice for the Safety, Health and Welfare at Work (Biological Agents) Regulations 2013 (S.I. No. 572 of 2013)".

[https://www.hsa.ie/eng/Legislation/New_Legislation/Safety_Health_and_Welfare_at_Work_Biological_Agents_Regulations_2013/]. Accessed 12 February 2021.

[3] University College Dublin (UCD) National Virus Reference Laboratory (NVRL). "Virtual Learning Environment". [<https://nvrl.ucd.ie/vle/>]. Accessed 12 February 2021.

[4] World Health Organization (WHO) Regional Office for Europe. "Biorisk management". [<http://www.euro.who.int/en/health-topics/Health-systems/laboratory-services/quality-and-biosafety/biorisk-management>]. Accessed 12 February 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 February 2021. [6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[7] Institute of Public Health in Ireland. [<https://www.publichealth.ie/>]. Accessed 12 February 2021.

[8] Health Research Board. [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[9] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 12 February 2021.

[10] Verification Research, Training and Information Centre (VERTIC) Database. [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 12 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 evidence that Ireland 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. The Department of Health, Health Research Board, Department of Defence, or Department of Agriculture, Food and the Marine make no mention of such an assessment conducted on dual use research. [1, 2, 3, 4] There is also no mention of such an assessment through the Department of Health, Institute of Public Health, or Health Research Board in Ireland. [5, 6, 7] Ireland's 2018 National Risk Assessment makes no mention of an assessment on dual use research. [8] Ireland's legislation related to biosafety—Statutory Instrument (S.I.) No. 572 of 2013 on Safety, Health and Welfare at Work (Biological Agents) Regulations, which gives effect to European Union (EU) Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work—does not mention an assessment on dual use research. [9] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. [10] The available reports do not mention dual use research. Lastly, there is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) Database. [11]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[2] Health Research Board. [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[3] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 12 February 2021.

[4] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 12

February 2021.

[5] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[6] Institute of Public Health in Ireland. [<https://www.publichealth.ie/>]. Accessed 12 February 2021.

[7] Health Research Board. [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[8] Department of the Taoiseach (Prime Minister) of Ireland. "2018 National Risk Assessment: Overview of Strategic Risks". [https://www.taoiseach.gov.ie/eng/publications/publications_2018/national_risk_assessment_2018_-_overview_of_strategic_risks_-_final.pdf]. Accessed 12 February 2021.

[9] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 12 February 2021.

[10] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 February 2021.

[11] Verification Research, Training and Information Centre (VERTIC) Database.

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 12 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 that Ireland has legislation and/or regulation requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research. The Department of Health, Health Research Board, Department of Defence, and Department of Agriculture, Food and the Marine provide no indication of a national policy. [1, 2, 3, 4] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. The reports do not mention dual use research. [5] There is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) Database. [6]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[2] Health Research Board. [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[3] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 12 February 2021.

[4] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 12 February 2021.

[5] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 February 2021.

[6] Verification Research, Training and Information Centre (VERTIC) Database.

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 12 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 a designated agency in Ireland that is responsible for the oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research. The Department of Health, Health Research Board, Department of Defence, and Department of Agriculture, Food and the Marine (DAFM) make no mention of any oversight. [1, 2, 3] The Irish Research Council and Health Research Board are also not responsible for this type of oversight. [4, 5] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. The available reports do not mention dual use research. [6] There is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) Database. [7]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[2] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 12 February 2021.

[3] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 12 February 2021.

[4] Irish Research Council. [<http://research.ie/>]. Accessed 12 February 2021.

[5] Health Research Board of Ireland [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[6] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 February 2021.

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

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 12 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 a national legislation, regulation, policy, or other guidance in Ireland, requiring the screening of synthesized DNA against lists of known pathogens and toxins before it is sold. The Department of Health, Department of Defence, and Department of Agriculture, Food and the Marine (DAFM) make no mention of any legislation/regulation/policy. [1, 2, 3] The Irish Research Council and Health Research Board also do not address this. [4, 5] In addition, there is limited legislation pertaining to biosecurity and biosafety in Ireland. Ireland's legislation related to biosafety—Statutory Instrument (S.I.) No. 572 of 2013 on Safety, Health and Welfare at Work (Biological Agents) Regulations, which gives effect to European Union (EU) Directive 2000/54/EC on the protection of workers from risks related to exposure to biological agents at work—does not mention screening of synthesized DNA. [6] Ireland is party to the Biological Weapons Convention (BWC), and has reported Confidence Building Measures to the United Nations Office at Geneva (UNOG) since 1988. There is no evidence of legislation requiring the screening of synthesized DNA available in the available reports. [7] There is also no evidence found on the Verification Research, Training and Information Centre (VERTIC) Database. [8]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 12 February 2021.

[2] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 12 February 2021.

[3] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 12

February 2021.

[4] Irish Research Council. [<http://research.ie/>]. Accessed 12 February 2021.

[5] Health Research Board of Ireland [<http://www.hrb.ie/>]. Accessed 12 February 2021.

[6] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 572/2013. "Safety, Health and Welfare at Work (Biological Agents) Regulations 2013". [<http://www.irishstatutebook.ie/eli/2013/si/572/made/en/print>]. Accessed 12 February 2021.

[7] United Nations Office at Geneva (UNOG) - Biological Weapons Convention (BWC). "Ireland" [<https://bwc-ecbm.unog.ch/state/ireland>]. Accessed 12 February 2021.

[8] Verification Research, Training and Information Centre (VERTIC) Database.

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/i/>]. Accessed 12 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: 0

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 at least 5 of the 10 WHO-defined core tests. According to official reports and guidelines from the Health Protection Surveillance Centre (HPSC) of Ireland and the European Centre for Disease Prevention and Control, Ireland has the capacity to test for at least the following: polymerase chain reaction (PCR) testing for Influenza virus (flu), virus culture for poliovirus (polio), serology for HIV, microscopy for mycobacterium tuberculosis (tuberculosis/TB), rapid diagnostic testing for plasmodium spp. (malaria), and bacterial culture for Salmonella enteritidis serotype Typhi (typhoid). [1, 2, 3, 4, 5, 6] Ireland has not publicly defined the four country-specific tests.

[1] European Centre for Disease Prevention and Control. "Laboratory surveillance of influenza".

[<https://ecdc.europa.eu/en/about-us/networks/disease-and-laboratory-networks/erlinet-lab-surveillance-influenza>]. Accessed 12 February 2021.

[2] Health Service Executive, Health Protection Surveillance Centre, and Department of Health of Ireland. 2014. "National Polio Plan for Ireland". [<https://www.hpsc.ie/a-z/vaccinepreventable/polio/guidance/File,14627,en.pdf>]. Accessed 12 February 2021.

[3] St. James's Hospital. "Virology". [<http://search.stjames.ie/Labmed/Info/Virology/ExamTestName,28489,en.html>]. Accessed 12 February 2021.

[4] Health Protection Surveillance Centre. 2014. "Guidelines on the Prevention and Control of Tuberculosis in Ireland, 2010 - Amended 2014". [<http://www.hpsc.ie/a-z/vaccinepreventable/tuberculosis/tb/guidance/tbguidelines2010amended2014/>]. Accessed 12 February 2021.

[5] Health Protection Surveillance Centre. 2017. "Clinical Guidelines on the Management of Suspected Malaria". [<http://www.hpsc.ie/a-z/vectorborne/malaria/guidance/>]. Accessed 12 February 2021.

[6] Health Service Executive of Ireland. "Typhoid Fever - Diagnosing Typhoid Fever". [<https://www.hse.ie/eng/health/az/t/typhoid-fever/>]. Accessed 12 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

There is evidence that Ireland has a national plan, strategy or similar document for conducting testing during a public health emergency, which includes considerations for scaling capacity, and defining goals for testing, but not for testing for novel pathogens. The "Resilience and Recovery 2020-2021 Plan for Living with COVID-19" includes measures for testing such as employing 3,000 workforce dedicated to testing for COVID-19, serial testing starting in food plants, free access to COVID-19 test referrals available 7 days a week, testing centers working 7 days a week for 12 hours a day, opening up 30 test centers and 6 pop-up fleets, acute hospital testing, etc. [1] There is no further information provided on the websites of the Department of Health, Department of Agriculture, Food and the Marine (DAFM) [2, 3]

[1] Government of Ireland. "Resilience and Recovery 2020-2021 Plan for Living with COVID-19". [https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html#I902c9]. Accessed 28 February 2021.

[2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 28 February 2021.

[3] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 28 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 is evidence of national laboratory that serves as a reference facility which is accredited. The University College Dublin (UCD) National Virus Reference Laboratory (NVRL), which serves as a reference facility for flu, HIV, polio, and malaria, has been accredited by the Irish National Accreditation Board (INAB) to ISO 15189:2012. [1] The accreditation certificate for NVRL was issued in September 2014. [2] St. James's Hospital, including the Irish Mycobacteria Reference Laboratory, which serves as the reference laboratory for tuberculosis, was issued an INAB ISO 15189:2012 accreditation certificate in October 2014. [3] The Irish National Accreditation Board, part of Ireland's Health and Safety Authority provides accreditation of laboratories, certification bodies and inspection bodies and reference material producers. [4]

[1] University College Dublin (UCD) National Virus Reference Laboratory (NVRL). "Quality". [<https://nvrl.ucd.ie/quality>]. Accessed 12 February 2021.

[2] Irish National Accreditation Board. "Accreditation Certificate - National Virus Reference Laboratory". [<https://inab.ie/FileUpload/Medical-Testing/National-Virus-Reference-Laboratory-326MT-Cert.pdf>]. Accessed 12 February 2021.

[3] Irish National Accreditation Board. "Accreditation Certificate - St. James's Hospital". [<https://inab.ie/FileUpload/Medical-Testing/St-James-s-Hospital-327MT-Cert.pdf>]. Accessed 12 February 2021.

[4] Irish National Accreditation Board. "About Accreditation". [<https://www.inab.ie/About-Accreditation/>]. Accessed 12 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 is a national laboratory that serves as a reference facility which is subject to external quality assurance review in Ireland. The University College Dublin (UCD) National Virus Reference Laboratory (NVRL), which serves as a reference facility for flu, HIV, polio, and malaria, participates in a number of external quality assessments (EQA)/interlaboratory comparisons (ILC) schemes. [1] This includes: the UK National External Quality Assessment Scheme for Microbiology (NEQAS), which provides External Quality Assessment/Proficiency Testing for all major aspects of clinical laboratory testing; the WHO Global Influenza Surveillance and Response System (GISRS), which established an external Quality Assessment Project in 2007 to monitor the quality of GISRS and other national influenza reference laboratories that perform PCR diagnosis; and The Royal College of Pathologists of Australasia Quality Assurance Programs (RCPAQAP), which conducts external quality assurance with a global reach. [2, 3, 4] There is no publicly available evidence on external quality assurance reviews for the Irish Mycobacteria Reference Laboratory out of St. James's Hospital, which serves as the reference laboratory for tuberculosis.

[1] University College Dublin (UCD) National Virus Reference Laboratory (NVRL). "Quality". [<https://nvrl.ucd.ie/quality>]. Accessed 13 February 2021.

[2] UK National External Quality Assessment Scheme for Microbiology (NEQAS). "About". [<https://ukneqas.org.uk/about-us/>]. Accessed 13 February 2021.

[3] WHO Global Influenza Surveillance and Response System (GISRS). "WHO External Quality Assessment Project for the detection of influenza viruses by PCR".

[http://www.who.int/influenza/gisrs_laboratory/external_quality_assessment_project/en/]. Accessed 13 February 2021.

[4] The Royal College of Pathologists of Australasia Quality Assurance Programs (RCPAQAP) "About Us". [<https://rcpaqap.com.au/about-us/>]. Accessed 13 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 insufficient evidence that Ireland has a nationwide specimen transport system. There is no evidence of a single transport system, such as a public or private courier, but site-specific resources from the Health Service Executive (HSE), the country's public health services agency, indicate that systems are in place for transport of specimens from point of collection to labs. The University Hospital Waterford's Laboratory Services details the labelling, packaging, storage, and transport of different types of specimens, including high risk specimens. [1] These details include transport within and beyond hospital sites, and include times of departure of different transport systems, based on geographic area. [1] The "Sample Transportation" guide for Cork University Hospital names several transport systems within and outside Ireland—including Eurofins Lablink, First Direct Courier, DX Tracked Sample Service—and indicates that couriers must be approved to transport different levels of biological agents. [2] There is no evidence of a nationwide specimen transport system available on the websites of the Department of Health, the Department of Agriculture, Food and the Marine (DAFM), and the State Laboratory. [3, 4, 5]

- [1] Health Service Executive of Ireland. "Transportation to the Laboratory". [https://www.hse.ie/eng/services/list/3/acutehospitals/hospitals/waterford/laboratoryservices/transportation-to-the-laboratory.html]. Accessed 13 February 2021.
- [2] Health Service Executive of Ireland and Cork University Hospital. "Sample Transportation". [http://www.cuh.hse.ie/Our-Services/Our-Specialities-A-Z-/Laboratory-Medicine/Services-Provided/Downloads/Sample-Transportation.pdf]. Accessed 13 February 2021.
- [3] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 13 February 2021.
- [4] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [https://www.agriculture.gov.ie]. Accessed 13 February 2021.
- [5] State Laboratory of Ireland. [https://www.statelab.ie/]. Accessed 13 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 in place to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. There is no such mention in the "National Plan for Pandemic Influenza" of 2007 and the "Resilience and Recovery 2020-2021 Plan for Living with COVID-19". [1, 2] There is also no further evidence found on the websites of the Department of Health, Department of Agriculture, Food and the Marine (DAFM), and the Health Service Executive. [3, 4, 5]

- [1] Government of Ireland. 2007. "National Plan for Pandemic Influenza". [https://www.gov.ie/en/publication/d9ce58-national-pandemic-influenza-plan/?referrer=http://www.health.gov.ie/blog/publications/national-pandemic-influenza-plan/]. Accessed 28 February 2021.
- [2] Government of Ireland. "Resilience and Recovery 2020-2021 Plan for Living with COVID-19". [https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html#I902c9]. Accessed 28 February 2021.
- [3] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 28 February 2021.
- [4] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [https://www.agriculture.gov.ie/]. Accessed 28 February 2021.
- [5] Health Service Executive of Ireland. [https://www.hse.ie/eng/]. Accessed 28 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: 1

There is evidence that Ireland conducts ongoing event-based surveillance and analysis for infectious disease, but there is insufficient evidence that the data are being analysed on a daily basis. The Health Service Executive indicates that "early detection of public health threats is an important function of Departments of Public Health and the Health Protection Surveillance Centre (HPSC)", including event-based surveillance. [1] These entities conduct event-based surveillance from the media, Departments of Public Health, and international alert systems—such as European Early Warning and Response System (EWRS), European Centre for Disease Prevention and Control (ECDC) Epidemic Intelligence Information System (EPIS), and the WHO Alert system under the International Health Regulations. [1] A 2006 newsletter from the HPSC charts the ECDC's Epidemic Intelligence Framework that can be applied to all European countries, including event-based surveillance at the domestic and international levels. [2] However, there is no evidence that this framework has been officially adopted in Ireland. There is no information about data being analysed on a daily basis.

[1] Health Service Executive (HSE) of Ireland. "Public Health Emergency Preparedness and Response". [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emmerprep.html>]. Accessed 13 February 2021.

[2] Epi-Insight, Disease Surveillance Report of the Health Protection Surveillance Centre (HPSC) of Ireland. September 2006. "Epidemic Intelligence Framework". Volume 7, Issue 9. [<https://www.hpsc.ie/epi-insight/volume72006/File,1936,en.pdf>]. Accessed 13 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

There is no publicly available evidence that Ireland reported a potential public health emergency of international concern (PHEIC) to the WHO within the last two years. The latest notification is of 7 June 2017, where WHO reported that Ireland was among several countries which had reported an unusual increase in hepatitis A cases, particularly among men who have sex with men. [1] However, WHO publishes data of COVID-19 for Ireland but there is no evidence that it was reported as a PHEIC. [2] There is no evidence on PHEIC found on the websites of the Department of Health, and the Health Service Executive. [3, 4]

[1] World Health Organisation (WHO). "Disease outbreak news". [<https://www.who.int/csr/don/archive/country/irl/en/>]. Accessed 28 February 2021.

[2] World Health Organisation (WHO). "COVID-19 Dashboard". [<https://covid19.who.int/region/euro/country/ie>]. Accessed 28 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 28 February 2021.

[4] Health Service Executive of Ireland. [<https://www.hse.ie/eng/>]. Accessed 28 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: 1

The Ireland's government operates an electronic reporting surveillance system at both the national and sub-national level. The Health Protection Surveillance Centre (HPSC) of the Health Service Executive (HSE), runs the country's web-based Computerised Infectious Disease Reporting (CIDR) system, a shared national information system to manage the surveillance and control of infectious diseases in Ireland. [1] CIDR is used to collect case-based data on all notifiable infectious diseases, and enhanced surveillance data is collected on many infectious diseases. [2] Since 2011, CIDR has been used by all HSE regional Public Health Departments and laboratories. [3] Although CIDR is based within HPSC, CIDR partners include the Department of Health, SafeFood, and the Food Safety Authority of Ireland, and CIDR enables reporting to international agencies such as the European Centre for Disease Prevention and Control and the World Health Organization. [4]

[1] Health Protection Surveillance Centre (HPSC) of Ireland. "Computerised Infectious Disease Reporting".

[<http://www.hpsc.ie/cidr/>]. Accessed 13 February 2021.

[2] Health Information and Quality Authority of Ireland. "Computerised Infectious Disease Reporting (CIDR) system".

[<https://www.hiqa.ie/areas-we-work/health-information/data-collections/computerised-infectious-disease-reporting-cidr>]. Accessed 13 February 2021.

[3] Epi-Insight, Disease Surveillance Report of the Health Protection Surveillance Centre (HPSC) of Ireland. "Computerised Infectious Disease Reporting (CIDR) system now implemented in all HSE regions".

[<http://ndsc.newsweaver.ie/epiinsight/1eobu2wvuqp-1qz92764nz?a=1&p=19382375&t=17517774>]. Accessed 13 February 2021.

[4] Health Protection Surveillance Centre (HPSC) of the Health Services Executive (HSE) of Ireland. "Computerised Infectious Disease Reporting (CIDR)". [https://www.hpsc.ie/cidr/presentations/CIDR%20data%20for%20action%20v2.0_website.pdf].

Accessed 13 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: 1

The electronic reporting surveillance system in Ireland collects ongoing or real-time laboratory data. Ireland's Computerised Infectious Disease Reporting (CIDR) system does collect ongoing/real time laboratory data. Although CIDR data is updated frequently, it's done so on a daily basis. The Health Protection Surveillance Centre (HPSC) of Ireland indicates that information in the CIDR system is reported to Public Health on a daily basis, via a Laboratory Information Management System (LIMS) extract upload or manual entry, and that urgent results can be entered manually. [1]

[1] Health Protection Surveillance Centre (HPSC) of Ireland. "Computerised Infectious Disease Reporting (CIDR) Frequently Asked Questions". [http://www.hpsc.ie/cidr/frequentlyaskedquestions/#_How_often_will_the%20laboratory%20infor].

Accessed 13 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 are not commonly in use in Ireland. Ireland is in the process of rolling out a electronic health record (EHR) programme, which is likely to span a 10-year period. [1, 2] eHealth Ireland—part of the Health Service Executive (HSE), the country's public health services agency—coordinates technology-enabled solutions, including EHR, in Ireland. [3] A report of the business case for the national EHR programme was made public in 2017, and according to the eHealth Ireland's progress update, the programme is in an investment phase. [4] It is unclear on the HSE and eHealth Ireland websites the extent to which EHR has been implemented in Ireland. As of May 2018, the Royal College of Physicians of Ireland (RCPI) called for the full implementation of electronic health records, according to an article in The Irish Times. [5] However, according to news sources in 2018, Ireland acknowledges that it is falling behind in the implementation of the EHR, but it will use the experience of other countries in its successful implementation of EHR. [6] The rollout of the national EHR system is expected to receive EURO €875 million from the HSE. [7] There is no further evidence found on the websites of the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory. [8, 9, 10, 11]

[1] Edwards, E. 16 February 2018. "Investment in e-health proposed under development plan". The Irish Times. [https://www.irishtimes.com/news/ireland/irish-news/investment-in-e-health-proposed-under-development-plan-1.3395390]. Accessed 13 February 2021.

[2] Health Service Executive (HSE) of Ireland, Office of the Chief Information Officer (CIO). 2016. "National Electronic Health Record: Strategic Business Case". [http://www.ehealthireland.ie/Strategic-Programmes/Electronic-Health-Record-EHR-/Progress/]. Accessed 13 February 2021.

[3] eHealth Ireland. [http://www.ehealthireland.ie/]. Accessed 13 February 2021.

[4] eHealth Ireland. "Progress for Electronic Health Record (EHR)". [http://www.ehealthireland.ie/Strategic-Programmes/Electronic-Health-Record-EHR-/Progress/]. Accessed 13 February 2021.

[5] Edwards, E. 22 May 2018. "RCPI calls for implementation of electronic health records". The Irish Times. [https://www.irishtimes.com/news/ireland/irish-news/rcpi-calls-for-implementation-of-electronic-health-records-1.3504892]. Accessed 13 February 2021.

[6] Mobihealthnews. "Ireland knows it's behind on EHRs, but hopes to learn from others' mistakes". [https://www.mobihealthnews.com/content/ireland-knows-it%E2%80%99s-behind-ehrs-hopes-learn-others-mistakes]. Accessed 13 February 2021.

[7] Health Informatics of Ireland. "HSE to spend €875m on health records system". [https://www.hisi.ie/news/hse-to-spend-875m-on-health-records-system]. Accessed 13 February 2021.

[8] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 8 March 2021.

[9] Department of Public Health of Ireland.

[https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/]. Accessed 8 March 2021.

[10] Institute of Public Health of Ireland. [https://publichealth.ie/]. Accessed 8 March 2021.

[11] State Laboratory of Ireland. [https://www.statelab.ie/]. Accessed 8 March 2021.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

The national public health system does not have access to electronic health records of individuals in their country, as electronic health records are not yet in use. Ireland's Health Service Executive (HSE), the country's public health services

agency, operates the national electronic health record (EHR) programme that is currently in the process of rolling out. [1] The EHR programme is intended to streamline access for patients, service users and carers; however, no explicit reference could be found to HSE's access to this data. [2] According to Ireland's 2016 National Business Case for electronic health records (EHR), EHR in Ireland "could include information from all healthcare providers, including GP's, voluntary and private healthcare organisations". [3] The May 2017 Sláintecare Report, which details a process for achieving a universal healthcare system, indicates that the individual health identifier (IHI) will be rolled out in 2018. [4] However, according to news sources in 2018, Ireland acknowledges that it is falling behind in the implementation of the EHR, but it will use the experience of other countries in its successful implementation of EHR. [5] The rollout of the national EHR system is expected to receive EURO €875 million from the HSE. [6] There is no further evidence found on the websites of the Department of Health, Department of Public Health, Institute of Public Health, the State Laboratory. [7, 8, 9, 10]

[1] eHealth Ireland. "Progress for Electronic Health Record (EHR)". [<http://www.ehealthireland.ie/Strategic-Programmes/Electronic-Health-Record-EHR/Progress/>]. Accessed 13 February 2021.

[2] Health Service Executive (HSE) of Ireland, Office of the Chief Information Officer (CIO). 2015. "National Electronic Health Record: Vision and Direction". [www.ehealthireland.ie/Library/Document-Library/EHR-Vision-and-Direction.pdf]. Accessed 13 February 2021.

[3] Health Service Executive (HSE) of Ireland, Office of the Chief Information Officer (CIO). 2016. "National Electronic Health Record: Strategic Business Case". [<http://www.ehealthireland.ie/Strategic-Programmes/Electronic-Health-Record-EHR/Progress/National-Business-Case.pdf>]. Accessed 13 February 2021.

[4] Houses of the Oireachtas (Irish legislature). May 2017. "Committee on the Future of Healthcare - Sláintecare Report". [<https://www.oireachtas.ie/en/committees/32/future-of-healthcare/>]. Accessed 13 February 2021.

[5] Mobihealthnews. "Ireland knows it's behind on EHRs, but hopes to learn from others' mistakes". [<https://www.mobihealthnews.com/content/ireland-knows-it%E2%80%99s-behind-ehrs-hopes-learn-others-mistakes>]. Accessed 13 February 2021.

[6] Health Informatics of Ireland. "HSE to spend €875m on health records system". [<https://www.hisi.ie/news/hse-to-spend-875m-on-health-records-system>]. Accessed 13 February 2021.

[7] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

[8] Department of Public Health of Ireland. [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 8 March 2021.

[9] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 8 March 2021.

[10] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 8 March 2021.

2.4.1c

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

Yes = 1, No = 0

Current Year Score: 1

Ireland has data standards in place to ensure that data is comparable. eHealth Ireland—part of the Health Service Executive (HSE), the country's public health services agency—coordinates the country's health technology-enabled solutions, and its Information Architecture site provides a metadata registry template that aligns with ISO 11179 (instructions for naming conventions for metadata registries). [1,2] Furthermore, a November 2017 report details public input on Ireland's eHealth interoperability standards. [3] However, there is no publicly available information on HSE decisions as a result of this input.

[1] eHealth Ireland. "Information Architecture". [<http://www.ehealthireland.ie/Our-Team/Enterprise-Architecture/Information-Architecture-/>]. Accessed 13 February 2021.

[2] International Organization for Standardization. "ISO/IEC 11179-5:2015". [<https://www.iso.org/standard/60341.html>].

Accessed 13 February 2021.

[3] Health Information and Quality Authority. 2017. "Developing eHealth interoperability standards for Ireland Statement of outcomes from the public consultation November 2017". [<https://www.hiqa.ie/reports-and-publications/health-information/developing-ehealth-interoperability-standards-ireland>]. Accessed 13 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: 1

There is evidence of established mechanisms in Ireland at the relevant ministries responsible for animal, human, and wildlife surveillance to share data. While the National Zoonoses Committee of Ireland includes representatives from government human and animal health agencies—including from the Health Service Executive and the Department of Agriculture, Food and the Marine (DAFM)—and provides a mechanism for timely information exchange on zoonotic disease between key stakeholders, no further information on the nature of this mechanism is available. [1] The DAFM's Animal Health Surveillance Strategy for Ireland 2016-2021 identifies an opportunity to improve and expand existing surveillance systems for animal health, recommending that DAFM encourage the One Health concept by expanding links with other Departments and agencies involved in animal and human health surveillance. [2]

[1] National Zoonoses Committee (NZC) of Ireland. "About NZC". [<http://www.zoonoses.ie/public/legislation.aspx>]. Accessed 13 February 2021.

[2] Department of Agriculture, Food and the Marine (DAFM) of Ireland. "Animal Health Surveillance Strategy for Ireland 2016-2021".

[<http://www.animalhealthsurveillance.agriculture.gov.ie/media/animalhealthsurveillance/content/publications/AHSDOC140717.pdf>]. Accessed 13 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

There is evidence that Ireland makes de-identified health surveillance data on infectious diseases publicly available via reports (or other format) on government websites. Early detection of public health threats is an important function of Departments of Public Health and the Health Protection Surveillance Centre (HPSC) of the Health Service Executive (HSE), Ireland's public health services agency. [1] The HSE publishes weekly reports of infectious disease, HIV & STIs, outbreak, and influenza. [2] The data available on outbreaks of infectious diseases includes summaries of outbreaks, specified by HSE geographic region, of diseases such as *K. pneumoniae*, Salmonellosis, and Influenza. [3]

[1] Health Service Executive (HSE) of Ireland. "Public Health Emergency Preparedness and Response". [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Accessed 28 February 2021.

[2] Health Protection Surveillance Centre (HPSC) of Ireland. "Infectious Disease Weekly Report". [<http://www.hpsc.ie/notifiablediseases/weeklyidreports/>]. Accessed 28 February 2021.

[3] Health Protection Surveillance Centre (HPSC) of Ireland. "Weekly Outbreak Report ". [<http://www.hpsc.ie/notifiablediseases/weeklyoutbreakreport/>]. Accessed 28 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

There is evidence that Ireland makes 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. The website of the Department of Health publishes daily data on COVID-19 including number of cases, number of cases by gender, number of cases by age, regional distribution, new cases, cases in hospitalization, cases in ICU, number of cases that are recovered, number of deaths, vaccination, etc. [1] Similar daily information is also posted on the website of the Health Protection Surveillance Centre. [2]

[1] Department of Health of Ireland. "Latest Updates on COVID-19". [<https://www.gov.ie/en/news/7e0924-latest-updates-on-covid-19-coronavirus/#epidemiology-of-covid-19-in-ireland>]. Accessed 28 February 2021.

[2] Health Protection Surveillance Centre of Ireland. "Epidemiology of COVID-19 in Ireland- daily infographic". [<https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/casesinireland/epidemiologyofcovid-19inireland/>]. Accessed 28 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

Ireland has legislation in place that safeguards the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. According to the Health Protection Surveillance Centre (HPSC)—part of the Health Service Executive, Ireland's public health services agency—which manages the country's Computerised Infectious Disease Reporting (CIDR), all CIDR data complies with Data Protection legislation. [1] The HPSC's Infectious Disease Weekly report webpage explains, "No patient identifiable information will be published by HPSC." [2] The Data Protection Commission (DPC) or Ireland, the regulatory authority to protect individuals' data protection rights, provides a list of relevant legislative frameworks, such as the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679) and the "e-Privacy Regulations" (S.I. No. 336) of 2011. [3,4]

[1] Health Protection Surveillance Centre (HPSC) of Ireland. "Information for the public on data handling in the HSE Health Protection Surveillance Centre (HPSC)". [<http://www.hpsc.ie/notifiablediseases/howwehandleyourdata/>]. Accessed 13

February 2021.

[2] Health Protection Surveillance Centre (HPSC) of Ireland. "Infectious Disease Weekly Report".

[<http://www.hpsc.ie/notifiablediseases/weeklyidreports/>]. Accessed 13 February 2021.

[3] Data Protection Commission. "Key Data Protection legislative frameworks applicable from 25 May 2018".

[<https://www.dataprotection.ie/en/who-we-are/data-protection-legislation>]. Accessed 13 February 2021.

[4] Official Journal of the European Union. 27 April 2016. "REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)". [<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>]. Accessed 13 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: 1

The legislation safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, includes mention of protections from cyber attacks. The Health Protection Surveillance Centre (HPSC) of the Health Service Executive (HSE) indicates that the Computerised Infectious Disease Reporting (CIDR) complies with national Data Protection legislation. [1] The Data Protection Act of 2018 includes security measures for personal data against accidental or unlawful breach of data. [2] Ireland's e-Privacy Regulations (S.I. No. 336) of 2011 also mention security measures that should "ensure the level of security appropriate to the risk presented". [3] In addition, the HSE's Information Technology Security Policy has an approach to be followed in the event of a HSE data protection breach. [4] In addition, the confidentiality of identifiable health information for individuals is safeguarded by the EU's General Data Protection Regulation (GDPR), which came into force in May 2018. GDPR contains stipulations around network and information security, including a requirement that data held by state authorities must be overseen by a dedicated data protection officer who is proficient in dealing with cyber attacks and a requirement to inform all affected individuals within 72 hours of discovering a data breach. [5]

[1] Health Protection Surveillance Centre (HPSC) of Ireland. "Information for the public on data handling in the HSE Health Protection Surveillance Centre (HPSC)". [<http://www.hpsc.ie/notifiablediseases/howwehandleyourdata/>]. Accessed 13 February 2021.

[2] electronic Irish Statute Book (eISB). "Data Protection Act 2018".

[<http://www.irishstatutebook.ie/eli/2018/act/7/enacted/en/html>]. Accessed 13 February 2021.

[3] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 336/2011. "European Communities (Electronic Communications Networks and Services) (Privacy and Electronic Communications) Regulations 2011".

[<http://www.irishstatutebook.ie/eli/2011/si/336/made/en/print>]. Accessed 13 February 2021.

[4] Health Service Executive of Ireland. "Information Technology Security Policy".

[<https://www.hse.ie/eng/services/publications/pp/ict/information-security-policy.pdf>]. Accessed 13 February 2021.

[5] Official Journal of the European Union. 27 April 2016. "REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)". [<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>]. Accessed 13 February 2021.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 2

There is evidence that the government in Ireland has made a commitment to share surveillance data during a public health emergency with other countries in the region, and commitments have been made to share data for more than one disease. As a member of the European Union, Ireland shares surveillance data during a public health emergency with other countries in the region. All EU and EEA countries are part of the European Centre for Disease Prevention and Control's Early Warning and Response System (EWRS). The EWRS is a platform to "allow exchange of information on risk assessment and risk management for more timely, efficient and coordinated public health action. The EWRS is used for notifications on outbreaks, exchanging information and decisions about the coordination of measures among Member States. Over the years, it has played an important role to support health crisis related to severe acute respiratory syndrome (SARS), Ebola virus disease, avian influenza in humans and other communicable diseases." [1] Article 9 of Chapter IV of the European Union (EU) Decision on Serious Cross-Border Threats to Health notes that the European Commission "shall make available to the national competent authorities through the EWRS any information that may be useful for coordinating the response...including information related to serious crossborder threats to health and public health measures related to serious cross-border threats to health transmitted through rapid alert and information systems established under other provisions of Union law or the Euratom Treaty." [2]

[1] European Centre for Disease Prevention and Control. "Early Warning and Response System (EWRS)."

[<https://ecdc.europa.eu/en/early-warning-and-response-system-ewrs>]. Accessed 15 February 2021.

[2] Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on Serious Cross-Border Threats to Health and Repealing Decision No 2119/98/EC. Official Journal of the European Union.

[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf]. Accessed 15 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: 1

There is evidence of a national system in place to provide support at the sub-national level (e.g. training, metrics standardization and/or financial resources) to conduct contact tracing in the event of an active or future public health emergency. The "Resilience and Recovery 2020-2021 Plan for Living with COVID-19" notes that 500 contact tracing staff will

be recruited as a result of the COVID-19 pandemic. [1] There is no further evidence found on the websites of the Department of Health, Health Service Executive, and the Institute of Public Health. [2, 3, 4]

[1] Government of Ireland. "Resilience and Recovery 2020-2021 Plan for Living with COVID-19". [https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html#I902c9]. Accessed 28 February 2021.

[2] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 28 February 2021.

[3] Health Service Executive of Ireland. [https://www.hse.ie/eng/]. Accessed 28 February 2021.

[4] Institute of Public Health of Ireland. [https://www.gov.ie/en/organisation/16051907-institute-of-public-health-in-ireland-iph/]. Accessed 28 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: 0

There is no evidence that Ireland provides wraparound services to enable infected people and their contacts to self-isolate or quarantine as recommended, particularly economic support (paycheck, job security) and medical attention. However, Ireland has approved a fiscal package related to COVID-19 of 7.2 billion Euros, which provides support to sick pay, illness benefits, such as 70% temporary wage subsidy to help affected companies keep their workers, increased unemployment benefits totaling 350 Euros per week (from 203 Euros) for those who lost their jobs due to COVID-19, COVID-19 illness payment of 350 Euros per week, etc. [1] There is no further evidence provided on the websites of the Department of Health, Health Service Executive, and the Institute of Public Health. [2, 3, 4]

[1] World Health Organization (WHO). "COVID-19 Health System Response Monitor Ireland". [https://www.covid19healthsystem.org/countries/ireland/livinghit.aspx?Section=6.1%20Measures%20in%20other%20sector&Type=Section]. Accessed 28 February 2021.

[2] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 28 February 2021.

[3] Health Service Executive of Ireland. [https://www.hse.ie/eng/]. Accessed 28 February 2021.

[4] Institute of Public Health of Ireland. [https://www.gov.ie/en/organisation/16051907-institute-of-public-health-in-ireland-iph/]. Accessed 28 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

Ireland does not 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. The information is made available weekly. The Health Service Executive publishes weekly reports on testing and contact tracing in Ireland. The weekly reports include information on the percentage of positivity in close contact tracing, percentage of household close contact, number

of contact tracing completed, number of calls made to close contacts, etc. [1] Ireland also has made available a COVIDTracker application. [2]

[1] Health Service Executive of Ireland. "COVI-19 Testing and Contact Tracing Updates".

[<https://www.hse.ie/eng/services/news/newsfeatures/covid19-updates/covid-19-testing-contact-tracing-updates.html>]. Accessed 28 February 2021.

[2] Health Service Executive of Ireland. "Contact Tracing". [<https://www2.hse.ie/conditions/coronavirus/testing/contact-tracing.html>]. Accessed 28 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 insufficient evidence of a joint plan or cooperative agreement between the public health system and border control authorities to identify suspected and potential cases in international travelers and trace and quarantine their contacts in the event of an active or for a future public health emergency. However, there is a series of airport guidance published by the Health Protection Surveillance Centre, which include travel and transport risk assessment for public health authorities and the transport sector, Medical Officer of Health (MOH) response to communicable disease on incident on an aircraft, handbook for the management of public health events in air transport, information and guidance of for airport authorities and airlines on viral haemorrhagic fever, etc. [1] The Border Management Unit also states that there is a very close working relationship with the Health Service Executive and in case of suspected cases of COVID-19 there are clearly laid out protocols to follow. However, there is no evidence provided on what these protocols contain. [2] There is no further evidence found on the websites of the Department of Health, Department of Public Health, Institute of Public Health, State Laboratory, and the Emergency Planning. [3, 4, 5, 6, 7]

[1] Health Protection Surveillance Centre of Ireland. "Airport Guidance". [<https://www.hpsc.ie/a-z/emergencyplanning/porthealth/publichealthguidance/airportguidance/>]. Accessed 28 February 2021.

[2] Department of Justice of Ireland. "Travel and Coronavirus: Arriving to Ireland from another country". [<https://www.irishimmigration.ie/travel-and-coronavirus-arriving-to-ireland-from-another-country/>]. Accessed 28 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

[4] Department of Public Health of Ireland.

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/deptpublichealth/>]. Accessed 8 March 2021.

[5] Institute of Public Health of Ireland. [<https://publichealth.ie/>]. Accessed 8 March 2021.

[6] State Laboratory of Ireland. [<https://www.statelab.ie/>]. Accessed 8 March 2021.

[7] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 8 March 2021.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is evidence that an applied epidemiology training program is available in Ireland, and there is also evidence that resources are provided by the government to send citizens to another country to participate in applied epidemiology training programs. As a Member State of the European Union (EU), Ireland participates in the EPIET Fellowship programme of the EU's European Centre for Disease Prevention and Control. [1] The Health Protection Surveillance Centre of Ireland offers the in-country EPIET training based in Dublin, and fellows may gain experience outside of Dublin during outbreak investigations and research projects, and participate in overseas assignments. [2]

[1] European Centre for Disease Prevention and Control (ECDC). "Fellowship programme: EPIET/EUPHEM".

[<https://ecdc.europa.eu/en/epiet-euphem/apply/EU-track>]. Accessed 15 February 2021.

[2] European Centre for Disease Prevention and Control (ECDC). "Health Protection Surveillance Centre - EPIET".

[<https://ecdc.europa.eu/en/health-protection-surveillance-centre-epiet>]. Accessed 15 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

Ireland's available field epidemiology training program is inclusive of animal health professionals. [1] Ireland's EPIET training through the Health Protection Surveillance Centre is specifically inclusive of veterinarians. [2]

[1] European Centre for Disease Prevention and Control (ECDC). "Call for ECDC Fellowship Programme (EPIET and EUPHEM paths)". [<https://ecdc.europa.eu/en/about-us/work-us/call-ecdc-fellowship-programme-epiet-and-euphem-paths>]. Accessed 15 February 2021.

[2] European Centre for Disease Prevention and Control (ECDC). "Health Protection Surveillance Centre - EPIET".

[<https://ecdc.europa.eu/en/health-protection-surveillance-centre-epiet>]. Accessed 15 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: 2

In Ireland, there is evidence of an overarching national public health emergency response plan in place which addresses planning for multiple communicable diseases with epidemic or pandemic potential. The Irish Government's plan for major emergencies, developed by the Office of Emergency Planning in the Department of Defence, is a multi-hazard plan which covers communicable diseases with pandemic potential. The plan, the Framework for Major Emergency Management (MEM), was finalised in 2008 and covers Ireland's co-ordinated response to major emergencies and it is designed to fit "with the all hazards approach to emergency management". [1, 2] Each Principal Response Agency, such as the Health Service Executive (HSE), has an individual major emergency plan, consistent with the arrangements set out in the Framework for MEM. The HSE's overview of the country's public health emergency preparedness and response includes a link to a draft of the 2018 Emergency Management Operational Plan. [3, 4] The HSE also provides detailed Major Emergency Plans (MEP) for site, local, and regional levels. [5] There are also specific sub-plans for different types of emergencies, such as the Department of Health's National Pandemic Influenza Plan of 2007, which has been updated on 28 September 2020. [6]

[1] Emergency Planning of Ireland. "Emergencies". [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 15 February 2021.

[2] MEM.IE: A Framework for Major Emergency Management. [<http://mem.ie/>]. Accessed 15 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Public Health Emergency Preparedness and Response".

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Accessed 15 February 2021.

[4] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/emergency-management-operational-plan-2018.pdf>]. Accessed 15 February 2021.

[5] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 15 February 2021.

[6] Department of Health of Ireland. 2007. National Pandemic Influenza Plan". [<https://health.gov.ie/blog/publications/national-pandemic-influenza-plan/>]. Accessed 15 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 that the overarching plan has been updated in the last 3 years. The Framework for Major Emergency Management has not been updated since 2008. [1] However, the Operational plans related to health threats and response have been updated in the last 3 years. The Health Service Executive (HSE)'s drafted 2018 Emergency Management Operational Plan is made publicly available by the HSE. [2] The regional Major Emergency Plans were updated in November and December 2017. [3] The Department of Health's National Pandemic Influenza Plan of 2007 has been updated on 28 September 2020. [4]

[1] MEM.IE: A Framework for Major Emergency Management. [<http://mem.ie/>]. Accessed 15 February 2021.

[2] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/emergency-management-operational-plan-2018.pdf>]. Accessed 15 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 15 February 2021.

[4] Department of Health of Ireland. 2007. National Pandemic Influenza Plan". [<https://health.gov.ie/blog/publications/national-pandemic-influenza-plan/>]. Accessed 15 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 that the overarching plan includes considerations for pediatric and/or other vulnerable populations. Ireland's Framework for Major Emergency Management (MEM) does not include considerations for paediatric and other vulnerable populations. The Department of Health's MEM states that response agencies and services should be particularly aware of the needs of vulnerable individuals, but the plan does not explicitly mention how paediatric and vulnerable populations should be treated, other than "particular attention is required" when an emergency involves or threatens a place where vulnerable individuals reside or are present for part of the day. [1] The MEM defines vulnerable persons as including children, persons whose movement is inhibited, or persons who are deaf, blind, visually impaired or hearing impaired. [1]

[1] Department of Health of Ireland. 2006. "A Framework for Major Emergency Management".
[<https://health.gov.ie/blog/publications/a-framework-for-major-emergency-management/>]. Accessed 15 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

Ireland does not have specific mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. [1, 2, 3] The regional Major Emergency Response Plans, the most detailed of the emergency response plans, indicate that the private sector may be involved in and called upon in an emergency situation, but does not specify mechanisms for engaging with the private sector. [4] There is no evidence on engagement with the private sector found on the websites of the Health Service Executive (HSE) of Ireland, the Department of Defence, and the Department of Health of Ireland. [2, 3, 4, 5]

[1] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 15 February 2021.

[2] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018".
[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emerp.html>]. Accessed 15 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".
[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 15 February 2021.

[4] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 15 February 2021.

[5] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 2

There is evidence that Ireland has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic, and a policy, and these are in place for more than one disease. NPIs are part of the "National Plan for Pandemic Influenza" of 2007. They include measures such as hand hygiene, household and workplace hygiene, cough and sneeze etiquette, etc. [1] Furthermore, the Emergency Planning website for COVID-19 also publishes NPIs related to COVID-19 such as hand washing, mouth covering, social distancing, behaviours to avoid, etc. [2] There is no further evidence provided on the websites of the Department of Health, and the Emergency Planning. [3, 4]

[1] Government of Ireland. 2007. "National Plan for Pandemic Influenza". [<https://www.gov.ie/en/publication/d9ce58-national-pandemic-influenza-plan/?referrer=http://www.health.gov.ie/blog/publications/national-pandemic-influenza-plan/>]. Accessed 28 February 2021.

[2] Emergency Planning of Ireland. "COVID-19". [<https://www.emergencyplanning.ie/en>]. Accessed 28 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

[4] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 8 March 2021.

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 1

There is evidence that Ireland has activated their national emergency response plan for an infectious disease outbreak in the past year, but there is no evidence that Ireland has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year. Ireland has activated its emergency response plan against COVID-19, which is based on existing public health measures, but there is no evidence provided on which specific measures. The "Resilience and Recovery 2020-2021 Plan for Living with COVID-19" is based on 5 levels of restrictive measures in response to COVID-19 including social and family gatherings, organized indoor events, organized outdoor events, sporting events, religious services, retail services, bars and restaurants, work, domestic travel, schools, transport, etc. The plan also includes governance and communication, safety measures, role of local authorities, resuming public service and service delivery, developing economic resilience, etc. [1] There is no evidence found on completion of a national-level biological threat-focused exercise found on the World Health Organization's simulation exercises, or the websites of the Department of Health, and the Emergency Planning. [2, 3, 4]

[1] Government of Ireland. 15 September 2020. "Resilience and Recovery 2020-2021 Plan for Living with COVID-19". [https://www.citizensinformation.ie/en/health/covid19/public_health_measures_for_covid19.html#I902c9]. Accessed 27 February 2021.

[2] World Health Organization (WHO). "Simulation Exercise". [<https://extranet.who.int/sph/simulation->

exercise?region=All&country=1277]. Accessed 27 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 28 February 2021.

[4] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 28 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 Ireland 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. Ireland has not undertaken a biological-threat focused exercise in the past year. [1] There is no evidence found on the matter on the websites of the World Health Organization (WHO) country and regional pages, the WHO IHR portal, the WHO After Action Reviews, the Department of Health, and the Emergency Planning. [2, 3, 4, 5, 6, 7]

[1] World Health Organization (WHO). "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise?region=All&country=1277>]. Accessed 27 February 2021.

[2] World Health Organization (WHO). "Ireland". [<https://www.euro.who.int/en/countries/ireland>]. Accessed 27 February 2021.

[3] World Health Organization (WHO). [<https://www.who.int/>]. Accessed 27 February 2021.

[4] World Health Organization (WHO). "IHR portal". [<https://www.who.int/ihr/access/en/>]. Accessed 27 February 2021.

[5] World Health Organization (WHO). "After Action Reviews". [<https://extranet.who.int/sph/after-action-review?region=All&country=1277>]. Accessed 27 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 27 February 2021.

[7] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 27 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 Ireland in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives. Ireland has not undertaken a biological-threat focused exercise in the past year. [1] There is no evidence found on the matter on the websites of the World Health Organization (WHO) country and regional pages, the WHO IHR portal, the WHO After Action Reviews, the Department of Health, and the Emergency Planning. [2, 3, 4, 5, 6, 7]

[1] World Health Organization (WHO). "Simulation Exercise". [<https://extranet.who.int/sph/simulation-exercise?region=All&country=1277>]. Accessed 27 February 2021.

[2] World Health Organization (WHO). "Ireland". [<https://www.euro.who.int/en/countries/ireland>]. Accessed 27 February 2021.

[3] World Health Organization (WHO). [<https://www.who.int/>]. Accessed 27 February 2021.

[4] World Health Organization (WHO). "IHR portal". [<https://www.who.int/ihr/access/en/>]. Accessed 27 February 2021.

[5] World Health Organization (WHO). "After Action Reviews". [<https://extranet.who.int/sph/after-action-review?region=All&country=1277>]. Accessed 27 February 2021.

[6] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 27 February 2021.

[7] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 27 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

Ireland has in place an Emergency Operations Centre but it is not health related. The Office of Emergency Planning (OEP), established within the Department of Defence, manages and operates the National Emergency Coordination Centre (NECC), which is maintained in a "high state of readiness. [1, 2] In addition, to activate an area Major Emergency Response Plan, Principal Response agencies (PRAs) should contact the National Emergency Operations Centre, which is operated by the National Ambulance Service. [3] In the event of a major emergency, there are pre-determined locations for local coordination centres and on-site coordination centres are established. [3] The Health Service Executive's Emergency Management Operational Plan does not mention the NECC. [4]

[1] Office of Emergency Planning of the Department of Defence of Ireland. "Strategic Emergency Management National Structures and Framework". [<https://www.emergencyplanning.ie/en/news/strategic-emergency-management>]. Access 15 February 2021.

[2] Department of Defence of Ireland. "Office of Emergency Planning". [<https://www.gov.ie/en/organisation-information/22afe3-office-of-emergency-planning/>]. Access 15 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Access 15 February 2021.

[4] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Access 15 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 no evidence that the Emergency Operations Center (EOC) of Ireland is required to conduct a drill for a public health emergency scenario at least once per year or that they conduct a drill at least once per year. There is no publicly available

information on drills carried out by the National Emergency Coordination Centre (NECC) or the National Emergency Operations Centre (NEOC). The emergency planning documents—A Framework for Major Emergency Management, Area - Major Emergency Plans, and Emergency Management Operational Plan 2018—make no mention of a drill by the centres. [1, 2, 3] There is also no further evidence found on the websites of the Department of Health, Health Service Executive (HSE), Department of Defence, and the National Ambulance Service of such a drill. [4, 5, 6, 7]

- [1] Department of Health of Ireland. 2006. "A Framework for Major Emergency Management". [https://health.gov.ie/blog/publications/a-framework-for-major-emergency-management/]. Accessed 15 February 2021.
- [2] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/]. Accessed 15 February 2021.
- [3] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emerp.html]. Accessed 15 February 2021.
- [4] Department of Health of Ireland. [https://www.gov.ie/en/organisation/department-of-health/]. Accessed 15 February 2021.
- [5] Health Service Executive (HSE) of Ireland. [https://www.hse.ie/eng/]. Accessed 15 February 2021.
- [6] Department of Defence of Ireland. "Office of Emergency Planning". [https://www.defence.ie/office-emergency-planning]. Accessed 15 February 2021.
- [7] National Ambulance Service of Ireland. "National Emergency Operations Centre". [http://www.nationalambulance.ie/Working-For-Us/National-Emergency-Operations-Centre/]. Accessed 15 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 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. The National Emergency Coordination Centre (NECC) of the Office of Emergency Planning in the Department of Defence and the National Emergency Operations Centre (NEOC) of the National Ambulance Service (NAS) do not include any such evidence. [1, 2] There is also no evidence found on the website of the Department of Health, and the Health Services Executive. [3, 4]

- [1] Department of Defence of Ireland. "Office of Emergency Planning". [https://www.defence.ie/office-emergency-planning]. Accessed 15 February 2021.
- [2] National Ambulance Service of Ireland. "National Emergency Operations Centre". [http://www.nationalambulance.ie/Working-For-Us/National-Emergency-Operations-Centre/]. Accessed 15 February 2021.
- [3] Department of Health of Ireland. [https://www.gov.ie/en/organisation/department-of-health/]. Accessed 15 February 2021.
- [4] Health Services Executive of Ireland. [https://www.hse.ie/eng/]. Accessed 15 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 public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event, and there is no evidence of publicly available standard operating procedures, guidelines, MOUs or other agreements between the public health and security authorities to respond to a potential deliberate biological event. Ireland's 2006 Framework for Major Emergency Management, with a purpose to set out common arrangements and structures for front line public sector emergency management, was developed in 2005 and was adopted in 2006, but it does not encompass emergencies related to biological agents. [1, 2] The latest report that is somewhat relevant is from 2002 on the Department of Health's website, Biological threats: A Health Response for Ireland, does not describe collaboration between public health and national security authorities. [3] The Health Service Executive (HSE)'s drafted 2018 Emergency Management Operational Plan states that, "A capability deficiency exists e.g. Chemical, Biological, Radiological and Nuclear (CBRN), Mass, Casualty Incident" and prioritizes identifying planning and response needs in regards to this deficiency in the plan. [4] There is no further evidence found on the websites of the Department of Health and Emergency Planning. [5, 6]

[1] Department of Health of Ireland. 2006. "A Framework for Major Emergency Management".

[<https://health.gov.ie/blog/publications/a-framework-for-major-emergency-management/>]. Accessed 16 February 2021.

[2] MEM.IE: A Framework for Major Emergency Management. [<http://mem.ie/>]. Accessed 16 February 2021.

[3] Department of Health of Ireland, Expert Committee - Contingency Planning for Biological Threats. 2002. "Biological threats: A Health Response for Ireland". [<https://health.gov.ie/blog/publications/biological-threats-a-health-response-for-ireland/>]. Accessed 16 February 2021.

[4] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018".

[<https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/emergency-management-operational-plan-2018.pdf>]. Accessed 16 February 2021.

[5] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/department-of-health/>]. Accessed 16 February 2021.

[6] Emergency Planning. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 16 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

There is no evidence that the risk communication plan of Ireland outlines how messages will reach populations and sectors with different communications needs. Ireland's emergency response plan does not outline how messages will reach populations and sectors with different communications needs. The emergency planning documents suggest that messages and communication with the public should be comprehensive, however details—such as reaching populations with different languages and locations—is not specifically addressed. The Strategic Emergency Management (SEM) guidance on communications from the Office of Emergency Planning highlights the importance of using multiple channels to communicate to reach different segments of the public. [1] The Framework for Major Emergency Management Inter Agency Public Communication Plan includes an appendix with notes on best practice for public communication, but these are general notes on trust, transparency, and listening to public response, and do not provide guidance on how messages will reach different populations and sectors. [2] There is no further evidence provided on the websites of the Department of Health, and the Office of Emergency Planning. [3, 4]

[1] Office of Emergency Planning of the Department of Defence of Ireland. "Strategic Emergency Management Guideline 2 - Emergency Communications". [<https://www.emergencyplanning.ie/en/news/strategic-emergency-management>]. Accessed 16 February 2021.

[2] Department of Health of Ireland. 2012. "A Framework for Major Emergency Management: Working Draft - Interagency Public Communication Plan Media Liaison". [<http://mem.ie/wp-content/uploads/2015/05/Inter-Agency-Public-Communication-Plan-Media-Liaison.pdf>]. Accessed 16 February 2021.

[3] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/department-of-health/>]. Accessed 16 February 2021.

[4] Office of Emergency Planning of the Department of Defence of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 16 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: 1

There is evidence that Ireland has in place, in the national public health emergency response plan, a section detailing a risk communication plan that is specifically intended for use during a public health emergency. According to the Health Service Executive, risk communication to health professionals and the public is part of the role of the Departments of Health

following a public health major incident. [1] The Strategic Emergency Management (SEM) guidance from the Office of Emergency Planning provides development of communication strategies and plans by Lead Government Departments (LGDs) to include communications with key stakeholders, responders and the public. [2] The "Strategic Emergency Management Guideline 2-Emergency Communications" includes details on communication during the preparation, response and recovery phases, the emergency communication planning, operational communication and the flow of information, a checklist of emergency communication, etc. [3] The Department of Health's Framework for Major Emergency Management includes a section on communications that covers a plan for conveying information to the public regarding risks involved, as well as technical communications systems and communication with the media. [4]

[1] Health Service Executive (HSE) of Ireland. "Public Health Emergency Preparedness and Response". [https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emerprep.html]. Accessed 16 February 2021.

[2] Office of Emergency Planning of the Department of Defence of Ireland. "Strategic Emergency Management Guideline 2 - Emergency Communications". [https://www.emergencyplanning.ie/en/news/strategic-emergency-management]. Accessed 16 February 2021.

[3] Office of Emergency Planning of the Department of Defence of Ireland. 2018. "Strategic Emergency Management Guideline 2-Emergency Communications". [https://www.emergencyplanning.ie/system/files/media/file-uploads/2018-08/Strategic%20Emergency%20Management%20Guideline%20%20-%20Emergency%20Communications.pdf]. Accessed 10 March 2021.

[4] Department of Health of Ireland. 2006. "A Framework for Major Emergency Management". [https://health.gov.ie/blog/publications/a-framework-for-major-emergency-management/]. Accessed 16 February 2021.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that the risk communication plan (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. However the Strategic Emergency Management (SEM) guidance from the Office of Emergency Planning provides development of communication strategies and plans by Lead Government Departments (LGDs) to include communications with key stakeholders, responders and the public. It also states that key individuals need to be identified and trained by the LDGs in order to implement the plan and that a Communication Team needs to be established and trained personnel will act as spokesperson. However, there are no specifics provided in regards to the designated spokesperson. [1] There is no further evidence provided on the websites fo the Department of Health, Health Service Executive, and Emergency Planning. [2, 3, 4]

[1] Department of Defence of Ireland. "trategic Emergency Management (SEM) Guideline Emergency Communications". [https://www.emergencyplanning.ie/system/files/media/file-uploads/2018-08/Strategic%20Emergency%20Management%20Guideline%20%20-%20Emergency%20Communications.pdf]. Accessed 28 February 2021.

[2] Department of Health of Ireland. [https://health.gov.ie/]. Accessed 28 February 2021.

[3] Health Service Executive of Ireland. [https://www.hse.ie/eng/]. Accessed 28 February 2021.

[4] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 28 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

There is evidence that the public health system in Ireland 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 in the past year. The Facebook Page of the Department of Health posts information on COVID-19, safety measures against COVID-19, information regarding COVID-19 vaccine, information regarding women's health, nutrition advice, mental health information and services, climate change, health school behaviours, and awareness raising campaigns such as positive age week, information on herd immunity, information campaign on the HPV vaccine, healthy clubs, etc. [1] Furthermore, the area Emergency Plans from the Health Service Executive (HSE)—the LGD in the case of a public health emergency—describes methods for informing the public, including social media, automated text services, and Web and internet services. [2] In addition, the Framework for Major Emergency Management Inter Agency Public Communication Plan sets out common principles for the Principal Response Agencies (PRA) on the provision of information to the public and working with the media, which includes updating PRA websites with the latest information. [3] Ireland's Office of Emergency Planning and HSE also maintain active Twitter accounts. [4, 5]

[1] Department of Health of Ireland Facebook Page. [<https://www.facebook.com/RoinnSlainte/>]. Accessed 27 February 2021.

[2] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".

[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 27 February 2021.

[3] Department of Health of Ireland. 2012. "A Framework for Major Emergency Management: Working Draft - Interagency Public Communication Plan Media Liaison". [<http://mem.ie/wp-content/uploads/2015/05/Inter-Agency-Public-Communication-Plan-Media-Liaison.pdf>]. Accessed 27 February 2021.

[4] Twitter. "Office of Emergency Planning of Ireland". [<https://twitter.com/emergencyie?lang=en>]. Accessed 27 February 2021.

[5] Twitter. "Health Service Executive of Ireland". [<https://twitter.com/HSELive?lang=en>]. Accessed 27 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 (president or ministers) have shared misinformation or disinformation on infectious diseases in the past two years in Ireland. There is no evidence found on the websites of the Government of Ireland, the

Department of Health, and international and national news outlets. [1, 2, 3, 4, 5, 6, 7]

[1] Government of Ireland. [<https://www.gov.ie/en/>]. Accessed 27 February 2021.

[2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 27 February 2021.

[3] BBC News. "Republic of Ireland". [<https://www.bbc.com/news/topics/c207p54mdq7t/republic-of-ireland>]. Accessed 27 February 2021.

[4] CNN International. [<https://edition.cnn.com/>]. Accessed 27 February 2021.

[5] The Irish Times. [<https://www.irishtimes.com/>]. Accessed 27 February 2021.

[6] Irish News. [<https://www.irishnews.com/>]. Accessed 27 February 2021.

[7] Independent. [<https://www.independent.ie/>]. Accessed 27 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: 84.52

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: 105.38

2019

International Telecommunication Union (ITU)

3.6.3 Female access to a mobile phone

3.6.3a

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

Input number

Current Year Score: 3.0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 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

There is evidence that Ireland, in the past year, has 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. On 14 March 2020, in light of the pandemic, the European Union (EU), of which Ireland is a member, adopted Regulation 2020/402, under which special authorization was required to export personal protective equipment (masks, gloves, goggles, face shields and overalls) out of the EU. [1] On 23 April 2020 this was superseded by a new regulation, numbered 2020/568, under which authorization was required to export personal protective equipment out of the EU, except to Albania, Andorra, Bosnia, the Faroe Islands, Gibraltar, Iceland, Kosovo, Liechtenstein, Montenegro, Norway, North Macedonia, San Marino, Serbia and Switzerland. [2] There is no evidence of restrictions found on the websites of the Department of Health, Department of Agriculture, Food and the Marine (DAFM), and the Department of Foreign Affairs and Trade. [3, 4, 5]

[1] European Commission. Commission Implementing Regulation (EU) 2020/402 of 14 March 2020. "Making the exportation of certain products subject to the production of an export authorisation." [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R0402>]. Accessed 7 August 2020.

[2] European Commission. Commission Implementing Regulation (EU) 2020/568 of 23 April 2020. "Making the exportation of certain products subject to the production of an export authorisation." [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020R0568>]. Accessed 7 August 2020.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 26 February 2021.

[4] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 26 February 2021.

[5] Department of Foreign Affairs and Trade of Ireland. [<https://www.dfa.ie/>]. Accessed 26 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: 1

There is no evidence that Ireland has issued a restriction, without international/bilateral support, on the export/import of non-medical goods (e.g. food, textiles, etc) due to an infectious disease outbreak. The European Union (EU), where Ireland is a member state, has issued the Single Market Regulation, which allows for the free movement of essential products such as essential food products, livestock, medical equipment, and medicines. [1] There is no evidence of such restrictions found on the websites of the Department of Health, Department of Agriculture, Food and the Marine (DAFM), and the Department of Foreign Affairs and Trade. [2, 3, 4]

[1] Official Journal of the European Union (EU). 16 March 2020. "COVID-19 Guidelines for border management measures to protect health and ensure the availability of goods and essential services". [[https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020XC0316\(03\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020XC0316(03)&from=EN)]. Accessed 26 February 2021.

[2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 26 February 2021.

[3] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 26 February 2021.

[4] Department of Foreign Affairs and Trade of Ireland. [<https://www.dfa.ie/>]. Accessed 26 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: 1

There is no evidence that Ireland has implemented a ban, without international/bilateral support, on travelers arriving from a specific country or countries due to an infectious disease outbreak. The World Health Organization's COVID-19 Health System Response Monitor Ireland states that there are no border restrictions in place in Ireland. [1] However, Ireland has issued various travel advisories advising against non-essential travel. According to the Shengen Visa Info, experts have urged Ireland to close its borders in order to keep out new infections. [2] There is no further evidence found on the websites of the Department of Health, Department of Foreign Affairs and Trade, Department of Transport, and the Border Management Unit. [3, 4, 5, 6] There is also no evidence found on the WHO Disease Outbreak News. [7]

[1] World Health Organization (WHO). "COVID-19 Health System Response Monitor Ireland".

[<https://www.covid19healthsystem.org/countries/ireland/livinghit.aspx?Section=6.1%20Measures%20in%20other%20sectors&Type=Section>]. Accessed 26 February 2021.

[2] ShengenVisaInfo. 1 April 2020. "Experts Urge Ireland to Close Borders to Keep New Infections Out".

[<https://www.schengenvisa.info.com/news/experts-urge-ireland-to-close-borders-to-keep-new-infections-out/>]. Accessed 26 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 26 February 2021.

[4] Department of Foreign Affairs and Trade of Ireland. [<https://www.dfa.ie/>]. Accessed 26 February 2021.

[5] Department of Transport of Ireland. [<https://www.gov.ie/en/organisation/department-of-transport/>]. Accessed 26

February 2021.

[6] Border Management Unit of Ireland. [<https://www.irishimmigration.ie/border-management-unit/>]. Accessed 26 February 2021.

[7] World Health Organization (WHO). "Disease Outbreak News". [<https://www.who.int/csr/don/en/>]. Accessed 26 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: 331.25

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 1609.96

2017

WHO; national sources

4.1.1c

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

Yes = 1, No = 0

Current Year Score: 1

Ireland has a health workforce strategy in place (which has been updated in the past five years) to identify fields where there is an insufficient workforce and strategies to address these shortcomings. Ireland's Strategic Workforce Planning & Intelligence is part of the National Human Resources Directorate and published a profile on the public health service workforce in 2016. [1] This contributes to the Health Service Executive (HSE)'s Health Services People Strategy 2015-2018. [2] The strategy comprises of a cohesive framework to lead, manage and develop the contribution of the HSE's staff, including a comprehensive workforce plan based on "current and predicted service needs, evidence informed clinical care pathways and staff deployment". [2] Furthermore, there are regular workforce reports, which show employment in each healthcare field such as medical and dental, nursing, health and social care, patient and client care, etc. The reports also include changes in employment as well as turnover summary. The latest report is of December 2020. [3]

[1] Health Service Executive (HSE) of Ireland. "Strategic Workforce Planning & Intelligence".

[<https://www.hse.ie/eng/staff/resources/our-workforce/>]. Accessed 16 February 2021.

[2] Health Service Executive (HSE) of Ireland. "Health Services People Strategy 2015-2018".

[<https://www.hse.ie/eng/staff/resources/hrstrategiesreports/peoplestrategy201518.html>]. Accessed 16 February 2021.

[3] Health Service Executive (HSE) of Ireland. "National Reports-Workforce Reports".

[<https://www.hse.ie/eng/staff/resources/our-workforce/workforce-reporting/national-reports.html>]. Accessed 16 February 2021.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 297

2018

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

Ireland has the capacity to isolate patients with highly communicable diseases in a patient isolation facility located within the country. According to data collected in 2012, two hospitals in Ireland have each an isolation unit for adults and isolation room for children who are highly infectious patients. [1] The National Isolation Unit (NIU), for adult patients, opened in 2008 and is located at the Mater Misericordiae Hospital, Dublin. [2] The NIU is a self-contained unit with 12 beds and is designed to admit, isolate and treat patients suspected or diagnosed with highly infectious diseases that are referred from all over Ireland who have both hazardous and highly infectious diseases. [2] According to a 2008 article from a national online news outlet, announcing the opening of the NIU, the facility is referred to as "state-of-the-art", six of the isolation beds are under negative pressure, and two of the isolation rooms are very large, of high specification, using different air handling systems. [3]

- [1] Schilling, S., Fusco, F. M., De Iaco, G., Bannister, B., Maltezos, H. C., Carson, G.,... & Ippolito, G. (2014). Isolation facilities for highly infectious diseases in Europe-a cross-sectional analysis in 16 countries. PLoS One, 9 [10] , e100401. [<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0100401>]. Accessed 27 February 2021.
- [2] Health Protection Surveillance Centre of Ireland. "National Isolation Unit at the Mater Misericordiae University Hospital, Dublin". [<http://www.hpsc.ie/a-z/vectorborne/viralhaemorrhagicfever/nationalisolationunitatthematermisericordiaehospitaldublin/>]. Accessed 27 February 2021.
- [3] IrishHealth.com. 19 December 2008. "National Isolation Unit opens at the Mater". [<http://www.irishhealth.com/article.html?id=14818>]. Accessed 27 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

There is evidence that Ireland has demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak in the past two years, but there is no evidence that it has developed, updated or tested a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years. Ireland reports in the "National Adult Critical Care Capacity-Census Report 2020" of 2020 by the Health Services Executive (HSE) that due to COVID-19 the critical care bed capacity increased from 255 to 280. [1] Furthermore, an additional critical care surge capacity was provided to the hospitals increasing bed capacity by 70 for a total of 350. Furthermore, the National Clinical Programme for Critical Care recommends increasing capacity of isolation rooms with air ventilation and air filtration. There is no evidence found on a plan to expand isolation capacity in response to an infectious disease outbreak in the past two years on the websites of the Department of Health, and the Emergency Planning. [2, 3]

- [1] Health Services Executive (HSE). 2020. "National Adult Critical Care Capacity-Census Report 2020". [<https://www.hse.ie/eng/about/who/cspd/ncps/critical-care/national-adult-critical-care-capacity-census-2020.pdf>]. Accessed 4 May 2021.
- [2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 4 May 2021.
- [3] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 4 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

There is evidence of a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies (e.g. equipment, reagents and media) and medical supplies (e.g. equipment, PPE) for routine needs. The Health Service Executive, (HSE), Ireland's public health services agency, has a procurement policy, including for the acquisition of laboratory needs, including medical, diagnostic and laboratory equipment, and medical supplies. [1, 2] The HSE governs procurement operations of the health system, and it cooperates with the Office for Government Procurement (OGP) across the public sector. The OGP manages the eTenders website, a central facility for all public sector contracting authorities including the ministries of health and agriculture to advertise procurement opportunities and award notices. [3]

[1] Health Service Executive (HSE) of Ireland. "Health Business Services (HBS) Procurement".

[<https://www.hse.ie/eng/about/who/healthbusinessservices/procurement/>]. Accessed 27 February 2021.

[2] Health Business Services (HBS) of Ireland. "Developing Healthcare Procurement in Ireland".

[<https://www.hse.ie/eng/about/who/healthbusinessservices/procurement/developing-healthcare-procurement-in-ireland.pdf>]. Accessed 27 February 2021.

[3] Office of Government Procurement. [<https://www.etenders.gov.ie/>]. Accessed 27 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: 2

There is evidence that Ireland has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. The Department of Health's 2007 National Pandemic Influenza Plan indicates a large investment towards the national stockpile of medical supplies and medicines to deal with a pandemic influenza outbreak, including personal protective equipment for health care providers and one million packs of Tamiflu. [1] The European Parliament and of the Council Decision No 1082/2013/EU on serious cross-border threats to health established a mechanism for joint procurement of medical countermeasures among Member States, which includes Ireland. [2, 3] Ireland's Statutory Instrument (S.I.) No. 227 of 2015 enables the Minister for Health to sign the EU Joint Procurement Agreement on behalf of the State, and the Health Service Executive (HSE) to act as the contracting authority for joint procurement of medical countermeasures. [4] Furthermore, the European Union has launched the "RescEU" in March 2020, which allows member states to stockpile medical supplies such as PPE, ventilators, medical countermeasures such as vaccines and therapeutics with 90% of the costs paid by the European Commission. [5] EU has announced that it will provide 50 million Euros for stockpile of medical supplies including PPE, ventilators, laboratory supplies, vaccines, and therapeutics. [6] There is no further evidence provided on the websites of the Department of Health, Department of Defence, Emergency Planning, and the Health Products Regulatory Authority (HPRA). [7, 8, 9, 10]

[1] Department of Health of Ireland. 2007. National Pandemic Influenza Plan".

[<https://health.gov.ie/blog/publications/national-pandemic-influenza-plan/>]. Accessed 26 February 2021.

[2] European Parliament and the Council of the European Union Decision No 1082/2013/EU of 22 October 2013 "On serious cross-border threats to health and repealing Decision No 2119/98/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537144957660&uri=CELEX:32013D1082>]. Accessed 26 February 2021.

[3] World Health Organization (WHO) Regional Office for Europe. 6 November 2013. "New European Union legislation improves health security in Europe". [<http://www.euro.who.int/en/health-topics/emergencies/pages/news/news/2013/11/new-eu-legislation-improves-health-security-in-europe>]. Accessed 26 February 2021.

[4] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 227/2015. "European Communities Act 1972 (Joint Procurement Agreement on Serious Cross-Border Threats to Health) Regulations 2015". [<http://www.legislation.ie/eli/2015/si/227/made/en/print>]. Accessed 26 February 2021.

[5] European Movement Ireland. "Procuring emergency medical supplies across the EU". [<https://www.europeanmovement.ie/procuring-emergency-medical-supplies-across-the-eu/>]. Accessed 26 February 2021.

[6] The Irish Times. 19 March 2021. "Medical supplies strong as EU announces €50m stockpile of equipment". [<https://www.irishtimes.com/business/health-pharma/medical-supplies-strong-as-eu-announces-50m-stockpile-of-equipment-1.4206820>]. Accessed 26 February 2021.

[7] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

[8] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 8 March 2021.

[9] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 8 March 2021.

[10] Health Products Regulatory Authority (HPRA) of Ireland. "About Us". [<https://www.hpra.ie/homepage/about-us>]. Accessed 8 March 2021.

4.2.2b

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

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

Current Year Score: 0

There is insufficient evidence that Ireland has a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. However, the European Union (EU) has launched the "RescEU" stockpile of medical supplies in March 2020, which allows member states to stockpile laboratory supplies, as well as medical supplies such as PPE and ventilators with 90% of the costs paid by the European Commission. Although there is mention of laboratory supplies, there is no specific information on the type of laboratory supplies. [1] Furthermore, the EU has announced that it will provide 50 million Euros for stockpile of laboratory supplies, medical supplies, vaccines and therapeutics. [2] There is no further evidence provided on the websites of the Department of Health, Department of Defence, Emergency Planning, and the Health Products Regulatory Authority (HPRA). [3, 4, 5, 6]

[1] European Movement Ireland. "Procuring emergency medical supplies across the EU". [<https://www.europeanmovement.ie/procuring-emergency-medical-supplies-across-the-eu/>]. Accessed 26 February 2021.

[2] The Irish Times. 19 March 2020. "Medical supplies strong as EU announces €50m stockpile of equipment". [<https://www.irishtimes.com/business/health-pharma/medical-supplies-strong-as-eu-announces-50m-stockpile-of-equipment-1.4206820>]. Accessed 26 February 2021.

[3] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 8 March 2021.

[4] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 8 March 2021.

[5] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 8 March 2021.

[6] Health Products Regulatory Authority (HPRA) of Ireland. "About Us". [<https://www.hpra.ie/homepage/about-us>]. Accessed 8 March 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Ireland conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. There is no evidence found on the websites of the Department of Health, Department of Defence, Emergency Planning, and the Health Products Regulatory Authority (HPRA). [1, 2, 3, 4]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 4 May 2021.

[2] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 4 May 2021.

[3] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 4 May 2021.

[4] Health Products Regulatory Authority (HPRA) of Ireland. "About Us". [<https://www.hpra.ie/homepage/about-us>]. Accessed 4 May 2021.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is evidence that Ireland has a mechanism to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency, however there is no evidence that Ireland has a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies. Ireland, as a member state of the European Union (EU) is part of the joint procurement agreement of the EU. The joint procurement agreement is under Decision No.1082/2013/EU "On serious cross-border threats to health and repealing Decision No 2119/98/EC" of 22 October 2013, which lays down the rules on epidemiological surveillance, monitoring, early warning of, and combating serious cross-border threats to health. Under Article 5, provisions are made for the joint procurement of EU institutions and any Member States for medical supplies for serious cross-border threats to health, which include PPE such as coveralls, gloves, goggles, face-shields and mask, and equipment such as ventilators, kits, and laboratory hardware, as well as for medical countermeasures (MCMs) (i.e. vaccines, therapeutics and diagnostics), which include vaccines and diagnostics. [1, 2, 3] During COVID-19, under the joint procurement agreement, the European Commission (EC) has launched five tenders for medical supplies for all its member states (including Ireland), which included coveralls, gloves, goggles, face-shields and mask, and equipment such as ventilators, kits, and laboratory hardware. Under the joint procurement agreement, the EC has also signed an agreement on behalf of the Member States with AstraZeneca to purchase a potential coronavirus vaccine, as well as has concluded explanatory talks with various pharmaceutical companies on the purchase of potential vaccines. Furthermore, under the joint procurement agreement, the EC has signed a contract on 28 July 2020 with the pharmaceutical company Gileadto to secure doses of Veklury, which is the first medicine authorised at the EU level to treat COVID-19. The medicine is made available to all Member States by the EC starting in August, 2020. [3] There is no evidence that Ireland has 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, however the EU through the European Commission will closely collaborate with European manufacturers to scale up the production of medical supplies and has developed a strategy for the development, manufacturing and deployment of vaccines against COVID-19. The EU has revised the harmonized standards of manufacturing to allow for the quality production of medical facemasks, personal eye protection, medical gloves, protective clothing as well as respiratory protective devices. [3] There is no further evidence on the websites of the Department of Health, Health Services Executive, Department of Defence, Emergency Planning, and the National Standards Authority. [4, 5, 6, 7, 8]

[1] European Parliament and of the Council. Decision No.1082/2013/EU of 22 October 2013. "On serious cross-border threats to health and repealing Decision No 2119/98/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1082&from=en>]. Accessed 26 February 2021.

[2] European Commission. "Joint Procurement".

[https://ec.europa.eu/health/preparedness_response/joint_procurement_en]. Accessed 26 February 2021.

[3] European Union. "Public Health". [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/public-health_en]. Accessed 26 February 2021.

[4] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 26 February 2021.

[5] Health Services Executive of Ireland. [<https://www.hse.ie/eng/>]. Accessed 26 February 2021.

[6] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/departement-of-defence/>]. Accessed 26 February 2021.

[7] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 26 February 2021.

[8] National Standards Authority of Ireland. [<https://www.nsai.ie/covid-19-ppe-md/>]. Accessed 26 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 insufficient evidence that Ireland has a mechanism to produce or procure laboratory supplies (e.g. reagents, media) for national use during a public health emergency.

The joint procurement agreement is under Decision No.1082/2013/EU "On serious cross-border threats to health and repealing Decision No 2119/98/EC" of 22 October 2013, which lays down the rules on epidemiological surveillance, monitoring, early warning of, and combating serious cross-border threats to health. Under Article 5, provisions are made for the joint procurement of European Union institutions and any Member States for medical supplies for serious cross-border threats to health. [1, 2, 3] During COVID-19, under the joint procurement agreement, the European Commission has launched five tenders for laboratory supplies and medical supplies for all its member states (including Ireland). [3] Furthermore, there is no evidence that Ireland has a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) for national use during a public health emergency. There is no further evidence on the websites of the Department of Health, Health Services Executive, Department of Defence, Emergency Planning, and the National Standards Authority. [4, 5, 6, 7, 8]

[1] European Parliament and of the Council. Decision No.1082/2013/EU of 22 October 2013. "On serious cross-border threats to health and repealing Decision No 2119/98/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013D1082&from=en>]. Accessed 26 February 2021.

[2] European Commission. "Joint Procurement".

[https://ec.europa.eu/health/preparedness_response/joint_procurement_en]. Accessed 26 February 2021.

[3] European Union. "Public Health". [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/public-health_en]. Accessed 26 February 2021.

[4] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 26 February 2021.

[5] Health Services Executive of Ireland. [<https://www.hse.ie/eng/>]. Accessed 26 February 2021.

[6] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/departement-of-defence/>]. Accessed 26 February 2021.

[7] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 26 February 2021.

[8] National Standards Authority of Ireland. [<https://www.nsai.ie/covid-19-ppe-md/>]. Accessed 26 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

Ireland does not have a plan, program, or guidelines for dispensing medical countermeasures (MCM) for national use during a public health emergency. The Health Service Executive's area Major Emergency Plans mention that, in the event of a pandemic, people who are infected with the flu virus will be given antiviral medicine, however, no further details on plans for dispensing medical countermeasures for national use are provided. [1] Ireland's Office of Emergency Planning of the Department of Defence does not include a plan, program, or guidelines for medical countermeasures. [2] The European Centre for Disease Prevention and Control's report on core competencies for EU Member States includes medical countermeasures, but no information is available on Ireland's establishment of a plan for medical countermeasures. [3] There is no further evidence on the websites of the Department of Health, and the Department of Defence. [4, 5]

[1] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".

[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 16 February 2021.

[2] Office of Emergency Planning of the Department of Defence of Ireland. "Emergency Planning".

[<https://www.emergencyplanning.ie/en>]. Accessed 16 February 2021.

[3] European Centre for Disease Prevention and Control. October 2017. "Public health emergency preparedness: Core competencies for EU Member States". [<https://ecdc.europa.eu/en/publications-data/public-health-emergency-preparedness-core-competencies-eu-member-states>]. Accessed 16 February 2021.

[4] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/departement-of-health/>]. Accessed 16 February 2021.

[5] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/departement-of-defence/>]. Accessed 16 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 in Ireland to receive health personnel from other countries to respond to a public health emergency. In June 2015, Ireland signed the European Union Joint Procurement Agreement as part of the European Parliament and of the Council Decision No 1082/2013/EU on serious cross-border threats to health. [1, 2] In addition, the Health Service Executive's area Major Emergency Plans state that "the European Community has established a Community Mechanism to facilitate the provision of assistance between the member states in the event of major emergencies.". [3] However, the sharing of public health personnel is not delineated. There is no further evidence found on the websites of the Department of Health, and Department of Defence. [4, 5]

[1] European Commission. "Joint Procurement Agreement - List of EU countries".

[https://ec.europa.eu/health/preparedness_response/joint_procurement/jpa_signature_en]. Accessed 16 February 2021.

[2] European Parliament and the Council of the European Union Decision No 1082/2013/EU of 22 October 2013 "On serious cross-border threats to health and repealing Decision No 2119/98/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537144957660&uri=CELEX:32013D1082>]. Accessed 16 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".

[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 16 February 2021.

[4] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/departments-of-health/>]. Accessed 16 February 2021.

[5] Department of Defence of Ireland. [<https://www.gov.ie/en/organisation/departments-of-defence/>]. Accessed 16 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: 0

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.7

2015

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

4.4.1c

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

Input number

Current Year Score: 680.95

2017

WHO Global Health Expenditure database

4.4.2 Paid medical leave

4.4.2a

Are workers guaranteed paid sick leave?

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

Current Year Score: 2

2020

World Policy Analysis Center

4.4.3 Healthcare worker access to healthcare

4.4.3a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Ireland has issued legislation, a policy or a public statement committing to provide prioritized health care services to healthcare workers who become sick as a result of responding to a public health emergency. However, according to a 2013 study of preparedness of Irish hospitals to respond to a influenza pandemic, 65% of hospitals in Ireland have a plan to prioritise hospital workers to receive vaccines in the event of an infectious emergency. [1] There is no information of this nature made available by the Department of Health, Department of Defence, or the Health Service Executive (HSE)'s emergency planning documents. [2, 3, 4, 5]

[1] Reidy, M., Ryan, F., Hogan, D., Lacey, S., & Buckley, C. 2015. "Preparedness of hospitals in the Republic of Ireland for an influenza pandemic, an infection control perspective". BMC Public Health. 15[1], 847.

[https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-015-2025-6]. Accessed 16 February 2021.

[2] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 16 February 2021.

[3] Department of Defence of Ireland. [<https://www.defence.ie/>]. Accessed 16 February 2021.

[4] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/emergency-management-operational-plan-2018.pdf>]. Accessed 16 February 2021.

[5] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 16 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 in place for public health officials and healthcare workers to communicate during a public health emergency. However, there is evidence that considerations have been made for communication during a public health emergency. The Health Service Executive (HSE) of Ireland indicates that the Departments of Public Health are responsible for risk communication and guidance to health professionals. [1] As described in the HSE Area Major Emergency Plans, a Client Director from the Communications Division of the HSE "works with" programme managers for local health service teams. [2] Furthermore, the National Emergency Operations Centre (NEOC) is the primary means by which the HSE mobilises its resources at the scene and maintain communications between the site(s) and receiving hospital(s). [2] There is no further evidence found on the websites of the Department of Health, and the Office of Emergency Planning of the Department of Defence. [3, 4]

[1] Health Service Executive (HSE) of Ireland. "Public Health Emergency Preparedness and Response". [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Accessed 16 February 2021.

[2] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 16 February 2021.

[3] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/department-of-health/>]. Accessed 16 February 2021.

[4] Office of Emergency Planning of the Department of Defence of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 16 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 healthcare workers to communicate during an emergency, and the evidence of communication considerations does not specify that it encompasses healthcare workers in both the public and private sector. [1, 2] The Major Emergency Plans for geographic areas mentions that private sector resources, such as hospitals, may be mobilised during an emergency or may be involved in a major emergency through ownership of the site where the emergency has occurred, but does not describe how public health officials and healthcare workers would communicate with the private sector in emergency circumstances. [3] There is no further evidence found on the websites of the Department of Health, and the Office of Emergency Planning of the Department of Defence. [4, 5]

[1] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Accessed 16 February 2021.

[2] Emergency Planning of Ireland. [<https://www.emergencyplanning.ie/en/emergencies>]. Accessed 16 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".

[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 16 February 2021.

[4] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/departments-of-health/>]. Accessed 16 February 2021.

[5] Office of Emergency Planning of the Department of Defence of Ireland. [<https://www.emergencyplanning.ie/en>]. Accessed 16 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

There is evidence that the national public health system monitors and tracks the number of health care associated infections (HCAI) that take place in healthcare facilities. The Health Protection Surveillance Centre (HPSC)—which is part of the Health Service Executive, Ireland's public health services agency—conducts surveillance of health care associated infections (HCAI) that take place in the country's healthcare facilities. [1] The latest HPSC summary report of HCAI is of October 2019. [2] The report includes a hand hygiene compliance audit and cases of patients with *C. difficile* Infection, and Carbapenemase-Producing Enterobacteriales (CPE). [2]

[1] Health Protection Surveillance Centre (HPSC). "Surveillance". [[http://www.hpsc.ie/a-](http://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/surveillance/)

[z/microbiologyantimicrobialresistance/infectioncontrolandhai/surveillance/](http://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/surveillance/)]. Accessed 16 February 2021.

[2] Health Protection Surveillance Centre (HPSC). 2019. "HPSC Surveillance Report: October 2019". [<https://www.hpsc.ie/a-z/microbiologyantimicrobialresistance/infectioncontrolandhai/surveillance/hpsc-surveillance/HPSC%20Surveillance%20Report%20October%202019%20FINAL.pdf>]. Accessed 16 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 in Ireland before beginning a clinical trial. Ireland's Statutory Instrument (S.I.) 190 of 2004, which implements the EU Clinical Trials Directive (2001/20/EC), requires an ethics committee "issues a favourable opinion in relation to the clinical trial" before a clinical trial may commence. [1] The ethics committee is responsible for "determining the suitability of an investigator and the quality of of the facilities at the clinical trial site". [2] There are 12 recognized ethics committees in Ireland. [3, 4]

[1] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 190/2004. "European Communities (Clinical Trials on Medicinal Products For Human Use) Regulations, 2004". [<http://www.irishstatutebook.ie/eli/2004/si/190/made/en/print>]. Accessed 18 February 2021.

[2] Health Products Regulatory Authority. 21 October 2019. "Guide to Clinical Trial Applications". [<https://www.hpra.ie/docs/default-source/publications-forms/guidance-documents/aut-g0001-guide-to-clinical-trial-applications-v12.pdf?sfvrsn=47>]. Accessed 18 February 2021.

[2] Government of Ireland. "Research Ethics Committee". [<https://www.gov.ie/en/publication/424510-european-communities-clinical-trials-on-medicinal-products-for-human/?referrer=http://www.health.gov.ie/implementation-of-eu-directive-on-good-clinical-practice-in-clinical-trials/>]. Accessed 18 February 2021.

[3] European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004". [<https://health.gov.ie/wp-content/uploads/2016/07/European-Communities-Clinical-Trials-on-Medicinal-Products-for-Human-Use-Regulations-2004.pdf>]. Accessed 18 February 2021.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 1

There is evidence that Ireland has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. According to a 2014 report from the Platform for European Preparedness Against (Re-)emerging Epidemics (PREPARE) and the European Commission, Ireland indicated—through online survey and interviews—that it has a "fast track approval process" to expedite a study set up during a pandemic or epidemic, including for ethical approvals. [1] The PREPARE report sets out a preliminary assessment of the Ethical, Administrative, Regulatory and Logistical (EARL) landscape for clinical studies in Europe, and includes authors from University College Dublin. [1] Furthermore, the Health Products Regulatory Authority (HPRA) of Ireland has published that it will conduct an expedited review process for clinical trials of human medicines or medical devices related to COVID-19. [2] No further details are

available about an expedited process, including in Ireland's legislation regarding clinical trials on medicinal products for human use, Statutory Instrument (S.I.) 190 of 2004, and Ireland's Department of Health. [3, 4, 5] In addition, while the PREPARE report learned from interviews and surveys that Ireland has an expedited process, no countries in the report, including Ireland, provide information regarding "fast track" (expedited) research approval on their websites. [1]

[1] Platform for European Preparedness Against (Re-)emerging Epidemics (PREPARE) and the European Commission. 2014. "PREPARE EARL: Ethical, Administrative, Regulatory and Logistical solutions Report: June 2014". [http://www.prepare-europe.eu/Portals/0/Documents/Publications/PREPARE%20Report%20Part%20A_Final_Jun2014.pdf]. Accessed 18 February 2021.

[2] Health Products Regulatory Authority (HPRA) of Ireland. "COVID-19 Related Human Research - Expedited Regulatory Review". [[http://www.hpra.ie/homepage/medicines/regulatory-information/clinical-trials/covid-19-\(coronavirus\)-and-cts/covid-19-related-human-research-expedited-regulatory-and-ethical-review](http://www.hpra.ie/homepage/medicines/regulatory-information/clinical-trials/covid-19-(coronavirus)-and-cts/covid-19-related-human-research-expedited-regulatory-and-ethical-review)]. Accessed 18 February 2021.

[3] electronic Irish Statute Book (eISB). Statutory Instrument (S.I.) No. 190/2004. "European Communities (Clinical Trials on Medicinal Products For Human Use) Regulations, 2004". [<http://www.irishstatutebook.ie/eli/2004/si/190/made/en/print>]. Accessed 18 February 2021.

[4] Government of Ireland. "Research Ethics Committee". [<https://www.gov.ie/en/publication/424510-european-communities-clinical-trials-on-medicinal-products-for-human/?referrer=http://www.health.gov.ie/implementation-of-eu-directive-on-good-clinical-practice-in-clinical-trials/>]. Accessed 18 February 2021.

[5] European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004".

[<https://health.gov.ie/wp-content/uploads/2016/07/European-Communities-Clinical-Trials-on-Medicinal-Products-for-Human-Use-Regulations-2004.pdf>]. Accessed 18 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. Ireland's Health Products Regulatory Authority (HPRA) is responsible for monitoring and regulating health products, including medicines for humans and animals. [1] Other regulatory functions of the agency include organs intended for transplantation, medical devices, cosmetic products etc. [1]

[1] Health Products Regulatory Authority (HPRA) of Ireland. "About Us". [<https://www.hpra.ie/homepage/about-us>]. Accessed 18 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: 0

There is no evidence that there is an expedited process for approving medical countermeasures for human use during public health emergencies. Information on clinical trials and ethics committees provided by the Department of Health of Ireland—

including national legislation on the control of placing medicinal products on the market (S.I. No. 540 of 2007) and clinical trials on medicinal products for human use (S.I. 374 of 2006)—do not mention such an expedited process. [1] The Health Service Executive (HSE)'s emergency planning documents and Health Products Regulatory Authority (HPRA) also make no mention of an expedited process. [2, 3, 4] There is also no further evidence found on this matter on the website of the Department of Health. [5]

[1] Government of Ireland. "Clinical Trials". [<https://www.gov.ie/en/publication/424510-european-communities-clinical-trials-on-medicinal-products-for-human/?referrer=http://www.health.gov.ie/implementation-of-eu-directive-on-good-clinical-practice-in-clinical-trials/>]. Accessed 18 February 2021.

[2] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018". [<https://www.hse.ie/eng/services/publications/serviceplans/service-plan-2018/operational-plans-2018/emergency-management-operational-plan-2018.pdf>]. Accessed 18 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans". [<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 18 February 2021.

[4] Health Products Regulatory Authority (HPRA) of Ireland. "About Us". [<https://www.hpra.ie/homepage/about-us>]. Accessed 18 February 2021.

[5] Department of Health of Ireland. [<https://www.gov.ie/en/organisation/department-of-health/>]. Accessed 18 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

Ireland does not have a national risk reduction strategy that integrates pandemics, nor is there a standalone national disaster risk reduction strategy for pandemics. The Department of Health and the Health Service Executive (HSE)'s emergency planning documents make no mention of a risk reduction strategy for pandemics. [1, 2, 3] However, pandemics are integrated into the European Commission's overview of natural and man-made disaster risks. [4]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 18 February 2021.

[2] Health Service Executive (HSE) of Ireland. 2018. "Emergency Management Operational Plan 2018".

[<https://www.hse.ie/eng/services/list/5/publichealth/publichealthdepts/protecthealth/emereprep.html>]. Accessed 18 February 2021.

[3] Health Service Executive (HSE) of Ireland. "Area - Major Emergency Plans".

[<https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/>]. Accessed 18 February 2021.

[4] European Commission. 18 December 2017. "Overview of Natural and Man-made Disaster Risks the European Union may face". [<https://publications.europa.eu/en/publication-detail/-/publication/285d038f-b543-11e7-837e-01aa75ed71a1/language-en>]. Accessed 18 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: 2

Ireland has cross-border agreements with regards to public health emergencies. In June 2015, Ireland signed the European Union Joint Procurement Agreement as part of the European Parliament and of the Council Decision No 1082/2013/EU on serious cross-border threats to health, including emergency situations or pandemic situations with respect to human influenza. [1, 2] The European Centre for Disease Prevention and Control's report on core competencies for EU Member States includes public health preparedness capabilities with regards to public health emergencies. [3] These capabilities include: detection and assessment; policy development, adaptation, and implementation; health services; coordination and communication (within the public health emergency preparedness system); and emergency risk communication (with the public). [3]

[1] European Commission. "Joint Procurement Agreement - List of EU countries".

[https://ec.europa.eu/health/preparedness_response/joint_procurement/jpa_signature_en]. Accessed 18 February 2021.

[2] European Parliament and the Council of the European Union Decision No 1082/2013/EU of 22 October 2013 "On serious

cross-border threats to health and repealing Decision No 2119/98/EC". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537144957660&uri=CELEX:32013D1082>]. Accessed 18 February 2021.

[3] European Centre for Disease Prevention and Control. October 2017. "Public health emergency preparedness: Core competencies for EU Member States". [<https://ecdc.europa.eu/en/publications-data/public-health-emergency-preparedness-core-competencies-eu-member-states>]. Accessed 18 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: 2

Ireland has cross-border agreements, protocols, or MOUs with neighboring countries, or as part of a regional group, with regards to animal health emergencies. Ireland has an agreement in place with Northern Ireland regarding animal health emergencies, as part of an all-Island Animal Health and Welfare Strategy. This includes joint strategies with regard to animal health, animal disease control, exotic disease contingency preparedness and trade certification issues. [1] In addition, the European Union has official communication from the Commission on an animal health strategy for the European Union, 2007-2013, which discusses the importance of country collaboration during animal health emergencies, though this does not mention official agreements between countries. [2]

[1] "All-Island Animal Health and Welfare Strategy". [https://nanopdf.com/download/all-island-animal-health-and-welfare-strategy_pdf]. Accessed 18 February 2021.

[2] EUR-Lex. "Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a new Animal Health Strategy for the European Union (2007-2013) where "Prevention is better than cure"". [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52007DC0539>]. Accessed 18 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: 0

There is no evidence that Ireland has allocated national funds to improve capacity to address epidemic threats within the past three year. There is no evidence of allocated funds to address epidemic threat in the funding schemes of the Health Research Board. [1] There is also no evidence found on the national budget priorities in teh past three years. [2] There is no further evidence found on the websites of the Governemt of Ireland, the Department of Health, and the Department of Department of Agriculture, Food and the Marine (DAFM). [3, 4, 5]

[1] Health Research Board. "All Funding". [<https://www.hrb.ie/funding/funding-schemes/all-funding-schemes/>]. Accessed 27 February 2021.

[2] Government of Ireland Budget. "Budget". [<http://www.budget.gov.ie/Budgets/2019/2019.aspx>]. Accessed 27 February 2021.

[3] Government of Ireland. [<https://www.gov.ie/en/>]. Accessed 27 February 2021.

[4] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 27 February 2021.

[5] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 27 February 2021.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a publicly identified special emergency public financing mechanism and funds which Ireland can access in the face of a public health emergency. There is no evidence found through the emergency planning documents, Department of Health, Health Service Executive, media outlets, or academic publications. [1, 2] Ireland is not an IDA-eligible borrowing country eligible for the World Bank pandemic financing facility. [3]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 18 February 2021.

[2] Health Service Executive (HSE) of Ireland. [<https://www.hse.ie/>]. Accessed 18 February 2021.

[3] International Development Association (IDA). "Borrowing Countries". [<http://ida.worldbank.org/about/borrowing-countries>]. Accessed 18 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, in the past three years, senior leaders in Ireland have made a public commitment to support other countries to improve capacity to address epidemic threats by providing financing or support, or to improve its

own domestic capacity to address epidemic threats. There is no evidence of senior leaders making public commitments through the Irish Government News Service, Department of Health, Department of Foreign Affairs and Trade, or the WHO. [1, 2, 3, 4] However, there is evidence that in the past three years Ireland has committed financing to other countries. The Ebola Recovery Tracking Initiative—which tracks official development assistance toward Ebola recovery efforts in Guinea, Liberia, Sierra Leone, and the Mano River Union—indicates that Ireland has pledged nearly US\$12m to Liberia and Sierra Leone between 2015–2017. [5] Irish Aid, the Department of Foreign Affairs and Trade's aid programme that supports long term development and provides humanitarian assistance, particularly in sub-Saharan Africa, has emergency and recovery funding, but there is no specific mention of funding to address epidemic threats. [6] According the Global Health Security Funding Tracking Dashboard, from 2014 to 2020, Ireland has provide US\$174m in funds to other countries, with the largest contributions made to Mozambique (US\$15.3m) and Tanzania (US\$14.6m), Liberia (US\$10.7m), WHO (US\$10.7m), Ethiopia (US\$10.1m), etc., however no funds fall under the Global Health Security Agenda. [7]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 18 February 2021.

[2] Department of Foreign Affairs and Trade of Ireland. [<https://www.dfa.ie/>]. Accessed 18 February 2021.

[3] MerionStreet.ie - Irish Government News Service. "Government Press Releases". [<https://merrionstreet.ie/en/News-Room/Government-Press-Releases/>]. Accessed 18 February 2021.

[4] World Health Organization (WHO). [<http://www.who.int/>]. Accessed 18 February 2021.

[5] Office of the Secretary-General's Special Adviser on Community-Based Medicine and Lessons from Haiti. "Financial Tracking - By Donor". [<https://ebolarecovery.org/financial-tracking/by-donor/>]. Accessed 18 February 2021.

[6] Irish Aid of the Department of Foreign Affairs and Trade of Ireland. "Emergency and Recovery Funding". [<https://www.irishaid.ie/what-we-do/who-we-work-with/civil-society/emergency-and-recovery-funding/>]. Accessed 18 February 2021.

[7] Global Health Security Funding Tracking Dashboard. "Ireland - Funder Profile". [<https://tracking.ghscosting.org/details/969/funder>]. Accessed 18 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 Ireland has provided other countries with financing or technical support to improve capacity to address epidemic threats in the past three years, but there is no evidence that it has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats in the past three years. Irish Aid, the Department of Foreign Affairs and Trade's aid programme that supports long term development and provides humanitarian assistance, particularly in sub-Saharan Africa, has emergency and recovery funding, but there is no specific mention of funding to address epidemic threats. [1] According the Global Health Security Funding Tracking Dashboard, from 2014 to 2020, Ireland has provide US\$174m in funds to other countries, with the largest contributions made to Mozambique (US\$15.3m) and Tanzania (US\$14.6m), Liberia (US\$10.7m), WHO (US\$10.7m), Ethiopia (US\$10.1m), etc., however no funds fall under the Global Health Security Agenda. [2] There is no evidence of Ireland requesting financing or technical support from donor's found on the Global Health Security Funding Tracking Dashboard. There are USD \$74.20k disbursed to Ireland for immunization, but there are no amounts provided for specific donors. [3] There is no further evidence on the websites of the Department of Health, Department of Foreign Affairs and Trade, and the World Health Organization. [4, 5, 6, 7]

- [1] Irish Aid of the Department of Foreign Affairs and Trade of Ireland. "Emergency and Recovery Funding". [<https://www.irishaid.ie/what-we-do/who-we-work-with/civil-society/emergency-and-recovery-funding/>]. Accessed 27 February 2021.
- [2] Global Health Security Funding Tracking Dashboard. "Ireland - Funder Profile". [<https://tracking.ghscosting.org/details/969/funder>]. Accessed 27 February 2021.
- [3] Global Health Security Funding Tracking Dashboard. "Ireland - Recipient Profile". [<https://tracking.ghscosting.org/details/969/recipient>]. Accessed 27 February 2021.
- [4] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 27 February 2021.
- [5] Department of Foreign Affairs and Trade of Ireland. [<https://www.dfa.ie/>]. Accessed 27 February 2021.
- [6] World Health Organization (WHO). [<https://www.who.int/>]. Accessed 27 February 2021. [7 World Health Organization (WHO). "Ireland". [<https://www.euro.who.int/en/countries/ireland>]. Accessed 27 February 2021.

5.5.4c

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

Yes = 1, No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence of a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza. There is no evidence found of such a plan on the websites of the Department of Health, Department of Agriculture, Food and the Marine, or the Health Research Board. [1, 2, 3]

[1] Department of Health of Ireland. [<https://health.gov.ie/>]. Accessed 18 February 2021.

[2] Department of Agriculture, Food and the Marine (DAFM) of Ireland. [<https://www.agriculture.gov.ie/>]. Accessed 18 February 2021.

[3] Health Research Board. [<http://www.hrb.ie/>]. Accessed 18 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 evidence that Ireland has not shared samples in accordance with the PIP framework in the past two years in local and international media outlets or through the WHO. [1, 2, 3]

[1] World Health Organisation (WHO). "Virus sharing". [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 18 February 2021.

[2] World Health Organisation (WHO). [<https://www.who.int/>]. Accessed 18 February 2021.

[3] World Health Organisation (WHO). "Ireland". [<https://www.euro.who.int/en/countries/ireland>]. Accessed 18 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 Ireland has not shared pandemic pathogen samples during an outbreak in the past two years in local or international media outlets or through the WHO. [1, 2, 3] There is also no evidence on Ireland not sharing pathogen samples of COVID-19. [1, 2,3, 4]

[1] World Health Organisation (WHO). "Virus sharing". [http://www.who.int/influenza/pip/virus_sharing/en/]. Accessed 18 February 2021.

[2] World Health Organisation (WHO). [<https://www.who.int/>]. Accessed 18 February 2021.

[3] World Health Organisation (WHO). "Ireland". [<https://www.euro.who.int/en/countries/ireland>]. Accessed 18 February 2021.

[4] World Health Organisation (WHO). "Ireland COVID-19 Dashboard". [<https://covid19.who.int/region/euro/country/ie>]. Accessed 18 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: 3

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 72

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: 4

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.3 Risk of social unrest

6.1.3a

What is the risk of disruptive social unrest?

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

Current Year Score: 2

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 4

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

How high is the risk of organized criminal activity to the government or businesses in the country?

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

Current Year Score: 2

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.2 SOCIO-ECONOMIC RESILIENCE

6.2.1 Literacy

6.2.1a

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

Input number

Current Year Score: 99.9

2008-2018

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

6.2.2 Gender equality

6.2.2a

United Nations Development Programme (UNDP) Gender Inequality Index score

Input number

Current Year Score: 0.91

2018

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

6.2.3 Social inclusion

6.2.3a

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

Input number

Current Year Score: 0.1

2016

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 0

The share of employment in the informal sector in Ireland is 13.5%. The data is made available in 2018 by the International Labour Organization (ILO) and pertains to the year 2012. [1] This is the last publicly available data.

[1] International Labour Organization (ILO). 2018. "Women and Men in the Informal Economy: a Statistical Picture". [https://wecglobal.org/uploads/2019/07/2018_ILO_Informal-economy-statistics.pdf]. Accessed 28 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: 1

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 2

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.31

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 3

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 63.41

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: 1.04

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: 4

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: 82.26

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: 326.8

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 14.22

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 23.6

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 25.3

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: 97.39

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 91.25

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: 4357.14

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: 2

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

Share of population that trust medical and health advice from health professionals , More than 80% = 2, Between 60-80%, or no data available = 1, Less than 60% = 0

Current Year Score: 2

2018

Wellcome Trust Global Monitor 2018