

Liechtenstein

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

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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

Although Liechtenstein does not have an independent national AMR plan for the surveillance, detection and reporting of priority AMR pathogens, Switzerland's AMR plan applies to Liechtenstein. As described in the World Health Organization's Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017, Liechtenstein relies on Swiss capabilities for detecting, monitoring and preventing AMR, takes part in Swiss AMR monitoring programmes in both the human and animal sectors, and will apply the Swiss Strategy on Antibiotic Resistance. [1] Switzerland's Strategy on Antibiotic Resistance, which was adopted in 2015, aims to improve current AMR surveillance systems across four areas “ humans, animals, agriculture and the environment. [2] The document describes measures in eight strategic fields of activity: monitoring, prevention, appropriate use of antibiotics, resistance control, research and development, cooperation, information and education, and general conditions. [2] The Strategy covers a comprehensive range of measures related to preventing and fighting AMR, such as the systematic monitoring, collection, analysis and publishing of AMR data. [2] Switzerland also publishes annual reports on AMR, which outline the current state of AMR in the country and describe measures undertaken to monitor and reduce its occurrence. [3]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 18 November 2015. "Strategy on Antibiotic Resistance Switzerland." [<https://www.star.admin.ch/dam/star/en/dokumente/strategiebericht-star.pdf.download.pdf/strategy-on-antibiotic-resistance-en.pdf>]. Accessed 18 November 2020.

[3] Federal Office of Public Health of the Swiss Confederation. November 2020. "Swiss Antibiotic Resistance Report 2020." [https://www.star.admin.ch/dam/star/de/dokumente/swiss-antibiotic-resistance-report-2020.pdf.download.pdf/BAG_Antibiotikaresistenz_2020_def_WEB.pdf]. Accessed 18 November 2020.

1.1.1b

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

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

Current Year Score: 2

Liechtenstein does not have its own national laboratory or laboratory system that tests for priority AMR pathogens, but Liechtenstein is incorporated into the Swiss laboratory system, which conducts testing for all 7+1 priority AMR pathogens. As

described in the World Health Organization's Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein "relies on Swiss capabilities for detecting, monitoring and preventing antimicrobial resistance (AMR), takes part in Swiss AMR monitoring programmes in both the human and animal sectors, and will apply the Swiss AMR strategy." [1] The JEE states that Liechtenstein relies on Swiss laboratory capacity because Liechtenstein has no laboratory capacities of its own. [1] The JEE notes that the two countries have no formal agreements on shared laboratory capacities, but in practice "Liechtenstein is treated in the same fashion as any Swiss canton with regard to sharing laboratory capacities", including for AMR detection. [1] Switzerland's surveillance system and research instrument for AMR is the Swiss Center for Antibiotic Resistance (Anresis), which is run by the Institute for Infectious Diseases at the University of Bern with support from Switzerland's Federal Office of Public Health. [2] Anresis collects continuous resistance data from routine diagnostics at 30 laboratories for human medicine and 9 laboratories for animal medicine. [3] These laboratories are located throughout Switzerland, but none are in Liechtenstein. [3] Among others, Anresis collects and publishes data on 7 priority AMR pathogens: E. coli, K. pneumoniae, S. aureus, S. pneumoniae, Salmonella spp., Shigella spp and N. gonorrhoeae. [4] The National Center for Mycobacteriology at the University of Zurich, on behalf of the Federal Office of Public Health, conducts epidemiological testing for Mycobacterium tuberculosis, including for antibiotic resistant tuberculosis. [5]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Center for Antibiotic Resistance. "Mission statement." ("Leitbild.") [<https://www.anresis.ch/de/uber-uns/leitbild/>]. Accessed 19 November 2020.

[3] Swiss Center for Antibiotic Resistance. "Laboratories." ("Laboratorien.") [<https://www.anresis.ch/de/antibiotikaresistenz/laboratorien/>]. Accessed 19 November 2020.

[4] Swiss Center for Antibiotic Resistance. "Interactive Database Query." [<https://www.anresis.ch/antibiotic-resistance/resistance-data-human-medicine/interactive-database-query/>]. Accessed 19 November 2020.

[5] University of Zurich. "National Center for Mycobacteriology." ("Nationales Zentrum für Mykobakteriologie.") [<https://www.imm.uzh.ch/de/services/mycobacteriology/NZM.html>]. Accessed 19 November 2020.

1.1.1c

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein's government conducts environmental detection and surveillance activities for antimicrobial residues or AMR organisms. Under sections 5.4 and 5.6 of Liechtenstein's Management Plan and Program of Measures under the Water Framework Directive (adopted October 2019), there are seven locations on waterways in Liechtenstein where there is regular surveillance of chemical and biological elements in the water. [1] According to sub-section 5.6.3 of this document, this surveillance includes testing for three different types of antibiotic: clarithromycin, azithromycin and erythromycin. [1] In addition, according to the World Health Organization's Joint External Evaluation (JEE) of IHR Core Capacities of Switzerland and Liechtenstein, which was conducted in 2017, Liechtenstein "relies on Swiss capabilities for detecting, monitoring and preventing antimicrobial resistance (AMR), takes part in Swiss AMR monitoring programmes in both the human and animal sectors, and will apply the Swiss AMR strategy." [2] The JEE reports that the countries conduct "systematic monitoring of emerging AMR threats and common reporting of human & animal surveillance results, as well as environmental sampling in rivers and lakes". [2] The Swiss Federal Office for the Environment (FOEN), Switzerland's environmental agency, is one of the main agencies engaged in implementing Switzerland's 2015 Strategy on Antibiotic Resistance, which includes provisions on

environmental detection and surveillance for AMR. [3] FOEN has a network of monitoring sites at waterways, designed to detect the concentration of pharmaceuticals. [4] However, there is no mention of Liechtenstein in Switzerland's 2015 Strategy on Antibiotic Resistance, or on FOEN's webpage about environmental surveillance for antimicrobial residues. [3, 4]

- [1] Government of the Principality of Liechtenstein. October 2019. "Management Plan and Program of Measures under the Water Framework Directive." ("Bewirtschaftungsplan und Massnahmenprogramm nach Wasserrahmenrichtlinie.") [https://www.llv.li/files/au/bewirtschaftungsplan-und-massnahmenprogramm_final-2.pdf]. Accessed 21 April 2021. [1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [3] Swiss Federal Council. 18 November 2015. "Strategy on Antibiotic Resistance Switzerland." [<https://www.star.admin.ch/dam/star/en/dokumente/strategiebericht-star.pdf.download.pdf/strategy-on-antibiotic-resistance-en.pdf>]. Accessed 18 November 2020.
- [4] Federal Office for the Environment of the Swiss Confederation. 15 August 2019. "Pharmaceuticals in groundwater." ("Arzneimittel im Grundwasser.") [<https://www.bafu.admin.ch/bafu/de/home/themen/wasser/fachinformationen/zustand-der-gewaesser/zustand-des-grundwassers/grundwasser-qualitaet/arzneimittel-im-grundwasser.html>]. Accessed 18 November 2020.

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 2

There is legislation in place requiring prescriptions for human antibiotic use in Liechtenstein, and there is no evidence of gaps in enforcement. According to article 23a of Switzerland's Federal Law on Pharmaceuticals and Medical Devices (adopted 2000, last amended August 2020), which applies in Liechtenstein, the Swiss Agency for Therapeutic Products (Swissmedic) is responsible for determining which pharmaceuticals require prescriptions. [1, 2] According to Swissmedic's current list of pharmaceuticals authorized for human use in Switzerland, all of the most common antibiotics (e.g. augmentin, flagyl, ciprofloxacin and bactrim) require prescriptions. [3] There is no evidence of gaps in enforcement in Liechtenstein, including on the websites of the government and the State Administration, and in domestic and international media. [4, 5] One December 2019 news article about antibiotic resistance and antibiotic use in Liechtenstein notes a lack of data on antibiotic use in the country, but does not mention use of antibiotics without prescription. [6]

[1] Federal Assembly of the Swiss Confederation. 15 December 2000. "Federal Law on Drugs and Medical Devices." ("Bundesgesetz über Arzneimittel und Medizinprodukte.") [<https://www.admin.ch/opc/de/classified-compilation/20002716/index.html>]. Accessed 19 November 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 19 November 2020.

[3] Swiss Agency for Therapeutic Products. 9 November 2020. "Lists and directories." ("Listen und Verzeichnisse.") [https://www.swissmedic.ch/swissmedic/de/home/services/listen_neu.html]. Accessed 19 November 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 19 November 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 19 November 2020.

[6] Liechtensteiner Vaterland. 14 December 2019. "Are antibiotics 'irrationally' prescribed in this country?" ("Wird Antibiotika hierzulande «irrationally» verschrieben?") [<https://www.vaterland.li/liechtenstein/gesellschaft/vermisches/wird-antibiotika-hierzulande-irrational-verschrieben;art171,407184>]. Accessed 19 November 2020.

1.1.2b

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

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

Current Year Score: 2

There is legislation in place requiring prescriptions for animal antibiotic use in Liechtenstein, and there is no evidence of gaps in enforcement. According to article 23a of Switzerland's Federal Law on Pharmaceuticals and Medical Devices (adopted 2000, last amended August 2020), which applies in Liechtenstein and covers pharmaceuticals for animals as well as humans, the Swiss Agency for Therapeutic Products (Swissmedic) is responsible for determining which pharmaceuticals require prescriptions. [1, 2] According to Swissmedic's current list of pharmaceuticals authorized for animal use in Switzerland, all of the most common antibiotics for animals (e.g. penicillin, betamox, pharasin) require prescriptions. [3] There is no evidence of gaps in enforcement in Liechtenstein, including on the websites of the government and the State Administration, and in domestic and international media. [4, 5]

[1] Federal Assembly of the Swiss Confederation. 15 December 2000. "Federal Law on Drugs and Medical Devices." ("Bundesgesetz über Arzneimittel und Medizinprodukte.") [<https://www.admin.ch/opc/de/classified-compilation/20002716/index.html>]. Accessed 19 November 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 19 November 2020.

[3] Swiss Agency for Therapeutic Products. 9 November 2020. "Lists and directories." ("Listen und Verzeichnisse.") [https://www.swissmedic.ch/swissmedic/de/home/services/listen_neu.html]. Accessed 19 November 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 19 November 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 19 November 2020.

1.2 ZOO NOTIC 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

Liechtenstein has in place legislation on zoonotic disease. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and reporting follow the same structures as any canton in Switzerland. [1] Switzerland's Ordinance on Animal Disease (adopted 1995, last amended July 2020), which applies in Liechtenstein, has a chapter on zoonoses, which mandates and regulates surveillance of brucellosis, campylobacteriosis, echinococcosis, listeriosis, salmonella, trichinellosis,

E. coli and tuberculosis caused by *Mycobacterium bovis*, as well of antimicrobial resistance among zoonoses. [2, 3]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 27 June 1995. "Ordinance on Animal Disease." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 19 November 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

1.2.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has documents that include measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. Switzerland's Ordinance on Animal Disease (adopted 1995, last amended July 2020), which applies in Liechtenstein, established "One Health", the permanent executive organ designed to support cantonal and federal authorities in the detection, monitoring, prevention and control of zoonoses and vectors, as well as in the processing and coordination of other cross-divisional issues. [1, 2, 3] In October 2018, One Health published a strategy infographic in coordination with the European Commission and the World Organisation for Animal Health (OIE), outlining the measures taken to ensure food safety and prevent zoonotic spillovers on humans. [4] The document highlights the human consumption of animal products as the main risk for zoonotic transfer from animals to humans, and outlines the role of veterinarians in monitoring and ensuring safety at all stages of the food supply chain. [4] The document further highlights dog bites as a possible risk, describing them as the cause of 95% of human rabies infections worldwide, and outlines vaccination and surveillance as preventive measures. [4] There is no further evidence in the plans that would include measures for risk identification and reduction for zoonotic disease spillover events from animals to humans.

[1] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 27 October 2020

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[3] Federal Food Safety and Veterinary Office of the Swiss Confederation. 29 December 2017. "Sub-organ One Health." ("Unterorgan One Health.") [<https://www.blv.admin.ch/blv/de/home/das-blv/organisation/kommissionen/unterorgan-one-health.html>] Accessed 27 October 2020

[4] Federal Food Safety and Veterinary Office of the Swiss Confederation. 18 October 2018. "One Health – One Health for Everyone." ("One Health – eine Gesundheit für alle.") [https://www.blv.admin.ch/dam/blv/de/dokumente/das-blv/auftrag/infografik-oie-one-health.pdf.download.pdf/Infografik%20OIE_One%20Health_DE.pdf] Accessed 27 October 2020

1.2.1c

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

Yes = 1, No = 0

Current Year Score: 1

There is evidence that Liechtenstein has laws in place that account for the surveillance and control of multiple zoonotic pathogens of public health concern. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and reporting follow the same structures as any canton in Switzerland. [1] The Swiss Ordinance on Epizootic Diseases (adopted 1995 and last updated July 2020), which applies in Liechtenstein, stipulates control measures against diseases, and has a specific chapter on zoonotic diseases. [2, 3] The chapter on zoonotic diseases regulates both the surveillance and the control of zoonotic diseases (risk assessment, surveillance, antibiotic resistance, and reporting). [2] Control measures upon an outbreak of a zoonotic disease include, among others, the creation of protection and surveillance zones, quarantines, the launch of vaccination programmes, and the killing of infected animals. [2] The legislation requires the continuous monitoring of 8 zoonotic diseases: brucellosis, campylobacteriosis, echinococcosis, listeriosis, salmonellosis, trichinellosis, tuberculosis caused by mycobacterium bovis, and E. coli. [2] The law also lists anthrax, rabies and brucellosis among the 20 zoonotic diseases that should be eradicated. [2]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 27 June 1995. "Ordinance on Epizootic Diseases." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 17 October 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

1.2.1d

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a department, agency or similar unit dedicated to zoonotic disease that functions across ministries. There is no evidence of such a body on the websites of Liechtenstein's government or state administration. [1, 2] In particular, no such body is listed as being under the Ministry of Social Affairs, the Office of Public Health or the Food and Veterinary Office. [3, 4, 5] The Food and Veterinary Office is responsible for animal health and food safety, but there is no evidence that it has any particular duties specifically regarding zoonoses, nor that it functions across ministries. [6] As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and reporting follow the same structures as any canton in Switzerland. [7] Switzerland has a Federal Food Safety and Veterinary Office (FSVO), which is responsible for zoonotic diseases, but it is also responsible for a range of other issues, such as food safety, nutrition, species conservation, consumer protection and animal testing. [8] The FSVO and the University of Bern jointly run the Center for Zoonoses, Animal Bacterial Diseases and Antimicrobial Resistance, which serves as Switzerland's national

reference laboratory for many zoonoses, but it is also responsible for non-zoonotic animal bacterial diseases, as well as for antimicrobial resistance. [9] There is no evidence of any further Swiss state bodies dedicated to zoonotic disease on the websites of the FSVO, Switzerland's Federal Office of Public Health or Switzerland's Federal Office for Agriculture. [10, 11, 12]

- [1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.
- [2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.
- [3] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Assigned Offices." ("Ministerium für Gesellschaft. Zugeordnete Amtsstellen.") [<https://www.regierung.li>]. Accessed 2 December 2020.
- [4] State Administration of the Principality of Liechtenstein. "Office of Public Health." ("Amt für Gesundheit.") [<https://www.llv.li/files/organigramme/organigramm-20.pdf>]. Accessed 2 December 2020.
- [5] State Administration of the Principality of Liechtenstein. "Food and Veterinary Office." ("Amt für Lebensmittelkontrolle und Veterinärwesen.") [<https://www.llv.li/files/organigramme/organigramm-19.pdf>]. Accessed 2 December 2020.
- [6] State Administration of the Principality of Liechtenstein. "Food and Veterinary Office." ("Amt für Lebensmittelkontrolle und Veterinärwesen.") [<https://www.llv.li/inhalt/11017/amtsstellen/amt-fur-lebensmittelkontrolle-und-veterinarwesen>]. Accessed 2 December 2020.
- [7] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [8] Federal Food Safety and Veterinary Office of the Swiss Confederation. 13 August 2020. "Monitoring of zoonoses." ("Überwachung von Zoonosen.") [<https://www.blv.admin.ch/blv/de/home/tiere/tiergesundheit/ueberwachung/ueberwachung-von-zoonosen.html>]. Accessed 2 December 2020.
- [9] Center for Zoonoses, Animal Bacterial Diseases and Antimicrobial Resistance. [www.zoba.unibe.ch/]. Accessed 17 October 2020.
- [10] Federal Food Safety and Veterinary Office of the Swiss Confederation. [www.blv.admin.ch/blv/en/home.html]. Accessed 17 October 2020.
- [11] Federal Office of Public Health of the Swiss Confederation. [<https://www.bag.admin.ch/bag/en/home.html>]. Accessed 17 October 2020.
- [12] Federal Office for Agriculture of the Swiss Confederation. [<https://www.blw.admin.ch/blw/en/home.html>]. Accessed 17 October 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein has a mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. As described in the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and reporting follow the same structures as any canton in Switzerland. [1] The JEE reports that the countries have comprehensive surveillance of zoonoses and control systems in humans, animals and food, noting that "the system aims to collect accurate information on the occurrence of zoonotic agents at all stages of the food production chain". [1] Articles 61 and 62 of Switzerland's Epizootic Diseases Ordinance (adopted 1995, last updated July 2020), which applies in Liechtenstein, stipulate

that anyone who cares for or treats animals is required to report disease outbreaks and any potential signs of infectious disease to a veterinarian, who in turn must notify the relevant cantonal veterinary office. [2, 3] Articles 63 and 64 stipulate that the cantonal authorities must notify the Swiss Federal Food Safety and Veterinarian Office. [2]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 27 June 1995. "Ordinance on Epizootic Diseases." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

1.2.2b

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein has laws that safeguard the confidentiality of information generated through surveillance activities for animals for owners. Switzerland's Regulation 916.408 on the Information Systems for the Public Veterinary Service (adopted 2014, last amended July 2020), which applies in Liechtenstein, controls which government entities are authorized to process data collected through the veterinary information systems. [1, 2] The regulation notes that authorized third parties must receive only data without sensitive or personal information. [1] It also states that data protections and data security are required, and that people whose information is contained in the databases have the right to "information, rectification and destruction" as governed by the Swiss Data Protection Act (adopted 1992, last amended 2019), which also applies in Liechtenstein, and which incorporates elements of the European Union's General Data Protection Regulation. [1, 2, 3] In addition, article 301a of Switzerland's Epizootic Diseases Ordinance (adopted 1995, last updated July 2020), which applies in Liechtenstein, stipulates that except for particularly sensitive data, information regarding disease outbreaks can be shared with livestock owners potentially affected by the outbreak, cantonal veterinarian and public authorities active in fighting the outbreak. [4]

[1] Swiss Federal Council. 6 July 2014. "Regulation 916.408 on the information systems for the public veterinary service." ("Verordnung 916.408 über die Informationssysteme für den Öffentlichen Veterinärdienst.") [<https://www.admin.ch/opc/de/classified-compilation/20140128/index.html>]. Accessed 2 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 2 December 2020.

[3] Swiss Federal Council. 19 June 1992. "Federal Law on Data Protection." ("Bundesgesetz über den Datenschutz.") [<https://www.admin.ch/opc/de/classified-compilation/19920153/index.html>]. Accessed 2 December 2020.

[4] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemieverordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 6 November 2020.

[5] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan."

("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.

1.2.2c

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

Yes = 1 , No = 0

Current Year Score: 1

Liechtenstein has surveillance of zoonotic diseases in wildlife. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and reporting follow the same structures as any canton in Switzerland. [1] The Swiss Ordinance on Epizootic Diseases (adopted 1995 and last updated July 2020), which applies in Liechtenstein, mandates monitoring and surveillance of zoonotic diseases, including brucellosis, campylobacteriosis, echinococcosis, listeriosis, salmonellosis, trichinellosis, tuberculosis caused by mycobacterium bovis, and E. coli. [2, 3] Switzerland's Center for Fish and Wildlife Health (FIWI) is responsible for the surveillance and monitoring of zoonotic diseases in fish and wild animals, including the diagnosis of diseases (FIWI acts as a reference laboratory for infectious diseases in fish and wild animals), research of infectious diseases and education activities. [4] Furthermore, Switzerland's Federal Food Safety and Veterinary Office regularly publishes data on zoonoses in wildlife such as avian influenza in wild birds, and tuberculosis in wild mammals. [5, 6] The ongoing monitoring of tuberculosis is being conducted in Liechtenstein, and covers red deer, roe deer, chamois, ibex, wild boar and badgers. [6, 7]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 27 June 1995. "Ordinance on Epizootic Diseases." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Federal Food Safety and Veterinary Office of the Swiss Confederation and Federal Office for Agriculture of the Swiss Confederation. 2018. "Swiss Veterinary Service. Based on the OIE Tool for Evaluating the Performance of Veterinary Services." [https://www.blv.admin.ch/dam/blv/de/dokumente/das-blv/organisation/blk/nkp/nkp-anhang-c.pdf.download.pdf/NKP_2017_2019_Anhang_C_Swiss_Veterinary_System.pdf]. Accessed 2 December 2020.

[5] Federal Food Safety and Veterinary Office of the Swiss Confederation. 24 January 2020. "Monitoring wild birds for avian influenza." ("Überwachung Wildvögel auf Aviäre Influenza.") [<https://www.blv.admin.ch/blv/de/home/tiere/tierseuchen/uebersicht-seuchen/alle-tierseuchen/ai/ai-aktuell.html>]. Accessed 2 December 2020.

[6] Federal Food Safety and Veterinary Office of the Swiss Confederation. 10 March 2020. "Wildlife health monitoring." ("Gesundheitsmonitoring Wild.") [<https://www.blv.admin.ch/blv/de/home/tiere/tiergesundheit/frueherkennung/gm-wild.html>]. Accessed 2 December 2020.

[7] Federal Food Safety and Veterinary Office of the Swiss Confederation and Federal Office for Public Health of the Swiss Confederation. July 2020. "Report on monitoring of zoonoses and food-borne disease outbreaks. Data 2019." ("Bericht zur Überwachung von Zoonosen und lebensmittelbedingten Krankheitsausbrüchen. Daten 2019.") [<https://www.blv.admin.ch/dam/blv/de/dokumente/tiere/publikationen-und-forschung/statistik-und-berichte/bericht->

ueberwachung-zoonose-2019.pdf.download.pdf/Zoonosenbericht%202019%20DE.pdf]. Accessed 2 December 2020.

1.2.3 International reporting of animal disease outbreaks

1.2.3a

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

Yes = 1 , No = 0

Current Year Score: 0

2019

OIE WAHIS database

1.2.4 Animal health workforce

1.2.4a

Number of veterinarians per 100,000 people

Input number

Current Year Score: 47.34

2019

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

Liechtenstein has a plan on zoonotic disease that includes mechanisms for cooperating with the private sector in controlling or responding to zoonoses. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, Liechtenstein's response to zoonoses, its veterinary structure and

reporting follow the same structures as any canton in Switzerland. [1] Switzerland's Law on Epizootic Diseases (adopted 1966, last amended April 2020), which applies in Switzerland, lists the duties and responsibilities for all actors, including those in the private sector, during zoonotic outbreaks. [3, 4] These responsibilities include private actors taking precautions to prevent the spread of infectious disease, animal keepers immediately notifying butchers, veterinary doctors and authorities about imminent zoonotic outbreaks, and agreeing to have affected populations confiscated and destroyed by the authorities. [3] Furthermore, the Swiss Federal Food Safety and Veterinary Office's Report on Monitoring and Early Warning of Animal Epidemics for 2019 (published July 2020) attests that Switzerland's sentinel system for the surveillance of zoonotic and other animal diseases involves private farms, including in Liechtenstein. [4]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Federal Council. 27 June 1995. "Ordinance on Epizootic Diseases." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Federal Food Safety and Veterinary Office of the Swiss Confederation. July 2020. "Report on Monitoring and Early Warning of Animal Epidemics. Data 2019." ("Bericht zur Überwachung von Tierseuchen. Daten 2019.") [<https://www.blv.admin.ch/blv/de/home/tiere/tiergesundheit/ueberwachung/nationales-ueberwachungsprogramm.html>]. Accessed 2 December 2020.

1.3 BIOSECURITY

1.3.1 Whole-of- government biosecurity systems

1.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has a record of facilities that store or process especially dangerous pathogens and toxins, including details on inventories and inventory management systems of those facilities. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high-consequence pathogens are stored or handled in Liechtenstein. [1] Article 9 of Liechtenstein's Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) requires any facility handling pathogenic organisms to notify the Environmental Office the first time it conducts low-risk activities, and each time it conducts medium- or high-risk activities, but the ordinance does not mention a central record of facilities. [2] Liechtenstein's Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020) also regulates work with dangerous pathogens, but it does not mention a central record of facilities. [3] Articles 14 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, and contain some rules for facilities that store or process especially dangerous pathogens and toxins, but they do not mention a record of such facilities.

[4, 5] There is no evidence of a relevant record of facilities on the websites of Liechtenstein's government or state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020.

[4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

[9] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

Liechtenstein only has limited biosecurity regulations that 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. Article 4 of Liechtenstein's Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) requires anyone handling pathogenic organisms in a closed system to "take every possible care so that the organisms, their metabolic products and their waste do not endanger people or the environment". [1] Article 5 requires all handling of pathogenic organisms to take place in closed systems, unless otherwise stated in the Ordinance on Handling Pathogenic or Alien Organisms in the Environment (adopted 2011, last amended 2013). [1] In accordance with article 10, appendix 3 lists in detail mandatory safety and security measures for work with different levels of risk. [1] This includes the following biosecurity measures related to physical containment: restricted access to working areas (for work

with low, medium or high risk), locked doors to working areas (for work with medium or high risk), a window through which the working area can be viewed from outside (for work with medium or high risk), and employment of at least one suitably qualified person responsible for overseeing biosafety and biosecurity compliance (regardless of risk level). [1] The ordinance does not mention failure reporting systems or cyber-security, and only mentions operation practices in relation to biosafety. [1] No biosecurity measures are contained in the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020). [2] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [3] The World Health Organization's 2018 Joint External Evaluation (JEE) for Liechtenstein and Switzerland does not state whether Liechtenstein has biosecurity regulations, on the grounds that no highly dangerous pathogens are in practice stored or handled in the country. [4] The JEE does, however, recommend that Liechtenstein be incorporated into Switzerland's "biosecurity measures" through bilateral agreements. [4] There is no further relevant evidence on the websites of Liechtenstein's government or state administration. [5, 6]

[1] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.")

[https://www.gesetze.li/konso/2011091000]. Accessed 2 December 2020.

[2] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.")

[https://www.gesetze.li/konso/2011004000]. Accessed 2 December 2020.

[3] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [https://bwc-ecbm.unog.ch/state/liechtenstein]. Accessed 2 December 2020.

[4] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.

[5] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 2 December 2020.

[6] State Administration of the Principality of Liechtenstein. [https://www.llv.li/]. Accessed 2 December 2020.

1.3.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has an established agency responsible for the enforcement of biosecurity regulations. Liechtenstein's biosecurity regulations are contained in the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013). [1] Article 19 of this ordinance states that the Environmental Office is responsible for monitoring facilities' compliance with biosecurity requirements. [1] The ordinance also makes the Environmental Office responsible for approving and authorizing facilities' work with pathogenic organisms, and for monitoring facilities' compliance with various other regulations. [1] However, the ordinance does not specifically mention the Environmental Office having any role in enforcement. [1] The World Health Organization's 2018 Joint External Evaluation (JEE) for Liechtenstein and Switzerland does not address Liechtenstein's biosecurity mechanisms, on the grounds that no highly dangerous pathogens are in practice stored or handled in the country. [2] The JEE does, however, recommend that Liechtenstein be incorporated into Switzerland's "biosecurity measures" through bilateral agreements. [2] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [3] There is no further relevant evidence on the websites of Liechtenstein's government or state administration. [4, 5]

- [1] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.
- [2] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [3] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

1.3.1d

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. As described in the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high-consequence pathogens are stored or handled in Liechtenstein. [1] There is no mention of consolidating inventories in Liechtenstein's Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) or its Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020). [2, 3] Articles 14 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not mention consolidating inventories either. [4, 5] There is no evidence of efforts to do so on the website of Liechtenstein's government or its state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

- [1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.
- [3] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020.
- [4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.
- [5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.
- [6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

[9] Verification Research, Training and Information Center. "BWC Legislation Database. L."

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.3.1e

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein has the capacity to conduct polymerase chain reaction (PCR) diagnostic testing for anthrax or ebola, which would preclude culturing a live pathogen. According to the Joint External Evaluation (JEE) of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, Liechtenstein has access to Switzerland's laboratory systems. [1] In Switzerland, the Spiez Laboratory, under the Federal Office for Civil Protection, has the capacity to conduct PCR testing for both anthrax and ebola. [2, 3] However, there is no evidence of capacity for PCR tests for anthrax or ebola in Liechtenstein itself, including on the websites of the government and the state administration. [4, 5]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Spiez Laboratory. November 2017. "Bacteriological services offered." ("Leistungsangebot Bakteriologie.") [https://www.labor-spiez.ch/pdf/de/die/bio/Leistungsangebot_Bakteriologie_klinische_Proben_ohne_Preise.pdf]. 2 December 2020.

[3] Spiez Laboratory. November 2015. "Virological services offered." ("Leistungsangebot Virologie.") [https://www.labor-spiez.ch/pdf/de/die/bio/Leistungsangebot_Virologie_ohne_Preise.pdf]. 2 December 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li/>]. Accessed 2 December 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

1.3.2 Biosecurity training and practices

1.3.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein requires biosecurity training, using a standardized, required approach, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high consequence pathogens are stored or handled in Liechtenstein. [1] Liechtenstein's biosecurity and other

requirements for facilities that house or work with pathogens are mainly contained in the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013). [2] Obligatory biosecurity and biosafety measures are detailed in appendix 3, which mandates the employment of "staff who are sufficiently trained on security/safety issues" as well as at least one person responsible for overseeing biosafety and biosecurity, "who must have sufficient knowledge of safety/security issues to carry out this function." [2] The regulation does not elaborate on these requirements, or make any other mention of training. [2] There is no mention of training requirements in the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020). [3] Articles 14 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not mention training either. [4, 5] There is no further relevant evidence on the websites of Liechtenstein's government or its state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

- [1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020. 2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020. [3] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020. [4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020. [5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020. [6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020. [7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020. [8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020. [9] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.3.3 Personnel vetting: regulating access to sensitive locations

1.3.3a

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

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

Current Year Score: 0

There is no evidence that Liechtenstein requires security or other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential to be subject to any checks. According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high consequence pathogens are stored or handled in Liechtenstein. [1] Liechtenstein's biosecurity and other requirements for facilities that house or work with pathogens are mainly contained in the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013), but this does not mention any requirements that staff must fulfil or checks that they must undergo. [2] Similarly, no such requirements are contained in the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020). [3] Articles 4 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not contain any relevant provisions either. [4, 5] There is no further relevant evidence on the websites of Liechtenstein's government or its state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020.

[4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

[9] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.3.4 Transportation security

1.3.4a

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

Yes = 1 , No = 0

Current Year Score: 1

Liechtenstein has publicly available information on national regulations on the safe and secure transport of infectious substances that mention categories A and B. The legal basis for the transport of dangerous goods and infectious substances in Liechtenstein is the European Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), which covers infectious substances and is binding for all commercial transporters through Liechtenstein's Ordinance on the Transport of Dangerous Goods by Road (adopted 1998, last amended 2019). [1, 2] The ordinance specifically states that annexes A and B of ADR apply in the country, and these are the annexes that contain classification and transportation guidelines. [1, 2] Although ADR itself mentions categories A and B, Liechtenstein's Ordinance on the Transport of Dangerous Goods by Road does not, instead referring to categories I, II and III. [1, 2] The ordinance does, however, refer to specific category A and category B goods, such as explosives, toxic gas and water-endangering liquids. [2] There is no further publicly available information about national regulations on transport of infectious substances on the websites of Liechtenstein's government or its state administration. [3, 4] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [5]

[1] United Nations. 1 January 2019. "European Agreement Concerning the International Carriage of Dangerous Goods by Road." [http://www.unece.org/fileadmin/DAM/trans/publications/ADR_2019_vol1_1818953_E.pdf]. Accessed 2 December 2020.

[2] Princely Government of Liechtenstein. 3 March 1998. "Ordinance on the Transport of Dangerous Goods by Road." ("Verordnung über den Transport gefährlicher Güter auf der Strasse.") [<https://www.gesetze.li/konso/1998.57>]. Accessed 2 December 2020.

[3] Government of the Principality of Liechtenstein. [<https://www.regierung.li/>]. Accessed 2 December 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[5] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

1.3.5 Cross-border transfer and end-user screening

1.3.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein has legislation or regulations in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins, and pathogens with pandemic potential. Article 8 of the Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods (adopted 2008, last amended 2018) states that, in order to implement international agreements, the government can introduce licensing requirements, reporting requirements and monitoring measures for the sale of dual-use goods from Liechtenstein to countries outside of

the Swiss-Liechtenstein customs union. [1] Article 10 states that authorization for the export of dual-use goods will not be granted if the proposed export contravenes international treaties or international control measures, or if there is reason to believe that the proposed export would support terrorist groups or organized crime. [1] Article 12 states that, in order to implement international agreements, the government can ban exports to individual countries, or relax oversight on export to individual countries. [1] However, the law does not explicitly require end-user screening. [1] Moreover, the law defines "dual-use goods" as "goods that can be used for civilian or military purposes", and "goods" as "products, technology and software"; it does not mention pathogens or toxins. [1] No relevant provisions are contained in the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020) or the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013). [2, 3] Articles 14 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not contain any relevant provisions either. [4, 5] There is no further relevant evidence on the websites of Liechtenstein's government or its state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

[1] Princely Government of Liechtenstein. 10 December 2008. "Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods." ("Gesetz über die Vermittlung von und den Handel mit nuklearen Gütern, radioaktiven Abfällen, doppelt verwendbaren Gütern und besonderen militärischen Gütern.")

[<https://www.gesetze.li/konso/2009040000>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.")

[<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020.

[3] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.")

[<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.

[4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

[9] Verification Research, Training and Information Center. "BWC Legislation Database. L."

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.4 BIOSAFETY

1.4.1 Whole-of-government biosafety systems

1.4.1a

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein has biosafety regulations in place. Article 4 of Liechtenstein's Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) requires anyone handling pathogenic organisms in a closed system to "take every possible care so that the organisms, their metabolic products and their waste do not endanger people or the environment". [1] Article 5 requires all handling of pathogenic organisms to take place in closed systems, unless otherwise stated in the Ordinance on Handling Pathogenic or Alien Organisms in the Environment (adopted 2011, last amended 2013). [1] In accordance with article 10, appendix 3 lists in detail mandatory safety and security measures for work with different levels of risk. [1] This includes requirements to: separate the working area from other areas; wear appropriate personal protective equipment; label biohazards; provide and use appropriate hygiene facilities; take measures against aerosol formation; have surfaces resistant to acids, alkalis, solvents and disinfectants; safely dispose of contaminated items; have ventilation systems; and employ at least one suitably qualified person responsible for overseeing biosafety and biosecurity compliance. [1] In addition, general requirements for facilities working with dangerous pathogens to prevent harm are contained in articles 27â€“28 of Liechtenstein's Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020) and articles 25â€“26 of Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020, fully applicable in Liechtenstein). [2, 3, 4] Articles 1â€“4 and 15 of Switzerland's Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not include any biosafety regulations. [4, 5] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [6]

[1] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 3 December 2020.

[3] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 3 December 2020.

[4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.

[6] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc->

ecbm.unog.ch/state/liechtenstein]. Accessed 2 December 2020.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has an established agency responsible for the enforcement of biosafety regulations. Liechtenstein's biosafety regulations are contained in the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013). [1] Article 19 of this ordinance states that the Environmental Office is responsible for monitoring facilities' compliance with biosafety requirements. [1] The ordinance also makes the Environmental Office responsible for approving and authorizing facilities' work with pathogenic organisms, and for monitoring facilities' compliance with various other regulations. [1] However, the ordinance does not specifically mention the Environmental Office having any role in enforcement. [1] The World Health Organization's 2018 Joint External Evaluation (JEE) for Liechtenstein and Switzerland does not address Liechtenstein's biosafety mechanisms, on the grounds that no highly dangerous pathogens are in practice stored or handled in the country. [2] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [3] There is no further relevant evidence on the websites of Liechtenstein's government or state administration. [4, 5]

[1] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.

1.4.2 Biosafety training and practices

1.4.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein requires biosafety training, using a standardized, required approach, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high consequence pathogens are stored or handled in Liechtenstein. [1] Liechtenstein's biosafety and other requirements for facilities that house or work with pathogens are mainly contained in the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013). [2] Obligatory biosecurity and biosafety measures are detailed in appendix 3, which mandates the employment of "staff who are sufficiently trained on security/safety issues" as well as at least one person responsible for overseeing biosafety and biosecurity, "who must have sufficient knowledge of safety/security issues to carry out this function." [2] The regulation does not elaborate on these requirements, or make any other mention of training. [2] There is no mention of training requirements in the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020). [3] Articles 14 and 15 of Switzerland's

Ordinance on Handling Organisms in Contained Systems (adopted 2012, last amended 2019) also apply in Liechtenstein, but they do not mention training either. [4, 5] There is no further relevant evidence on the websites of Liechtenstein's government or its state administration. [6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] There is no further relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [9]

- [1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.
- [3] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 2 December 2020.
- [4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.
- [5] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in Contained Systems." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 10 November 2020.
- [6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.
- [7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.
- [8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.
- [9] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

1.5 DUAL-USE RESEARCH AND CULTURE OF RESPONSIBLE SCIENCE

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

1.5.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential, or other dual-use research. According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high

consequence pathogens are stored or handled in Liechtenstein. [1] On the websites of Liechtenstein's government and state administration, there is no evidence that Liechtenstein has conducted an assessment of ongoing research with dangerous pathogens. [2, 3] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [4] There is no relevant information in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [5] However, article 8 of Liechtenstein's Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods (adopted 2008, last amended 2018) states that, in order to implement international agreements, the government can introduce licensing requirements, reporting requirements and monitoring measures with regard to research, development, storage, transfer and use of dual-use goods. [6]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.

[4] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

[5] Verification Research, Training and Information Center. "BWC Legislation Database. L."

[<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.

[6] Princely Government of Liechtenstein. 10 December 2008. "Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods." ("Gesetz über die Vermittlung von und den Handel mit nuklearen Gütern, radioaktiven Abfällen, doppelt verwendbaren Gütern und besonderen militärischen Gütern.") [<https://www.gesetze.li/konso/2009040000>]. Accessed 3 December 2020.

1.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has legislation or regulations requiring oversight of research with especially dangerous pathogens, toxins, pathogens with pandemic potential and/or other dual-use research. Article 8 of the Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods (adopted 2008, last amended 2018) states that, in order to implement international agreements, the government can introduce licensing requirements, reporting requirements and monitoring measures with regard to research, development, storage, transfer and use of dual-use goods. However, there is no evidence that monitoring and evaluation is a standard requirement and not just introduced in case of suspicious activity. [1] Moreover, the law defines "dual-use goods" as "goods that can be used for civilian or military purposes", and "goods" as "products, technology and software"; it does not mention pathogens or toxins. [1] Article 19 of the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) states that the Environmental Office oversees safety and security at facilities that handle pathogenic organisms in closed systems, and carries out spot checks to ensure that records are kept properly, and that organisms and activities correspond to those for which authorization was granted. [2] However, this ordinance does not refer to oversight of dual-use research. [2] There is no further relevant evidence on the websites of Liechtenstein's government or state administration, or in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [3, 4, 5] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism

set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [6] According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high consequence pathogens are stored or handled in Liechtenstein. [7]

[1] Princely Government of Liechtenstein. 10 December 2008. "Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods." ("Gesetz über die Vermittlung von und den Handel mit nuklearen Gütern, radioaktiven Abfällen, doppelt verwendbaren Gütern und besonderen militärischen Gütern.") [https://www.gesetze.li/konso/2009040000]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [https://www.gesetze.li/konso/2011091000]. Accessed 2 December 2020.

[3] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 2 December 2020.

[4] State Administration of the Principality of Liechtenstein. [https://www.llv.li/]. Accessed 2 December 2020.

[5] Verification Research, Training and Information Center. "BWC Legislation Database. L." [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/]. Accessed 2 December 2020.

[6] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [https://bwc-ecbm.unog.ch/state/liechtenstein]. Accessed 2 December 2020.

[7] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.

1.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, or other dual-use research. Article 19 of the Ordinance on Handling Pathogenic Organisms in Closed Systems (adopted 2011, last amended 2013) makes the Environmental Office responsible for oversight of safety and security at facilities that handle pathogenic organisms in closed systems, but the ordinance does not specifically mention dual-use research. [1] The website of Liechtenstein's state administration lists the Environmental Office's areas of responsibility as including biosafety and biosecurity, but does not mention dual-use research. [2, 3] Article 13 of the Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods (adopted 2008, last amended 2018) makes the government responsible for overseeing trade in dual-use goods, and simply states that this duty can be delegated to a state body. [4] There is no further relevant evidence on the websites of Liechtenstein's government or state administration, or in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [5, 6, 7] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [8] According to the Joint External Evaluation of International Health Regulations capacities of Switzerland and Liechtenstein conducted in 2017, in the areas of biosafety and biosecurity, Liechtenstein has no facilities or activities, as no high consequence pathogens are stored or handled in Liechtenstein. [9]

- [1] Princely Government of Liechtenstein. 10 March 2011. "Ordinance on Handling Pathogenic Organisms in Closed Systems." ("Verordnung über den Umgang mit pathogenen Organismen in geschlossenen Systemen.") [<https://www.gesetze.li/konso/2011091000>]. Accessed 2 December 2020.
- [2] State Administration of the Principality of Liechtenstein. "Environmental Office." ("Amt für Umwelt.") [<https://www.llv.li/inhalt/12298/amtstellen/amt-fur-umwelt>]. Accessed 3 December 2020.
- [3] State Administration of the Principality of Liechtenstein. "Biological Safety." ("Biologische Sicherheit.") [<https://www.llv.li/inhalt/12391/amtstellen/biologische-sicherheit>]. Accessed 3 December 2020.
- [4] Princely Government of Liechtenstein. 10 December 2008. "Law on Trade in Nuclear Goods, Radioactive Waste, Dual-Use Goods and Special Military Goods." ("Gesetz über die Vermittlung von und den Handel mit nuklearen Gütern, radioaktiven Abfällen, doppelt verwendbaren Gütern und besonderen militärischen Gütern.") [<https://www.gesetze.li/konso/2009040000>]. Accessed 3 December 2020.
- [5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.
- [6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.
- [7] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.
- [8] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.
- [9] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

1.5.2 Screening guidance for providers of genetic material

1.5.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein requires the screening of synthesized DNA (deoxyribonucleic acid) against lists of known pathogens and toxins before it is sold. Liechtenstein's rules and conditions for sale of genetically modified organisms are outlined in articles 20â€“25 of the Law on Handling Genetically Modified, Pathogenic or Alien Organisms (adopted 2010, last amended August 2020) and articles 25â€“31 of Switzerland's Ordinance on Handling Organisms in the Environment (adopted 2008, last amended 2019), but neither of these laws mention DNA screening. [1, 2, 3] There are no relevant provisions in Liechtenstein's Ordinance on Handling Genetically Modified Organisms (adopted 2011, last amended 2013) or in the parts of Switzerland's Federal Law on Non-Human Genetic Technology (adopted 2003, last amended 2017) that apply in Liechtenstein. [3, 4, 5] There is no further relevant evidence on the websites of Liechtenstein's government or state administration, or in the Verification Research, Training and Information Center's database of legislation related to biological weapons and materials. [6, 7, 8] Liechtenstein reports to the United Nations every year for the "Confidence Building Measure Return", a reporting mechanism set by the Biological Weapons Convention, but Liechtenstein's reports are not publicly accessible. [9]

- [1] Princely Government of Liechtenstein. 25 November 2010. "Law on Handling Genetically Modified, Pathogenic or Alien Organisms." ("Gesetz über den Umgang mit genetisch veränderten, pathogenen oder gebietsfremden Organismen.") [<https://www.gesetze.li/konso/2011004000>]. Accessed 3 December 2020.

- [2] Swiss Federal Council. 9 May 2012. "Ordinance on Handling Organisms in the Environment." ("Verordnung über den Umgang mit Organismen in geschlossenen Systemen.") [<https://www.admin.ch/opc/de/classified-compilation/20100803/index.html>]. Accessed 3 December 2020.
- [3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.
- [4] Princely Government of Liechtenstein. 11 March 2011. "Ordinance on Handling Genetically Modified Organisms." ("Verordnung über den Umgang mit genetisch veränderten Organismen.") [<https://www.gesetze.li/konso/2011088000>]. Accessed 3 December 2020.
- [5] Federal Assembly of the Swiss Confederation. 21 March 2003. "Federal Law on Non-Human Genetic Technology." ("Bundesgesetz über die Gentechnik im Ausserhumanbereich.") [<https://www.admin.ch/opc/de/classified-compilation/19996136/index.html>]. Accessed 3 December 2020.
- [6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 2 December 2020.
- [7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 2 December 2020.
- [8] Verification Research, Training and Information Center. "BWC Legislation Database. L." [<https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/l/>]. Accessed 2 December 2020.
- [9] United Nations. "Liechtenstein. Available Confidence Building Measures Reports." [<https://bwc-ecbm.unog.ch/state/liechtenstein>]. Accessed 2 December 2020.

1.6 IMMUNIZATION

1.6.1 Vaccination rates

1.6.1a

Immunization rate (measles/MCV2)

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

Current Year Score: 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: 0

There is no evidence that Liechtenstein can conduct 5 of the 10 core tests as there is no evidence that Liechtenstein has a national laboratory system. According to the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, Liechtenstein does not have its own national laboratory system, but has access to Switzerland's laboratory system. [1] The JEE reports that Liechtenstein's access to the Swiss system is merely on an informal basis, without any underlying written agreements. [1] There is no evidence of a domestic national laboratory system, or of a formal agreement concerning access to the Swiss system, on the websites of Liechtenstein's government, state administration or hospital. [2, 3, 4]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

[4] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 4 December 2020.

2.1.1b

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

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

Current Year Score: 0

There is no evidence that Liechtenstein has a national plan, strategy or similar document for conducting testing during a public health emergency. Liechtenstein's main planning documents for public health emergencies are Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020) and Switzerland's Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended November 2020), both of which are fully applicable in Liechtenstein, but neither of them includes a testing strategy. [1, 2, 3] Article 23 of the Ordinance on Combatting Communicable Human Diseases does state that national reference centers may be entrusted with implementing testing plans devised by the federal government, but it does not confirm that such plans actually exist. [2] There is no

evidence of a plan, strategy or other document for conducting testing during a public health emergency on the websites of Liechtenstein's government or state administration. [4, 5]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 November 2020.

[2] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>] Accessed 6 November 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

2.1.2 Laboratory quality systems

2.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has any national reference laboratories. According to the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, Liechtenstein does not have its own national laboratory system, but has access to Switzerland's laboratory system. [1] The JEE reports that Liechtenstein's access to the Swiss system is merely on an informal basis, without any underlying written agreements. [1] There is no evidence of any reference laboratories in Liechtenstein, or of a formal agreement concerning access to Switzerland's reference laboratories, on the websites of Liechtenstein's government, state administration or hospital. [2, 3, 4]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

[4] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 4 December 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has any national reference laboratories. According to the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, Liechtenstein does not have its own national laboratory system, but has access to Switzerland's laboratory system. [1] The JEE reports that Liechtenstein's access to the Swiss system is merely on an informal basis, without any underlying written agreements. [1] There is no evidence of any reference laboratories in Liechtenstein, or of a formal agreement concerning access to Switzerland's reference laboratories, on the websites of Liechtenstein's government, state administration or hospital. [2, 3, 4]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

[4] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 4 December 2020.

2.2 LABORATORY SUPPLY CHAINS

2.2.1 Specimen referral and transport system

2.2.1a

Is there a nationwide specimen transport system?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a nationwide specimen transport system. According to the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, Liechtenstein does not have its own national laboratory system, but has access to Switzerland's laboratory system.

[1] For the indicator "specimen referral and transport system", the JEE rates Liechtenstein as "N/A", while it rates Switzerland as having "sustainable capacity". [1] Labormedizinisches Zentrum Dr Risch ("Dr Risch Medical Laboratory Center"), a private company registered in Liechtenstein that runs a network of 16 laboratories (one of which is in Liechtenstein and the rest of which are in Switzerland), offers a specimen transport service, but there is insufficient evidence that this covers the whole of Liechtenstein. [2, 3, 4, 5, 6] There is no evidence of a nationwide specimen transport system on the websites of Liechtenstein's government or state administration. [7, 8]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 4 December 2020.

[2] Labormedizinisches Zentrum Dr Risch. "About us." ("Äøber uns.") [<https://www.risch.ch/de/ueber-uns>]. Accessed 4 December 2020.

[3] Labormedizinisches Zentrum Dr Risch. "Imprint." ("Impressum.") [<https://www.risch.ch/de/impressum>]. Accessed 4 December 2020.

[4] Labormedizinisches Zentrum Dr Risch. "Laboratories." ("Laboratorien.") [<https://www.risch.ch/de/locations>]. Accessed 4 December 2020.

[5] Labormedizinisches Zentrum Dr Risch. "Courier service." ("Kurierdienst.") [<https://www.risch.ch/de/service/kurierdienst>]. Accessed 4 December 2020.

[6] Labormedizinisches Zentrum Dr Risch. "Specimen logistics." ("Probenlogistik.") [<https://www.risch.ch/de/probenlogistik>].

Accessed 4 December 2020.

[7] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[8] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

2.2.2 Laboratory cooperation and coordination

2.2.2a

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

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

Current Year Score: 0

There is no evidence that Liechtenstein has a plan to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. No such provision is included in Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), or its Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended November 2020), both of which are fully applicable in Liechtenstein. [1, 2, 3] There is no evidence of such a plan on the websites of Liechtenstein's government or its state administration. [4, 5]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 November 2020.

[2] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>] Accessed 6 November 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 4 December 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 4 December 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

Yes, there is evidence of ongoing event-based surveillance and evidence that the data is being analyzed on a daily basis = 2,
Yes, there is evidence of ongoing event-based surveillance, but no evidence that the data are being analyzed on a daily basis = 1, No = 0

Current Year Score: 1

Liechtenstein conducts ongoing event-based surveillance and analysis for infectious disease, but there is no evidence that the data are analyzed on a daily basis. The Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and

the Principality of Liechtenstein conducted in 2017 reports that "as far as real-time surveillance of infectious diseases is concerned, Liechtenstein is a de facto part of the Swiss system, functioning in the same manner as an additional Swiss canton". [1] The JEE gives Switzerland and Liechtenstein a joint rating of 5 out of 5 ("sustainable capacity") for "indicator- and event-based surveillance systems", and notes that the system's legal basis is contained in Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020, also known as the Epidemic Law). [1] In its second article, the Epidemic Law lists surveillance as one of its main goals, and chapter 3 of the law outlines elements of the surveillance system, but the law does not mention daily analysis. [2] Further detail is provided in chapter 2 of Switzerland's Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended November 2020, also known as the Epidemic Ordinance), with articles 10â€"18 in particular addressing processing of the data collected, but there is no explicit mention of daily analysis. [3] Both the Epidemic Law and the Epidemic Ordinance are fully applicable in Liechtenstein. [4] The Swiss Federal Office of Public Health publishes statistics on cases of infectious diseases, including those in Liechtenstein, on a weekly basis. [5] On its website, the Swiss Federal Office of Public Health reports that it has a Department for Communicable Diseases, which is active in monitoring the epidemiological situation in order to identify risks as early as possible, but it does not provide details about the process. [6] There is no evidence of daily analysis on the websites of Liechtenstein's government or state administration, or on the websites of Switzerland's Federal Office of Public Health or Federal Office for Agriculture. [7, 8, 9, 10]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 4 December 2020.

[2] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 5 December 2020.

[3] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 5 December 2020.

[4] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[5] Federal Office of Public Health of the Swiss Confederation. 1 December 2020. "Figures on infectious diseases." ("Zahlen zu Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/zahlen-und-statistiken/zahlen-zu-infektionskrankheiten.html>]. Accessed 5 December 2020.

[6] Federal Office of Public Health of the Swiss Confederation. 11 December 2020. "Department for Communicable Diseases." ("Abteilung Übertragbare Krankheiten.") [<https://www.bag.admin.ch/bag/de/home/das-bag/organisation/direktionsbereiche-abteilungen/direktionsbereich-oeffentliche-gesundheit/abteilung-uebertragbare-krankheiten.html>]. Accessed 7 January 2021.

[7] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 5 December 2020.

[8] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 5 December 2020.

[9] Federal Office of Public Health of the Swiss Confederation. [<https://www.bag.admin.ch/bag/de/home.html>]. Accessed 5 December 2020.

[10] Federal Office for Agriculture of the Swiss Confederation. [<https://www.blw.admin.ch/blw/de/home.html>]. Accessed 5 December 2020.

2.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no public evidence of Liechtenstein having reported a potential public health emergency of international concern (PHEIC) to the World Health Organization (WHO) in the last two years. The World Health Organization's "Disease Outbreak News" webpages do not mention Liechtenstein having reported a PHEIC in 2020, 2019 or 2018. [1, 2, 3] There is no evidence of Liechtenstein having informed the WHO of any PHEICs – including in relation to COVID-19 – on the websites of the WHO, Liechtenstein's government or Liechtenstein's state administration. [4, 5, 6] Liechtenstein reported its first case of COVID-19 on March 3, 2020, after the WHO had already declared it a PHEIC on January 30, 2020. [7, 8]

[1] World Health Organization. "Disease outbreak news. 2020." [<https://www.who.int/csr/don/archive/year/2020/en/>]. Accessed 5 December 2020.

[2] World Health Organization. "Disease outbreak news. 2019." [<https://www.who.int/csr/don/archive/year/2019/en/>]. Accessed 5 December 2020.

[3] World Health Organization. "Disease outbreak news. 2018." [<https://www.who.int/csr/don/archive/year/2018/en/>]. Accessed 5 December 2020.

[4] World Health Organization. [<https://www.who.int/>]. Accessed 5 December 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li/>]. Accessed 5 December 2020.

[6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 5 December 2020.

[7] Garda World. March 5, 2020. "Liechtenstein: Country confirms first COVID-19 case March 3".

[<https://www.garda.com/crisis24/news-alerts/320136/liechtenstein-country-confirms-first-covid-19-case-march-3>] Accessed May 26, 2021.

[8] World Health Organisation (WHO). 27 April 2020. "Archived: WHO Timeline - COVID-19".

[<https://www.who.int/news/item/27-04-2020-who-timeline---covid-19>] Accessed May 26, 2021.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

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

Yes = 1, No = 0

Current Year Score: 0

Liechtenstein has an electronic reporting surveillance system at the national level, but not at the sub-national level. The Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017 reports that "as far as real-time surveillance of infectious diseases is concerned, Liechtenstein is a de facto part of the Swiss system, functioning in the same manner as an additional Swiss canton". [1] The JEE gives Switzerland and Liechtenstein a joint rating of 5 out of 5 ("sustainable capacity") for "indicator- and event-based surveillance systems". [1] Switzerland's Federal Office of Public Health (FOPH) runs the Reporting System for Notifiable Infectious Diseases, which allows all of Switzerland and Liechtenstein's physicians, hospitals, healthcare institutions and laboratories to report cases of notifiable diseases. [2, 3] Physicians, hospitals and healthcare institutions can submit reports by fax, post or telephone. [3] Laboratories can submit reports by these methods, or alternatively they can do so electronically, through a special system designed for this purpose, called "eLM" ("elektronische Labormeldung", German for "electronic laboratory reporting"). [3] For Switzerland all reports must be submitted to the relevant canton-level (sub-national) authorities, while reports from laboratories must

additionally be submitted directly to the FOPH, but there is no indication of sub-national reporting for Liechtenstein (as stated above, the JEE reports that Liechtenstein is treated as if it were a Swiss canton). [1, 3] There is no evidence of an electronic reporting surveillance system at the sub-national level on the websites of Liechtenstein's government or state administration, or on that of Switzerland's Federal Office of Public Health. [4, 5, 6]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 6 December 2020.

[2] Federal Office of Public Health. 28 August 2018. "Reporting systems for infectious diseases." ("Melde-systeme für Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/krankheiten/infektionskrankheiten-bekaempfen/meldesysteme-infektionskrankheiten.html>]. Accessed 6 December 2020.

[3] Federal Office of Public Health. 13 March 2020. "Notifiable infectious diseases." ("Meldepflichtige Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/krankheiten/infektionskrankheiten-bekaempfen/meldesysteme-infektionskrankheiten/meldepflichtige-ik.html>]. Accessed 6 December 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li/>]. Accessed 6 December 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 6 December 2020.

[6] Federal Office of Public Health of the Swiss Confederation. [<https://www.bag.admin.ch/bag/de/home.html>]. Accessed 6 December 2020.

2.3.2b

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein's electronic reporting surveillance system collects ongoing or real-time laboratory data. Laboratories in Liechtenstein can submit reports electronically to Switzerland's Reporting System for Notifiable Infectious Diseases, using a system called "eLM" ("elektronische Labormeldung", German for "electronic laboratory reporting"), but they must do so manually. [1] Depending on the pathogen detected, they are required to submit the report within 2 hours, 24 hours, or 1 week. [1] Nothing on the website of Switzerland's Federal Office of Public Health, which runs the system, indicates that the system collects ongoing or real-time laboratory data. [2] There is no further relevant information on the websites of Liechtenstein's government or state administration. [3, 4]

[1] Federal Office of Public Health. 13 March 2020. "Notifiable infectious diseases." ("Meldepflichtige Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/krankheiten/infektionskrankheiten-bekaempfen/meldesysteme-infektionskrankheiten/meldepflichtige-ik.html>]. Accessed 6 November 2020.

[2] Federal Office of Public Health. [<https://www.bag.admin.ch/>]. Accessed 6 November 2020.

[3] Government of the Principality of Liechtenstein. [<https://www.regierung.li/>]. Accessed 6 December 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 6 December 2020.

2.4 SURVEILLANCE DATA ACCESSIBILITY AND TRANSPARENCY

2.4.1 Coverage and use of electronic health records

2.4.1a

Are electronic health records commonly in use?

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

Current Year Score: 0

Electronic health records are not in use in Liechtenstein. In October 2020 it was reported that the introduction of electronic health records in Liechtenstein was scheduled to begin in 2021. [1, 2] The records will contain data on medication, vaccination history and referrals, as well as genetic data based on laboratory reports. [1, 2] The introduction of electronic health records was first laid out in Liechtenstein's 2012 eHealth Strategy. [1, 2] In 2015 the government established the Verein eHealth Liechtenstein (Liechtenstein eHealth Association), tasked with developing and introducing electronic health records. [3] In 2019 the Ministry of Social Affairs published a consultation report on the subject, outlining examples from neighboring Austria and Switzerland, and discussing financial, legal and technical aspects of implementation in Liechtenstein. [3, 4] There is no further relevant information on the websites of the government, the State Administration, or the National Hospital. [5, 6, 7]

[1] Damian Becker. 9 October 2020. "Electronic health records planned." ("Elektronisches Gesundheitsdossier geplant.") Liechtensteiner Vaterland. [<https://www.vaterland.li/liechtenstein/politik/elektronisches-gesundheitsdossier-geplant;art169,432497>]. Accessed 19 November 2020.

[2] Government of the Principality of Liechtenstein. 6 October 2020. "Electronic health record report and application adopted." ("Bericht und Antrag über das elektronische Gesundheitsdossier verabschiedet.") [<https://www.regierung.li/de/mitteilungen/223819/?typ=news>]. Accessed 19 November 2020.

[3] Government of the Principality of Liechtenstein. 7 May 2019. "Regierung verabschiedet Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über das elektronische Gesundheitsdossier." ("Regierung verabschiedet Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über das elektronische Gesundheitsdossier.") [<https://www.regierung.li/de/mitteilungen/222657>]. Accessed 19 November 2020.

[4] Ministry of Social Affairs of the Principality of Liechtenstein. 2019. "Consultation Report on the Creation of a Law on Electronic Health Records." ("Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über das elektronische Gesundheitsdossier.") [<https://www.llv.li/files/srk/vnb-elektronisches-gesundheitsdossier-egdg.pdf>]. Accessed 19 November 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 19 November 2020.

[6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 19 November 2020.

[7] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 19 November 2020.

2.4.1b

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

Yes = 1, No = 0

Current Year Score: 0

Electronic health records (EHRs) are not in use in Liechtenstein. In October 2020 it was reported that the introduction of electronic health records in Liechtenstein was scheduled to begin in 2021. [1, 2] There is no evidence that they are already in use on the websites of the government, the State Administration, or the National Hospital. [3, 4, 5] However, in 2019 the Ministry of Social Affairs published a consultation report on the subject, which states that public health authorities should have access to electronic health records of individuals. [6] In 2012, Liechtenstein adopted an eHealth Strategy, closely modelled on Switzerland's strategy on the issue, which mentioned the adoption of EHRs, but there is no evidence that the strategy is publicly available. [1, 2] Liechtenstein has universal healthcare coverage with mandatory health insurance, a combination of free market competition (state-authorized private health insurance companies) and state regulation. [7, 8] The system has cost-sharing elements, but most services are covered by the mandatory health insurance. [7, 8] As

Liechtenstein only has one relatively small hospital, for more complicated healthcare services patients are transferred to Austrian and Swiss hospitals with which Liechtenstein has special contracts, under which their services are covered by Liechtenstein's mandatory health insurance. [7, 8]

- [1] Damian Becker. 9 October 2020. "Electronic health records planned." ("Elektronisches Gesundheitsdossier geplant.") Liechtensteiner Vaterland. [<https://www.vaterland.li/liechtenstein/politik/elektronisches-gesundheitsdossier-geplant;art169,432497>]. Accessed 19 November 2020.
- [2] Government of the Principality of Liechtenstein. 6 October 2020. "Electronic health record report and application adopted." ("Bericht und Antrag über das elektronische Gesundheitsdossier verabschiedet.") [<https://www.regierung.li/de/mitteilungen/223819/?typ=news>]. Accessed 19 November 2020.
- [3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 19 November 2020.
- [4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 19 November 2020.
- [5] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 19 November 2020.
- [6] Ministry of Social Affairs of the Principality of Liechtenstein. 2019. "Consultation Report on the Creation of a Law on Electronic Health Records." ("Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über das elektronische Gesundheitsdossier.") [<https://www.llv.li/files/srk/vnb-elektronisches-gesundheitsdossier-egdg.pdf>]. Accessed 19 November 2020.
- [7] Ministry of Social Affairs of the Principality of Liechtenstein. June 2020. "Healthcare in the Principality of Liechtenstein. Current overview, strategic foci and measures." ("Das Gesundheitswesen im Fürstentum Liechtenstein. Aktuelle Übersicht, strategische Schwerpunkte und Massnahmen.") [<https://www.regierung.li/media/attachments/20200217-FL-Gesundheitspolitische-Gesamtplanung-Update.pdf?t=637273142769611572>]. Accessed 9 December 2020.
- [8] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein." [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 6 December 2020.

2.4.1c

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

Yes = 1, No = 0

Current Year Score: 0

Electronic health records are not in use in Liechtenstein. In October 2020 it was reported that the introduction of electronic health records in Liechtenstein was scheduled to begin in 2021. [1, 2] There is no evidence that they are already in use on the websites of the government, the State Administration, or the National Hospital. [3, 4, 5] However, in 2019 the Ministry of Social Affairs published a consultation report on the subject, which states that health data included in the records should be "in structured electronic form on the basis of recognized international standards". [6] The report puts particular emphasis on the need to use international standards to ensure compatibility with systems in neighbouring Austria and Switzerland, so as to facilitate the delivery of healthcare in Liechtenstein to people insured in those countries, and of healthcare in those countries to people insured in Liechtenstein. [6]

- [1] Damian Becker. 9 October 2020. "Electronic health records planned." ("Elektronisches Gesundheitsdossier geplant.") Liechtensteiner Vaterland. [<https://www.vaterland.li/liechtenstein/politik/elektronisches-gesundheitsdossier-geplant;art169,432497>]. Accessed 19 November 2020.
- [2] Government of the Principality of Liechtenstein. 6 October 2020. "Electronic health record report and application adopted." ("Bericht und Antrag über das elektronische Gesundheitsdossier verabschiedet.") [<https://www.regierung.li/de/mitteilungen/223819/?typ=news>]. Accessed 19 November 2020.
- [3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 19 November 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 19 November 2020.

[5] Liechtenstein National Hospital. [<https://www.landesspital.li/>]. Accessed 19 November 2020.

[6] Ministry of Social Affairs of the Principality of Liechtenstein. 2019. "Consultation Report on the Creation of a Law on Electronic Health Records." ("Vernehmlassungsbericht betreffend die Schaffung eines Gesetzes über das elektronische Gesundheitsdossier.") [<https://www.llv.li/files/srk/vnb-elektronisches-gesundheitsdossier-egd.pdf>]. Accessed 19 November 2020.

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

2.4.2a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has established mechanisms for sharing surveillance data across ministries. According to the Joint External Evaluation (JEE) of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017, as far as surveillance and data sharing are concerned, Liechtenstein is part of the Swiss system, functioning in the same manner as an additional Swiss canton [1]. The JEE also notes that the system's legal basis is contained in Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020, also known as the Epidemic Law). [1] The Epidemic Law, which applies to Liechtenstein as well, stipulates that the Swiss Federal Office of Public Health (FOPH) has the power to coordinate with other federal agencies and cantonal authorities. [2, 3]. The law further establishes a body called One Health, the purpose of which is to support and coordinate cross-ministerial information sharing and collaboration regarding of human health, veterinary health and environmental issues, as well as coordination between the federal and cantonal levels. [2, 4, 5] One Health is led by the Federal Food Safety and Veterinary Office (FFSVO), and brings together representatives from several Swiss federal offices, including the Federal Office for the Environment, the Federal Office for Agriculture and the FOPH, as well as cantonal departments for public health, veterinary affairs, food safety, agriculture and the environment. [2, 4, 5] However, there is no mention of Liechtenstein's ministries being involved in this mechanism in the Epidemic Law, on the FFSVO's webpage about One Health, or in the 2017 Regulation on the Organization of the One Health Sub-Organ. [2, 4, 5] There is no mention of any mechanisms for inter-ministerial data sharing on the websites of Liechtenstein's government or state administration. [6, 7] Liechtenstein's Ministry of Social Affairs is responsible for health, and under its authority are the Office of Public Health and the Food and Veterinary Office. [8, 9] The Office of Public Health's areas of responsibility include medication, healthcare workers, hospitals, health insurance, health promotion and human health in general. [10] The Food and Veterinary Office's areas of responsibility include food safety, water quality, consumer protection, animal medication, animal health, animal welfare, dog ownership and tobacco. [11] The Ministry of Home Affairs, Education and Environment is responsible for environmental protection, and under its authority is the Environmental Office. [12, 13] The Environmental Office has numerous competencies related to environmental protection, wild animals and agriculture, including environmental surveillance. [14, 15]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 6 December 2020.

[2] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 December 2020.

2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Federal Food Safety and Veterinary Office of the Swiss Confederation. 29 December 2017. "One Health Sub-Organ." ("Unterorgan One Health"). [<https://www.blv.admin.ch/blv/de/home/das-blv/organisation/kommissionen/unterorgan-one-health.html>]. Accessed 6 December 2020.

[5] Federal Food Safety and Veterinary Office of the Swiss Confederation. 1 November 2017. "Regulation on the Organization of the One Health Sub-Organ." ("Reglement über die Organisation des Unterorgans One Health.") [https://www.blv.admin.ch/dam/blv/de/dokumente/das-blv/auftrag/reglement-unterorgan-one-health.PDF.download.PDF/Reglement%20%C3%BCber%20die%20Organisation%20des%20Unterorgans%20One%20Health_E.PDF]. Accessed 6 December 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 7 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 7 December 2020.

[8] Government of the Principality of Liechtenstein. "Ministry of Social Affairs." ("Ministerium für Gesellschaft.") [<https://www.regierung.li/ministerien/ministerium-fuer-gesellschaft/>]. Accessed 7 December 2020.

[9] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Assigned offices." ("Ministerium für Gesellschaft. Zugeordnete Amtstellen.") [<https://www.regierung.li/ministerien/ministerium-fuer-gesellschaft/amtsstellen/>]. Accessed 7 December 2020.

[10] State Administration of the Principality of Liechtenstein. "Office of Public Health." ("Amt für Gesundheit.") [<https://www.llv.li/inhalt/1908/amtsstellen/amt-fur-gesundheit>]. Accessed 7 December 2020.

[11] State Administration of the Principality of Liechtenstein. "Food and Veterinary Office." ("Amt für Lebensmittelkontrolle und Veterinärwesen.") [<https://www.llv.li/inhalt/11017/amtsstellen/amt-fur-lebensmittelkontrolle-und-veterinarwesen>].

[12] Government of the Principality of Liechtenstein. "Ministry of Home Affairs, Education and Environment." ("Ministerium für Inneres, Bildung und Umwelt.") [<https://www.regierung.li/ministerien/ministerium-fuer-inneres-bildung-und-umwelt/>]. Accessed 7 December 2020.

[13] Government of the Principality of Liechtenstein. "Ministry of Home Affairs, Education and Environment. Assigned offices" ("Ministerium für Inneres, Bildung und Umwelt. Zugeordnete Amtstellen.") [<https://www.regierung.li/ministerien/ministerium-fuer-inneres-bildung-und-umwelt/amtsstellen>]. Accessed 7 December 2020.

[14] State Administration of the Principality of Liechtenstein. "Environmental Office." ("Amt für Umwelt.") [<https://www.llv.li/inhalt/12298/amtsstellen/amt-fur-umwelt>]. Accessed 7 December 2020.

[15] State Administration of the Principality of Liechtenstein. "Environmental surveillance." ("Umweltbeobachtung.") [<https://www.llv.li/inhalt/1796/amtsstellen/umweltbeobachtung>]. Accessed 7 December 2020.

2.4.3 Transparency of surveillance data

2.4.3a

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

Yes = 1 , No = 0

Current Year Score: 0

Liechtenstein does not make de-identified health surveillance data on disease outbreaks publicly available. The Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017 reports

that Liechtenstein is fully incorporated in Switzerland's system for the surveillance of infectious diseases, functioning as if it were an additional Swiss canton. [1] Switzerland's Federal Office of Public Health (FOPH) runs the Reporting System for Notifiable Infectious Diseases, which allows all of Switzerland's and Liechtenstein's physicians, hospitals, healthcare institutions and laboratories to report cases of notifiable diseases. [2, 3] The FOPH publishes on its website (and updates weekly) the number of cases of infectious diseases covered by this system, including both Switzerland and Liechtenstein. [4] This includes data on 51 infectious diseases, including tuberculosis, tetanus, Zika virus, cholera, Lyme disease and HIV. [4] For each disease, data are provided for Liechtenstein alone, as well as for Liechtenstein and Switzerland together. [4] The JEE reports that the Swiss authorities also provide Liechtenstein with epidemic intelligence, data collection, data analysis, data reporting and data communication. [1] However, there is no evidence that Liechtenstein publishes any data itself, including on the websites of its government and state administration, other than daily updates on COVID-19. [5, 6]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 6 December 2020.

[2] Federal Office of Public Health. 28 August 2018. "Reporting systems for infectious diseases." ("Melde-systeme für Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/krankheiten/infektionskrankheiten-bekaempfen/meldesysteme-infektionskrankheiten.html>]. Accessed 6 December 2020.

[3] Federal Office of Public Health. 13 March 2020. "Notifiable infectious diseases." ("Meldepflichtige Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/krankheiten/infektionskrankheiten-bekaempfen/meldesysteme-infektionskrankheiten/meldepflichtige-ik.html>]. Accessed 6 December 2020--

[4] Federal Office of Public Health. 1 December 2020. "Figures on infectious diseases." ("Zahlen zu Infektionskrankheiten.") [<https://www.bag.admin.ch/bag/de/home/zahlen-und-statistiken/zahlen-zu-infektionskrankheiten.html>]. Accessed 8 December 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 8 December 2020.

[6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li/>]. Accessed 8 December 2020.

2.4.3b

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein makes de-identified COVID-19 surveillance data available via daily reports on government websites. On the central government website Regierung.li, the Ministry of Social Affairs publishes daily COVID-19 situation reports. [1, 2] These reports contain the total number of confirmed cases so far, the number of new cases in the past day, the total number of deaths, the number of new deaths in the past day, the number of people currently hospitalized, and the number of people who have recovered. [3] The same reports are also published on a government website dedicated to COVID-19, Hebensorg.li. [4]

[1] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Press releases." ("Ministerium für Gesellschaft. Medienmitteilungen.") [<https://www.regierung.li/ministerien/ministerium-fuer-gesellschaft/medienmitteilungen/>]. Accessed 18 November 2020.

[2] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Current information on coronavirus." ("Ministerium für Gesellschaft. Aktuelle Informationen zum Coronavirus.") [<https://www.regierung.li/coronavirus>]. Accessed 18 November 2020.

[3] Ministry of Social Affairs of the Principality of Liechtenstein. 18 November 2020. "COVID-19: Situation report of 18

November 2020." ("COVID-19: Situationsbericht vom 18. November 2020.")

[https://www.regierung.li/de/mitteilungen/223965/?typ=content&nid=11076]. Accessed 18 November 2020.

[4] Government of the Principality of Liechtenstein. "Take care." ("Heben Sorg.") [https://hebensorg.li/]. Accessed 18 November 2020.

2.4.4 Ethical considerations during surveillance

2.4.4a

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

Yes = 1 , No = 0

Current Year Score: 1

Liechtenstein has legislation safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Switzerland's Federal Law on Data Protection (adopted 1992, last amended 2019), which is fully applicable in Liechtenstein, governs all protection of personal data, including that of identifiable health information. [1, 2] Article 3 categorizes health data as "personal data requiring special protection" ("besonders schützenswerte Personendaten"), which means that the data can only be used with informed consent, if there is a demonstrable major public interest, or if the data are de-identified. [1] Moreover, article 15 of Liechtenstein's Health Law (adopted 2007, last amended 2018) and article 121 of Liechtenstein's Criminal Code (adopted 1987, last amended 2019) both prohibit physicians and other medical workers from disclosing information provided to them in the course of their work, unless they have the permission of the individuals concerned or there is an express legal requirement. [3, 4]

[1] Federal Assembly of the Swiss Confederation. 19 June 1992. "Federal Law on Data Protection." ("Bundesgesetz über den Datenschutz.") [https://www.admin.ch/opc/de/classified-compilation/19920153/index.html]. Accessed 8 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [https://www.gesetze.li/konso/2020285000]. Accessed 18 November 2020.

[3] Princely Government of Liechtenstein. 13 December 2007. "Health Law." ("Gesundheitsgesetz.") [https://www.gesetze.li/konso/2008030000]. Accessed 8 December 2020.

[4] Princely Government of Liechtenstein. 24 June 1987. "Criminal Code." ("Strafgesetzbuch.") [https://www.gesetze.li/konso/1988.37]. Accessed 8 December 2020.

2.4.4b

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

Yes = 1 , No = 0

Current Year Score: 1

Liechtenstein has legislation safeguarding the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities, which mandates protection from cyber-attacks. Article 7 of Switzerland's Federal Law on Data Protection (adopted 1992, last amended 2019), which is fully applicable in Liechtenstein, states that all personal data must be protected against unauthorized access through "appropriate technical and organizational measures",

but the law does not provide any further detail. [1, 2] Article 8 of Switzerland's Ordinance to the Federal Law on Data Protection (adopted 1993, last amended 2012), which is also fully applicable in Liechtenstein, states that anyone who processes personal data, or provides a data communication network, must provide "appropriate data protection", so as to ensure the confidentiality, availability and integrity of the data. [2, 3] The article elaborates that, inter alia, this must include protection against "unauthorized or accidental deletion", "forgery, theft or unlawful use" and "unauthorized alteration, copying, access or other unauthorized processing". [3] The article further states that these measures must be periodically reviewed, and should take into account the latest technology. [3] Furthermore, under Liechtenstein's Data Protection Law (adopted 2018, last amended 2020), the European Union's General Data Protection Regulation (GDPR) applies in Liechtenstein. [4] GDPR includes specific provisions to protect data against cyber attacks, including a requirement that data held by state authorities must be overseen by a dedicated data protection officer who is proficient in dealing with cyber attacks, and a requirement to inform all individuals affected by a data breach within 72 hours. [5]

[1] Federal Assembly of the Swiss Confederation. 19 June 1992. "Federal Law on Data Protection." ("Bundesgesetz über den Datenschutz.") [<https://www.admin.ch/opc/de/classified-compilation/19920153/index.html>]. Accessed 8 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[3] Swiss Federal Council. 14 June 1993. "Ordinance on the Federal Law on Data Protection." ("Verordnung zum Bundesgesetz über den Datenschutz.") [<https://www.admin.ch/opc/de/classified-compilation/19930159/index.html>]. Accessed 8 December 2020.

[4] Princely Government of Liechtenstein. 4 October 2018. "Data Protection Law." ("Datenschutzgesetz.") [<https://www.gesetze.li/konso/2018.272>]. Accessed 7 January 2021.

[5] 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 7 January 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

Liechtenstein has committed to share surveillance data during a public health emergency with other countries in the region, for more than one disease. As a member of the European Economic Area (EEA), Liechtenstein participates in the European Center for Disease Prevention and Control's Early Warning and Response System (EWRS), together with all members of the EEA and the European Union. [1] The EWRS enables sharing of data for risk assessment and management and provides a platform to ensure "timely, efficient and coordinated public health action", and to notify participating countries of outbreaks for coordinated measures. [1] Over the years, the EWRS has played an important role in supporting response to health crises, including severe acute respiratory syndrome (SARS), ebola and avian influenza. [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 use the EWRS to make available to the competent national authorities any information that may be useful for coordinating the response –

including information related to serious cross-border threats to health. [2] In addition, Liechtenstein routinely shares surveillance data with Switzerland (which is not part EWRS), though this sharing is not regulated by any formal agreement or law. [3]

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

[<https://www.ecdc.europa.eu/en/early-warning-and-response-system-ewrs>]. Accessed 8 December 2020.

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

[https://ec.europa.eu/health/sites/health/files/preparedness_response/docs/decision_serious_crossborder_threats_22102013_en.pdf]. Accessed 8 August 2020.

[3] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 6 December 2020.

2.5 CASE-BASED INVESTIGATION

2.5.1 Case investigation and contact tracing

2.5.1a

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

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

Current Year Score: 0

There is no evidence that Liechtenstein has a national system in place to provide support at the sub-national level to conduct contact tracing, either for future or ongoing public health emergencies. There is no mention of such a system in the Swiss Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020) or the Swiss Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), both of which apply in Liechtenstein. [1, 2, 3] There is no mention of such a system in the Liechtenstein Pandemic Plan (adopted 2006) or the Joint External Evaluation of IHR Core Capacities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017. [4, 5] There is no evidence of such a system on the websites of Liechtenstein's government or state administration. [6, 7]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 8 December 2020.

[2] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 8 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 8 December 2020.

[4] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan."

("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 8 December 2020.

[5] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 8 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 8 December 2020.

2.5.1b

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

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

Current Year Score: 0

There is insufficient evidence that Liechtenstein 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. Articles 32 and 35 of the Swiss Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020, fully applicable in Liechtenstein) states that people who are (or who are suspected of being) sick, infected or infectious can be required to self-isolate. [1, 2] Article 63 of the same law states that the authorities can compensate people who suffer losses due to such self-isolation, but does not state that they must do so. [1] This law provides no further details on such compensation, and does not mention medical care for people required to self-isolate either. [1] No relevant provisions are contained in Switzerland's Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019, fully applicable in Liechtenstein). [2, 3] However, article 18 of the first section of chapter 26 of Liechtenstein's General Civil Code (adopted 1811, last amended 2018) states that if an employee is unable to work due to illness, an accident or "fulfillment of legal obligations", the employer must pay the usual wages for at least three weeks, provided that the employment relationship has existed for more than three months. [4] Article 19 adds that if the employee is unable to work due to a legal obligation, and if the employee receives compensation from statutory insurance, the employer is only required to pay the difference (if any) between the compensation and four fifths of the employee's usual wage. [4] Article 16 of Liechtenstein's Law on Health Insurance (adopted 1971, last amended 2020) states that if an employee is confirmed by a physician to be unable to work for health reasons, they are entitled to "sick pay" ("Krankengeld") from their insurance from the second day of incapacity to work, equivalent to at least 80% of their usual wage. [5] The Law on Health Insurance does not, however, mention people required to self-isolate due to infectious disease or suspicion thereof, or people unable to work due to any other legal obligation. [5] A document published by the Ministry of Social Affairs in March 2020 explains that people unable to work due to having COVID-19 are covered by the aforementioned provisions, as long as their inability to work is confirmed by a physician. [6] The same document also states that people legally required to self-isolate due to having been in contact with an infected person must be paid by their employer "for a limited time", but it provides no further details, does not mention a legal basis and does not mention whether this only applies to COVID-19 or is a general provision. [6] There are no relevant provisions in the Law on Unemployment Insurance and Insolvency Compensation (adopted 2010, last amended 2020), the Law on Obligatory Accident Insurance (adopted 1989, last amended 2019) or the Ordinance on Measures to Combat the Coronavirus (adopted 2020). [7, 8, 9] There is no further evidence of any wraparound services for people required to self-isolate on the websites of Liechtenstein's government or state administration, or on the country's website dedicated to COVID-19. [10, 11, 12]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen

(Epidemiengesetz)." [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 8 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[3] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 8 December 2020.

[4] Princely Government of Liechtenstein. 1 June 1811. "General Civil Code." ("Allgemeines bürgerliches Gesetzbuch.") [<https://www.gesetze.li/konso/1003.001>]. Accessed 8 December 2020.

[5] Princely Government of Liechtenstein. 24 November 1971. "Law on Health Insurance." ("Gesetz über die Krankenversicherung.") [<https://www.gesetze.li/konso/1971.50>]. Accessed 8 December 2020.

[6] Ministry of Social Affairs of the Principality of Liechtenstein. 6 March 2020. "Questions and answers about employment in relation to the coronavirus (covid-19)." ("Fragen und Antworten zum Arbeitsverhältnis im Zusammenhang mit dem Coronavirus (Covid-19).") [<https://www.llv.li/files/avw/faq-arbeitsverhaeltnis-und-coronavirus.pdf>]. Accessed 8 December 2020.

[7] Princely Government of Liechtenstein. 24 November 2010. "Law on Unemployment Insurance and Insolvency Compensation." ("Gesetz über die Arbeitslosenversicherung und die Insolvenzenschädigung.") [<https://www.gesetze.li/konso/2010452000>]. Accessed 8 December 2020.

[8] Princely Government of Liechtenstein. 28 November 1989. "Law on Obligatory Accident Insurance." ("Gesetz über die obligatorische Unfallversicherung.") [<https://www.gesetze.li/konso/1990.46>]. Accessed 8 December 2020.

[9] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 8 December 2020.

[10] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 8 December 2020.

[11] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 8 December 2020.

[12] Government of the Principality of Liechtenstein. "Take care." ("Heben Sorg.") [<https://hebensorg.li/>]. Accessed 8 December 2020.

2.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein makes de-identified data on COVID-19 contact tracing available on government websites. Liechtenstein's government publishes daily COVID-19 situation reports on the central government website, Regierung.li, and on a government website dedicated to COVID-19, Hebensorg.li, but these do not include data on contact tracing. [1, 2, 3, 4] There is no evidence of data on COVID-19 contact tracing being made available on Regierung.li, Hebensorg.li, or the website of the State Administration. [3, 5, 6]

[1] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Press releases." ("Ministerium für Gesellschaft. Medienmitteilungen.") [<https://www.regierung.li/ministerien/ministerium-fuer-gesellschaft/medienmitteilungen/>]. Accessed 18 November 2020.

[2] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Current information on coronavirus." ("Ministerium für Gesellschaft. Aktuelle Informationen zum Coronavirus.") [<https://www.regierung.li/coronavirus>]. Accessed 18 November 2020.

[3] Government of the Principality of Liechtenstein. "Take care." ("Heben Sorg.") [<https://hebensorg.li/>]. Accessed 18 November 2020.

[4] Ministry of Social Affairs of the Principality of Liechtenstein. 18 November 2020. "COVID-19: Situation report of 18 November 2020." ("COVID-19: Situationsbericht vom 18. November 2020.")

[<https://www.regierung.li/de/mitteilungen/223965/?typ=content&nid=11076>]. Accessed 18 November 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 18 November 2020.

[6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 18 November 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is no evidence of a publicly available cooperative agreement between Liechtenstein's public health system and border control authorities to monitor suspected and potential cases for international travelers for a future or active public health emergency. Under the 1923 Customs Treaty between Liechtenstein and Switzerland, there can be no border controls between the two countries, and the Swiss authorities (namely the Federal Customs Administration, and its subordinate body the Swiss Border Corps) are responsible for controlling and protecting Liechtenstein's border with Austria. [1] (Liechtenstein does not contain any international airports. [2]) The Customs Treaty does not, however, mention co-operation between these Swiss authorities and Liechtenstein's public health system. [1] There is no mention of cooperation between Switzerland's Federal Customs Administration and Liechtenstein's public health system on the websites of Liechtenstein's government or state administration, or that of Switzerland's Federal Customs Administration. [3, 4, 5] On the website of the state administration, information for people entering Liechtenstein during the COVID-19 pandemic states that people coming from designated high-risk countries must register this fact with the Office of Public Health within two days of entering the country; it does not mention any role for border control authorities. [6]

[1] Swiss Confederation and Principality of Liechtenstein. 29 March 1923. "Treaty on the Accession of the Principality of Liechtenstein to the Swiss Customs Area." ("Vertrag über den Anschluss des Fürstentums Liechtenstein an das schweizerische Zollgebiet.") [<https://www.admin.ch/opc/de/classified-compilation/19230011/index.html>]. Accessed 8 December 2020.

[2] Liechtenstein Marketing. "Arrival." ("Anreise.") Tourismus.li. [<https://tourismus.li/unser-land/anreise-und-transport/anreise/>]. Accessed 8 December 2020.

[3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 8 December 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 8 December 2020.

[5] Federal Customs Authority of the Swiss Confederation. [<https://www.ezv.admin.ch/ezv/de/home.html>]. Accessed 8 December 2020.

[6] State Administration of the Principality of Liechtenstein. "Travel and quarantine." ("Reisen und Quarantäne.") [<https://www.llv.li/inhalt/118794/amtsstellen/reisen-und-quarantane>]. Accessed 8 December 2020.

2.6 EPIDEMIOLOGY WORKFORCE

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

2.6.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 1

There is no evidence that applied epidemiology training programs are available in Liechtenstein, but there is evidence that Liechtenstein's government provides resources to send citizens to other countries to participate in such programs. The European Program for Intervention Epidemiology Training (EPIET) and the European Program for Public Health Microbiology Training (EUPHEM) are open to citizens of the European Union and the European Economic Area (EEA), allowing them to undergo applied epidemiology training in a country other than that of their citizenship, at the expense of their own government. [1, 2] Liechtenstein is a member of the EEA. [3] There is no evidence of training available in Liechtenstein itself, including on the websites of the country's government and state administration. [4, 5]

[1] European Centre for Disease Prevention and Control. 14 August 2020. "Call for application for cohort 2021 ECDC Fellowship Programme EPIET and EUPHEM paths, EU-track." [<https://www.ecdc.europa.eu/en/about-us/work-us/call-application-cohort-2021-ecdc-fellowship-programme-epiet-and-euphem-paths-eu>]. Accessed 8 December 2020.

[2] Training Programs in Epidemiology and Public Health Interventions Network. "European Programme for Intervention Epidemiology Training (EPIET) and the European Programme for Public Health Microbiology Training (EUPHEM)." [<https://www.tephinet.org/training-programs/european-programme-for-intervention-epidemiology-training-epiet-and-the-european>]. Accessed 8 December 2020.

[3] State Administration of the Principality of Liechtenstein. "Who is a member of the EEA?" ("Wer ist Mitglied im EWR?") [<https://www.llv.li/inhalt/118620/amtsstellen/wer-ist-mitglied-im-ewr>]. Accessed 8 December 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 18 November 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 18 November 2020.

2.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The available field epidemiology training programs are explicitly inclusive of animal health professionals. The European Program for Intervention Epidemiology Training (EPIET) and the European Program for Public Health Microbiology Training (EUPHEM), through which Liechtenstein can send its nationals to undergo field epidemiology training in other countries, are

both open to people with post-secondary education in veterinary medicine. [1]

[1] European Centre for Disease Prevention and Control. 14 August 2020. "Call for application for cohort 2021 ECDC Fellowship Programme EPIET and EUPHEM paths, EU-track." [https://www.ecdc.europa.eu/en/about-us/work-us/call-application-cohort-2021-ecdc-fellowship-programme-epiet-and-euphem-paths-eu]. Accessed 8 December 2020.

2.6.2 Epidemiology workforce capacity

2.6.2a

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

Yes = 1, No = 0

Current Year Score: 0

2020

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

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

3.1 EMERGENCY PREPAREDNESS AND RESPONSE PLANNING

3.1.1 National public health emergency preparedness and response plan

3.1.1a

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

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

Current Year Score: 2

Liechtenstein has an overarching national health emergency response plan in place addressing planning for multiple communicable diseases. According to the World Health Organization's Joint External Evaluation (JEE) for Switzerland and Liechtenstein, published in 2018, "policies and strategies for public health emergency preparedness and response are in place" and these "have been tested, and meaningful experience has been gained in the management of recent major crises (pandemics of SARS, H1N1, avian flu, and Ebola)". [1] The JEE does not, however, refer to specific documents. [1] Liechtenstein's main planning document for public health emergencies is Switzerland's Federal Law on Combatting Communicable Human Diseases, also known as the Epidemic Law, which was adopted in 2012 and last amended in June 2020, and which is fully applicable in Liechtenstein under the 1923 Customs Treaty between the two countries. [2, 3] As well as addressing surveillance and prevention, the Epidemic Law covers pandemic response, listing non-pharmaceutical interventions (e.g. disinfection, isolation of infected persons, closure of certain businesses, bans on certain activities,

international travel restrictions), outlining duties of healthcare professionals and institutions during pandemics, making provisions for the distribution of medical countermeasures, addressing compensation of individuals and businesses negatively affected by pandemics and response measures, and detailing organizational matters. [2] Further, more detailed measures are included in Switzerland's Ordinance on Combatting Communicable Human Diseases, also known as the Epidemic Ordinance, which was adopted in 2015 and last amended in March 2019, and which is also fully applicable in Liechtenstein under the Customs Treaty. [3, 4] Although the Epidemic Law covers all communicable diseases with pandemic potential, the only disease it specifically names is COVID-19. [2] The Epidemic Ordinance, which also covers all communicable diseases with pandemic potential, includes specific references to influenza, smallpox, diphtheria, botulism, rabies, tuberculosis, measles, yellow fever and human immunodeficiency virus. [4] In addition, Liechtenstein has a document called the "Liechtenstein Pandemic Plan", which was published in 2006, but this is in fact a disease-specific plan focused exclusively on influenza. [5] The JEE states that Liechtenstein's individual capacity to cope with public health emergencies is limited, and notes that the country relies mainly on Swiss and Austrian emergency services, but does not provide further detail on the responsibilities that Switzerland or Austria take during public health emergencies. [1]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 November 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>] Accessed 6 November 2020.

[5] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.

3.1.1b

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

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

Current Year Score: 1

Liechtenstein's overarching national public health emergency response plans have been updated in the last 3 years. Switzerland's Federal Law on Combatting Communicable Human Diseases, which is also known as the Epidemic Law and contains measures to prevent, detect and respond to epidemics, was adopted in 2012 and last amended in June 2020. [1] Switzerland's Ordinance on Combatting Communicable Human Diseases, which is also known as the Epidemic Ordinance and goes into more detail on the same topic, was adopted in 2015 and last amended in March 2019. [2] Liechtenstein's government most recently affirmed these two Swiss documents as applying in Liechtenstein in October 2020. [3]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen

(Epidemiengesetz)." [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 November 2020.

[2] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>] Accessed 6 November 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

3.1.1c

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

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

Current Year Score: 1

Liechtenstein's overarching national public health emergency response plans include considerations for pediatric and other vulnerable populations. The Swiss Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020, and fully applicable in Liechtenstein) contains several provisions related to vulnerable populations. [1, 2] Article 21 notes that cantonal authorities must regularly check the vaccination status of schoolchildren, and can offer vaccinations at schools. [1] Article 22 states that, if there is significant risk, cantonal authorities can make vaccinations mandatory for vulnerable groups, persons with high exposure and persons who carry out particular activities. Article 35 states that if an institution is quarantining infectious individuals, it must take steps to ensure vulnerable people are protected from infection. Article 40 allows the cantonal authorities to close and impose restrictions on schools to prevent the spread of communicable diseases. The law does not define "vulnerable" ("gefährdet") as used in articles 22 and 35, or provide any examples of whom the term includes. [1] The Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019, and fully applicable in Liechtenstein) also contains several provisions related to vulnerable populations. [2] Article 3 notes the existence of the Swiss Pediatric Surveillance Unit, a system for surveillance and early warning of rare communicable diseases among hospitalized children. Article 28 requires schools, kindergartens and daycare centers to inform children's guardians about measles and measles vaccinations. Article 36 requires cantonal authorities to check children's vaccination status at least twice "at the start and end of mandatory education" and to encourage children's guardians to have their children fully vaccinated in line with government recommendations. Article 38 states that when determining whether a significant risk exists, among other factors, cantonal authorities must consider danger to especially vulnerable people, but does not define whom this means. [2, 3]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 6 November 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[3] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 6 November 2020.

3.1.1d

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

Yes = 1, No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein has mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), which governs preparedness and response for infectious disease outbreaks, and which is fully applicable in Liechtenstein, includes several provisions for engagement with the private sector. [1, 2] Articles 12-14 require private healthcare providers to inform the authorities about notifiable diseases. [1] Article 19 states that the Swiss Federal Council can oblige private institutions with a special duty to protect the health of people in their care to take preventive measures. Article 40 states that private businesses can be forced to close or make changes to their business to prevent the spread of infectious diseases. Article 50 states that the Swiss Federal Office of Public Health can grant funds to private companies that contribute to detecting, monitoring, preventing or controlling infectious disease. Article 79 states that the Swiss Federal Council can delegate implementation of the law to private companies. [1]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

3.1.3 Non-pharmaceutical interventions planning

3.1.3a

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

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

Current Year Score: 2

Liechtenstein has policies in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic, and they cover more than one disease. Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), which is fully applicable in Liechtenstein, outlines NPIs including: disinfection, isolation of infected persons, closure of certain businesses, bans on certain activities, and international travel restrictions. [1, 2] Switzerland's Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), which is also fully applicable in Liechtenstein, gives detailed guidance on disinfection, international travel restrictions, restrictions on movement of goods, and special measures regarding the handling and destruction of corpses. [2, 3] Both of these apply to infectious diseases in general, rather than any specific disease. [1, 3] In response to the ongoing COVID-19 pandemic, Liechtenstein has implemented NPIs through the Ordinance on Measures to Combat the Coronavirus (adopted June 2020), and several Swiss ordinances introducing NPIs have also applied to Liechtenstein. [2, 4]

[1] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[3] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 3 December 2020.

[4] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 3 December 2020

3.2 EXERCISING RESPONSE PLANS

3.2.1 Activating response plans

3.2.1a

Does the country meet one of the following criteria?

- Is there evidence that the country has activated their national emergency response plan for an infectious disease outbreak in the past year?
- Is there evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year?

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

Current Year Score: 1

In the past year, Liechtenstein has activated its national emergency response plan for an infectious disease outbreak, but there is no evidence that it has completed a national-level biological threat-focused exercise. In March 2020, in response to the global COVID-19 pandemic reaching Liechtenstein, the government adopted the Ordinance on Measures to Combat the Coronavirus. [1] The ordinance was adopted in compliance with articles 7 of Switzerland's Federal Law on Combatting

Communicable Human Diseases (adopted 2012, last amended June 2020, fully applicable in Liechtenstein), which creates the concept of an "extraordinary situation" ("ausserordentliche Lage"), and with article 40 of the same law, which allows cantonal authorities to introduce measures to prevent the spread of an infectious disease. [1, 2, 3] The ordinance introduced restrictions on entering the country, on the export of personal protective equipment, on large events, and on commerce, as well as other measures to protect the population. [1] In June 2020 the ordinance adopted in March was replaced with a new one with the same title and a new set of regulations. [4] This new ordinance similarly cites article 40 of Switzerland's Federal Law on Combatting Communicable Human Diseases, and also cites article 6 of this law, which creates the concept of a "special situation" ("besondere Lage"). [2, 4] The World Health Organization does not list Liechtenstein as having conducted or planning to conduct any simulation exercises. [5] There is no evidence that Liechtenstein has completed a national-level biological threat-focused exercise on the websites of Liechtenstein's government or state administration. [6, 7]

[1] Princely Government of Liechtenstein. 13 March 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020094000>]. Accessed 3 December 2020.

[2] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 3 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

[4] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 3 December 2020.

[5] World Health Organization. "Simulation Exercise." [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 3 December 2020.

[6] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 18 November 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 18 November 2020.

3.2.1b

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

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

Current Year Score: 0

There is no evidence that Liechtenstein has in the past year undergone an exercise to identify a list of gaps and best practices through an after action review or a biological threat-focused exercise. The World Health Organization does not list Liechtenstein as ever having completed an after-action review, or as having one planned. [1] There is no evidence of Liechtenstein having undergone an exercise to identify a list of gaps and best practices through an after action review or a biological threat-focused exercise on the websites of the country's government or state administration. [2, 3]

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

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 18 November 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 18 November 2020.

3.2.2 Private sector engagement in exercises

3.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has in the past year undergone a national-level biological threat-focused exercise that has included private sector representatives. The World Health Organization does not list Liechtenstein as having conducted or planning to conduct any simulation exercises. [1] There is no evidence that Liechtenstein has completed a national-level biological threat-focused exercise on the websites of Liechtenstein's government or state administration. [2, 3]

[1] World Health Organization. "Simulation Exercise." [<https://extranet.who.int/sph/simulation-exercise>]. Accessed 3 December 2020.

[2] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 3 December 2020.

[3] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 3 December 2020.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has an emergency operations center (EOC). The Law on the Protection of the Population (adopted 2007, last amended 2017) outlines the organization of Liechtenstein's state structures for emergency response, but does not mention an EOC. [1] Article 14 of this law names the Office of Civil Protection as the main body responsible for emergency response, including the training of rescue and emergency services, operational planning for emergency response, informing the population during emergencies, and implementing measures to supply the national economy during emergencies. [1] Articles 6, 9 and 10 mandate the creation of a temporary National Crisis Management Board (LandesfÃ¼hrungsstab) during national crises, in order to manage and coordinate response efforts. [1] The website of Liechtenstein's state administration has several pages dedicated to describing the functions of the Office of Civil Protection, but none of them mention an EOC. [2] The Joint External Evaluation (JEE) of IHR Capabilities in the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, confirms that Liechtenstein has no EOC, but notes that the National Crisis Management Board, when convened, fulfills some similar functions. [3] The JEE explains that the National Crisis Management Board is led by the minister of education, home affairs and environment, and consists of public health staff and representatives of other affected ministries, as well as representatives of the health, civil protection police, and communication offices. It notes that Liechtenstein cannot guarantee that the National Crisis Management Board would always be available, as health experts may be on holiday, and it reports that Liechtenstein does not appear to have any standard operating procedures or guidelines for emergency operating procedures. Overall, the JEE reports that

Liechtenstein's capabilities to cope with public health emergencies are limited, though it does note that the police headquarters is available 24-hours, every day, and would serve as an EOC during a crisis. [3] There is no further relevant evidence on the website of Liechtenstein's government or state administration. [4, 5]

[1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [https://www.gesetze.li/konso/2007139000]. Accessed 9 December 2020.

[2] State Administration of the Principality of Liechtenstein. "Office of Civil Protection." ("Amt für Bevölkerungsschutz.") [https://www.llv.li/inhalt/12140/amtstellen/amt-fur-bevolkerungsschutz]. Accessed 9 December 2020.

[3] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.

[4] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 9 December 2020.

[5] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 9 December 2020.

3.3.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Emergency Operations Center (EOC) required to conduct a drill for a public health emergency scenario at least once per year or that it conducts an annual drill as there is no evidence that Liechtenstein has an emergency operations center (EOC). There is no evidence of an EOC in the Law on the Protection of the Population (adopted 2007, last amended 2017), or on the websites of the government or state administration. [1, 2, 3] The Joint External Evaluation (JEE) of IHR Capabilities in the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, confirms that Liechtenstein has no EOC, though it notes that some functions of an EOC may be fulfilled by various bodies. [4] The JEE also reports that Liechtenstein does not conduct health-related emergency drills on an annual basis. [4] Article 17 of the Law on the Protection of the Population requires rescue and emergency services to undergo training in the form of courses and drills, but it does not specify a frequency or mention whether they should cover public health emergencies. [1] In addition, Liechtenstein conducts an annual nationwide test of its siren system on the first Wednesday in February; it is not clear how long it has done this. [5, 6]

[1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [https://www.gesetze.li/konso/2007139000]. Accessed 9 December 2020.

[2] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 9 December 2020.

[3] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 9 December 2020.

[4] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.

[5] State Administration of the Principality of Liechtenstein. "Alarm signal." ("Alarmzeichen.")

[https://www.llv.li/inhalt/11022/amtstellen/alarmzeichen]. Accessed 9 December 2020.

[6] Lie Zeit. 31 January 2020. "Siren test on Wednesday 5 February 2020 in Liechtenstein and Switzerland." ("Sirentest am Mittwoch, 5. Februar 2020 in Liechtenstein und Schweiz.") [https://www.lie-zeit.li/2020/01/sirentest-am-mittwoch-5-februar-2020-in-liechtenstein-und-schweiz/]. Accessed 9 December 2020.

3.3.1c

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has an emergency operation center (EOC), or has conducted any kind of emergency response or emergency response exercise activated within 120 minutes of identifying a public health emergency or scenario. There is no such evidence “including in relation to the COVID-19 pandemic” on the websites of the government or state administration. [1, 2] The Joint External Evaluation (JEE) of IHR Capabilities in the Swiss Confederation and the Principality of Liechtenstein, conducted in 2017, confirms that Liechtenstein has no EOC. [3] The JEE notes that Switzerland has demonstrated the capacity to activate a national EOC at short notice, but states that this cannot always happen within two hours of the occurrence of an event. [3]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.

[3] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 11 January 2021.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?

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

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

Current Year Score: 0

There is no evidence that Liechtenstein's public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event, or of standard operating procedures, guidelines, memoranda of understanding or other agreements between the public health and security authorities to respond to a potential deliberate biological event. There is no such evidence on the websites of the government or the state administration. [1, 2] There is no mention of deliberate biological events in the Law on the Protection of the Population (adopted 2007, last amended 2017) or the Risk Analysis and Security Plan (date unknown). [3, 4] The Report on Phase 1 of the Liechtenstein Hazard Analysis (published 2012) names biological attacks as a danger facing Liechtenstein “particularly noting the possibility of letters containing anthrax, smallpox or ricin, and of infection of the water supply” but it does not outline response procedures. [5]

- [1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.
- [2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.
- [3] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [<https://www.gesetze.li/konso/2007139000>]. Accessed 9 December 2020.
- [4] Office of Civil Protection of the Principality of Liechtenstein. "Risk Analysis and Security Plan for Liechtenstein." ("Risikoanalysen und Sicherheitsplan für Liechtenstein.") [<https://www.llv.li/files/abs/katastrophenschutz.pdf>]. Accessed 9 December 2020.
- [5] Office of Civil Protection of the Principality of Liechtenstein. "Liechtenstein Hazard Analysis. Report on phase 1: situation analysis, hazard selection, risk assessment." ("Gefährdungsanalyse Liechtenstein. Bericht zur Phase I: Situationsanalyse, Gefährdungsauswahl und Risikoabschätzung.") [https://www.llv.li/files/abs/pdf-llv-abs-bericht_gefaehrungsanalyse-phase1-2012.pdf]. Accessed 9 December 2020.

3.5 RISK COMMUNICATIONS

3.5.1 Public communication

3.5.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has any document outlining how messages will reach populations and sectors with different communications needs during a public health emergency. There is no such evidence in the Law on the Protection of the Population (adopted 2007, last amended 2017), the Report on Phase 1 of the Liechtenstein Hazard Analysis (published 2012), or the Liechtenstein Pandemic Plan (published 2006). [1, 2, 3] There is no such evidence on the websites of Liechtenstein's government or state administration. [4, 5] According to the World Health Organization's Joint External Evaluation of Switzerland and Liechtenstein, which was conducted in 2017 and published in 2018, Liechtenstein's response to public health emergencies follows Swiss structures, and makes use of Swiss emergency communication capacity. [6] However, there is no such evidence in Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020) or Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), both of which are fully applicable in Liechtenstein. [7, 8, 9]

- [1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [<https://www.gesetze.li/konso/2007139000>]. Accessed 9 December 2020.
- [2] Office of Civil Protection of the Principality of Liechtenstein. "Liechtenstein Hazard Analysis. Report on phase 1: situation analysis, hazard selection, risk assessment." ("Gefährdungsanalyse Liechtenstein. Bericht zur Phase I: Situationsanalyse, Gefährdungsauswahl und Risikoabschätzung.") [https://www.llv.li/files/abs/pdf-llv-abs-bericht_gefaehrungsanalyse-phase1-2012.pdf]. Accessed 9 December 2020.
- [3] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-pandemieplan_september_2006.pdf]. Accessed 18 November 2020_
- [4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.
- [5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.
- [6] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the

Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[7] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 9 December 2020.

[8] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 3 December 2020.

[9] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a risk communication plan that is specifically intended for use during a public health emergency. Article 10 of the Law on the Protection of the Population (adopted 2007, last amended 2017) names the National Crisis Management Board (Landesführungsstab) as responsible for alerting and informing the population during crises, while article 14 gives the same responsibility to the Office of Civil Protection. [1] Article 24 states that the government will establish systems to alert the population of actual and possible crises, while article 25 states that the government will establish systems for communicating during crises. [1] However, the Law on the Protection of the Population does not outline any further details on risk communication. [1] The Report on Phase 1 of the Liechtenstein Hazard Analysis (published 2012) briefly notes the importance of timely and accurate communication, but does not outline a communication plan. [2] The Liechtenstein Pandemic Plan (published 2006), which outlines response to influenza pandemics, does not include a risk communication plan, but it states that Liechtenstein will develop one based on the Swiss communication concept. [3] There is no evidence of a relevant risk communication plan on the websites of Liechtenstein's government or state administration. [4, 5] According to the World Health Organization's Joint External Evaluation of Switzerland and Liechtenstein, which was conducted in 2017 and published in 2018, Liechtenstein's response to public health emergencies follows Swiss structures, and makes use of Swiss emergency communication capacity. [6] However, Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), which is fully applicable in Liechtenstein and which outlines response to public health emergencies, only has two articles dedicated to communication: article 9 gives the Federal Ministry of Public Health (FOPH) responsibility for providing information about infectious diseases (and recommendations on combatting them) to the public and to state bodies, while article 10 gives the FOPH responsibility for information exchange with the relevant federal and cantonal bodies. [7, 8] There are no relevant provisions in Switzerland's Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), which is also fully applicable in Liechtenstein. [8, 9]

- [1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [https://www.gesetze.li/konso/2007139000]. Accessed 9 December 2020.
- [2] Office of Civil Protection of the Principality of Liechtenstein. "Liechtenstein Hazard Analysis. Report on phase 1: situation analysis, hazard selection, risk assessment." ("Gefährdungsanalyse Liechtenstein. Bericht zur Phase I: Situationsanalyse, Gefährdungsauswahl und Risikoabschätzung.") [https://www.llv.li/files/abs/pdf-llv-abs-bericht_gefaehrungsanalyse-phase1-2012.pdf]. Accessed 9 December 2020.
- [3] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.
- [4] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 9 December 2020.
- [5] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 9 December 2020.
- [6] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.
- [7] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [https://www.admin.ch/opc/de/classified-compilation/20071012/index.html]. Accessed 9 December 2020.
- [8] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [https://www.gesetze.li/konso/2020285000]. Accessed 18 November 2020.
- [9] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).") [https://www.admin.ch/opc/de/classified-compilation/20133212/index.html]. Accessed 3 December 2020.

3.5.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has any documents that designate a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. There is no such evidence in the Law on the Protection of the Population (adopted 2007, last amended 2017), the Report on Phase 1 of the Liechtenstein Hazard Analysis (published 2012), or the Liechtenstein Pandemic Plan (published 2006). [1, 2, 3] There is no such evidence on the websites of Liechtenstein's government or state administration. [4, 5] According to the World Health Organization's Joint External Evaluation of Switzerland and Liechtenstein, which was conducted in 2017 and published in 2018, Liechtenstein's response to public health emergencies follows Swiss structures, and makes use of Swiss emergency communication capacity. [6] However, there is no such evidence in Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020) or Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), both of which are fully applicable in Liechtenstein. [7, 8, 9]

- [1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [https://www.gesetze.li/konso/2007139000]. Accessed 9 December 2020.

- [2] Office of Civil Protection of the Principality of Liechtenstein. "Liechtenstein Hazard Analysis. Report on phase 1: situation analysis, hazard selection, risk assessment." ("Gefährdungsanalyse Liechtenstein. Bericht zur Phase I: Situationsanalyse, Gefährdungsauswahl und Risikoabschätzung.") [https://www.llv.li/files/abs/pdf-llv-abs-bericht_gefaehrungsanalyse-phase1-2012.pdf]. Accessed 9 December 2020.
- [3] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.
- [4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.
- [5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.
- [6] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [7] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 9 December 2020.
- [8] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 3 December 2020.
- [9] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.

3.5.2 Public communication

3.5.2a

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

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

Current Year Score: 1

Liechtenstein's public health system uses online media platforms to share information during active emergencies, but there is insufficient evidence that it regularly does so at other times. The Ministry of Social Affairs (Liechtenstein's ministry responsible for healthcare) does not have its own website, but does have a section on the central government website (Regierung.li), where it has regularly shared press releases relating to the COVID-19 pandemic, but there is no evidence that it used this website to share information on health concerns prior to the outbreak. [1, 2] The Ministry of Social Affairs also has a page on Facebook, but this has not been updated since 2016. [3] The government also runs a website dedicated to COVID-19 (hebensorg.li), which contains up-to-date information on the situation, as well as guidelines on preventative measures and what to do if infected. [4] The Office of Public Health does not have its own website or any social media presence, but does have a section on the website of the State Administration (Llv.li), which contains some information related to COVID-19, but no evidence of use to share information on health concerns prior to the outbreak. [5]

[1] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Press releases." ("Ministerium für Gesellschaft. Medienmitteilungen.") [<https://www.regierung.li/ministerien/ministerium-fuer-gesellschaft/medienmitteilungen/>]. Accessed 18 November 2020.

[2] Government of the Principality of Liechtenstein. "Ministry of Social Affairs. Current information on coronavirus." ("Ministerium für Gesellschaft. Aktuelle Informationen zum Coronavirus.") [<https://www.regierung.li/coronavirus>]. Accessed 18 November 2020.

[3] Ministry of Social Affairs of the Principality of Liechtenstein. "Ministry of Social Affairs of the Principality of Liechtenstein." ("Ministerium für Gesellschaft des Fürstentums Liechtenstein.") Facebook. [<https://www.facebook.com/Ministerium-f%C3%BCr-Gesellschaft-des-F%C3%BCrstentums-Liechtenstein-1214040021943719/>]. Accessed 18 November 2020.

[4] Government of the Principality of Liechtenstein. "Take care." ("Heben Sorg.") [<https://hebensorg.li/>]. Accessed 18 November 2020.

[5] State Administration of the Principality of Liechtenstein. "Office of Public Health." ("Amt für Gesundheit.") [<https://www.llv.li/inhalt/1908/amtsstellen/amt-fur-gesundheit>]. Accessed 18 November 2020.

3.5.2b

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

No = 1, Yes = 0

Current Year Score: 1

There is no evidence that any of Liechtenstein's senior leaders have shared misinformation or disinformation on infectious diseases in the past two years. There is no evidence of this on any of Liechtenstein's main news websites, including Liechtensteiner Vaterland, Volksblatt and Lie Zeit. [1, 2, 3] In particular, in August 2020 Liechtensteiner Vaterland published an article about myths surrounding COVID-19, and it did not mention the country's leaders having propagated any of them. [4]

[1] Liechtensteiner Vaterland. [<https://www.vaterland.li/>]. Accessed 3 December 2020.

[2] Volksblatt. [<https://www.volksblatt.li/>]. Accessed 3 December 2020.

[3] Lie Zeit. [<https://www.lie-zeit.li/>]. Accessed 3 December 2020.

[4] Liechtensteiner Vaterland. 16 August 2020. "These myths are spreading about the coronavirus." ("Diese Mythen verbreiten sich zum Coronavirus.") [<https://www.vaterland.li/liechtenstein/gesellschaft/liewo-aktuell/thema/diese-mythen-verbreiten-sich-zum-coronavirus;art670,426834>].

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet

Input number

Current Year Score: 98.1

2019

International Telecommunication Union (ITU)

3.6.2 Mobile subscribers

3.6.2a

Mobile-cellular telephone subscriptions per 100 inhabitants

Input number

Current Year Score: 127.06

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: 2.06

2018-2019

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: 3.96

2018-2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0, No = 1

Current Year Score: 0

In the past year, Liechtenstein has issued restrictions on the export of medical goods due to an infectious disease outbreak. On 26 March 2020, in response to the COVID-19 pandemic, Liechtenstein introduced a temporary requirement to obtain special authorization to export personal protective equipment (including goggles, masks, face shields, gloves and overalls) to any country except Switzerland. [1] Exports to Norway, Iceland, Britain, the Faroe Islands, Andorra, San Marino, the Vatican City and member states of the European Union were exempt from this, as long as the countries and territories in question did not introduce restrictions on exports of personal protective equipment to Liechtenstein. [1] On 12 May the requirement was extended to propofol, rocuronium bromide and atracurium besilate. [2] The restrictions were lifted on 25 June 2020. [3, 4]

[1] Princely Government of Liechtenstein. 26 March 2020. "Ordinance on the Amendment of the Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung betreffend die Abänderung der Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/chrono/2020114000>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 12 May 2020. "Ordinance on the Amendment of the Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung betreffend die Abänderung der Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/chrono/2020175000>]. Accessed 3 December 2020.

[3] Princely Government of Liechtenstein. 13 March 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020094000>]. Accessed 3 December 2020.

[4] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 3 December 2020.

3.7.1b

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

Yes = 0 , No = 1

Current Year Score: 1

In the past year, there is no evidence that Liechtenstein has issued any restrictions on the export or import of non-medical goods due to an infectious disease outbreak. There is no such evidence on the websites of the government or the State Administration. [1, 2] No such restrictions are included in Liechtenstein's 2020 Ordinances on Measures to Combat the Coronavirus. [3, 4]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 3 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 3 December 2020.

[3] Princely Government of Liechtenstein. 13 March 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020094000>]. Accessed 3 December 2020.

[4] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 3 December 2020.

3.7.2 Travel restrictions

3.7.2a

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

Yes = 0, No = 1

Current Year Score: 0

In the past year, Liechtenstein has implemented a ban, without international or bilateral support, on travelers arriving from specific countries due to an infectious disease outbreak. On 13 March 2020 Liechtenstein issued its first Ordinance on Measures to Combat the Coronavirus, which in its initial form banned entry into Liechtenstein for anyone coming from Italy, except citizens or residents of Liechtenstein or Switzerland. [1] The list of countries to which the ban applied was periodically updated to include other countries in addition to Italy, and on 15 June 2020 the exception to the ban was extended to all people entitled to free movement. [1] On 25 June 2020 Liechtenstein replaced the aforementioned ordinance with a new one, bearing the same name, which states in its first article that on issues that the ordinance does not make any provisions, certain Swiss ordinances are applicable. [2] One of these Swiss ordinances is Ordinance 3 on Measures to Combat the Coronavirus, which was adopted on 19 June 2020. [2, 3] Article 4 of this ordinance forbids entry into the country to any foreign citizen from a designated "risk country" or "risk region", except for people entitled to free movement under the 1999 Agreement between Switzerland and the European Community on Free Movement or the 1960 Agreement on the Establishment of the European Free Trade Association. [3] Risk countries and risk regions are named in Annex 1; as of November 2020, this covers all countries outside the Schengen area, with 17 exceptions. [3]

[1] Princely Government of Liechtenstein. 13 March 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020094000>]. Accessed 3 December 2020.

[2] Princely Government of Liechtenstein. 25 June 2020. "Ordinance on Measures to Combat the Coronavirus (COVID-19)." ("Verordnung über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.gesetze.li/konso/2020206000>]. Accessed 11 November 2020.

[3] Swiss Federal Council. 19 June 2020. "Ordinance 3 on Measures to Combat the Coronavirus (Covid-19)." ("Verordnung 3 über Massnahmen zur Bekämpfung des Coronavirus (Covid-19).") [<https://www.admin.ch/opc/de/classified-compilation/20201773/index.html>]. Accessed 11 November 2020.

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

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

4.1.1 Available human resources for the broader healthcare system

4.1.1a

Doctors per 100,000 people

Input number

Current Year Score: 300

2011

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people

Input number

Current Year Score: 1210

2011

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

Liechtenstein has in place a health workforce strategy that identifies and addresses potential shortcomings, and it has been updated within the past 5 years. The current version of Liechtenstein's Healthcare Strategy (published June 2020) has a chapter dedicated to workforce. [1] This chapter reports growing demand for healthcare services due to demographic and epidemiological factors, and notes that this raises the threat of shortages of general practitioners, carers, and other healthcare professionals. [1] It also notes changes in the organization of healthcare are increasing the need for interdisciplinary professionals to co-ordinate between different specialists. [1] The chapter goes on to describe two strategic foci: establishing the position of "advanced practice nurse", and expanding the responsibilities of pharmacists. [1] In addition, in its report for 2019 the Office for Statistics reports that 1,155 people were employed in healthcare in the country, of whom 659 (57%) were resident in Liechtenstein and 496 (43%) commuted in from Austria or Switzerland. [2]

[1] Ministry of Social Affairs of the Principality of Liechtenstein. June 2020. "Healthcare in the Principality of Liechtenstein. Current overview, strategic foci and measures." ("Das Gesundheitswesen im Fürstentum Liechtenstein. Aktuelle Übersicht, strategische Schwerpunkte und Massnahmen.") [<https://www.regierung.li/media/attachments/20200217-FL-Gesundheitspolitische-Gesamtplanung-Update.pdf?t=637273142769611572>]. Accessed 9 December 2020.

[2] Office for Statistics of the Principality of Liechtenstein. 14 September 2020. "Employment Statistics 2019." ("Beschäftigungsstatistik 2019.") [https://www.llv.li/files/as/i2019_beschaeftigungsstatistik.pdf]. Accessed 9 December 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 505.48

2009-2015

WHO/World Bank; national sources

4.1.2b

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

Yes = 1, No = 0

Current Year Score: 0

There is no public evidence of Liechtenstein having a biocontainment unit or other patient isolation unit to isolate patients with highly communicable diseases. Liechtenstein only has one hospital, the Liechtenstein National Hospital, which has a mere 35 beds, and there is no evidence that it has capacity to isolate patients with highly communicable diseases. [1, 2] However, due to Liechtenstein's limited domestic capacity, the government concludes contracts with healthcare institutions abroad, so that they provide care to people insured in Liechtenstein. [3] As of October 2020, Liechtenstein has such contracts with 20 institutions in Switzerland and 4 in Austria. [4] This includes Innsbruck University Clinic, which has an isolation unit for patients with highly communicable diseases. [4, 5] The Liechtenstein Pandemic Plan (adopted 2006) states that suspected human cases of avian influenza are to be hospitalized at St. Gallen Canton Hospital or East Switzerland Children's Hospital, both of which are in Switzerland. [6] There is no further relevant information on the websites of Liechtenstein's government or state administration. [7, 8]

[1] Liechtenstein National Hospital. "About us." ("Über uns.") [<https://www.landesspital.li/991/uber-uns/>]. Accessed 9 December 2020.

[2] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 9 December 2020.

[3] State Administration of the Principality of Liechtenstein. "Contract hospitals and license holders." ("Vertragsspitaler und Bewilligungsinhaber.") [<https://www.llv.li/inhalt/1233/amtstellen/vertragsspitaler-und-bewilligungsinhaber>]. Accessed 9 December 2020.

[4] Office of Public Health of the Principality of Liechtenstein. October 2020. "List of contract hospitals of the Principality of Liechtenstein." ("Liste der Vertragsspitaler des Fürstentums Liechtenstein.") [<https://www.llv.li/files/ag/vertragsspitaler-01102020.pdf>]. Accessed 9 December 2020.

[5] Wiener Zeitung. 19 June 2019. "Innsbruck clinic practises ebola emergency." ("Innsbrucker Klinik übte Ebola-Notfall.")

[<https://www.wienerzeitung.at/nachrichten/chronik/oesterreich/2014731-Innsbrucker-Klinik-uebte-Ebola-Notfall.html>]. Accessed 7 August 2020.

[6] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 9 December 2020.

[7] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.

[8] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.

4.1.2c

Does the country meet one of the following criteria?

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

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

Yes = 1, No = 0

Current Year Score: 0

There is no evidence that Liechtenstein has, in the past two years, demonstrated capacity to expand isolation capacity in response to an infectious disease outbreak, or developed, updated or tested a plan to expand isolation capacity. There is no such evidence on the websites of Liechtenstein's government or state administration. [1, 2] Liechtenstein only has one hospital, the Liechtenstein National Hospital, which has just 35 beds, and there is no evidence that it has capacity to isolate patients with highly communicable diseases. [3, 4] Due to Liechtenstein's limited domestic capacity, the government concludes contracts with healthcare institutions abroad, so that they provide care to people insured in Liechtenstein. [5] As of October 2020, Liechtenstein has such contracts with 20 institutions in Switzerland and 4 in Austria. [6] This includes Innsbruck University Clinic, in Austria, which has an isolation unit for patients with highly communicable diseases. [6, 7] The Liechtenstein Pandemic Plan (adopted 2006) states that suspected human cases of avian influenza are to be hospitalized at St. Gallen Canton Hospital or East Switzerland Children's Hospital, both of which are in Switzerland. [8] During the COVID-19 pandemic, patients requiring intensive care have all been treated in Switzerland, chiefly at Grabs Hospital and Grisons Canton Hospital, on the basis of previously existing agreements. [9]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.

[3] Liechtenstein National Hospital. "About us." ("Über uns.") [<https://www.landesspital.li/991/uber-uns/>]. Accessed 9 December 2020.

[4] Liechtenstein National Hospital. [<https://www.landesspital.li>]. Accessed 9 December 2020.

[5] State Administration of the Principality of Liechtenstein. "Contract hospitals and license holders." ("Vertragsspitaler und Bewilligungsinhaber.") [<https://www.llv.li/inhalt/1233/amtsstellen/vertragsspitaler-und-bewilligungsinhaber>]. Accessed 9 December 2020.

[6] Office of Public Health of the Principality of Liechtenstein. October 2020. "List of contract hospitals of the Principality of Liechtenstein." ("Liste der Vertragsspitaler des Fürstentums Liechtenstein.") [<https://www.llv.li/files/ag/vertragsspitaler-01102020.pdf>]. Accessed 9 December 2020.

[7] Wiener Zeitung. 19 June 2019. "Innsbruck clinic practises ebola emergency." ("Innsbrucker Klinik übte Ebola-Notfall.") [<https://www.wienerzeitung.at/nachrichten/chronik/oesterreich/2014731-Innsbrucker-Klinik-uebte-Ebola-Notfall.html>]. Accessed 7 August 2020.

[8] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed

9 December 2020.

[9] Odilia Hiller. 8 January 2021. "The Principality of Liechtenstein reports a corona-record: Why it nonetheless isn't on Switzerland's quarantine list." (".") Aargauer Zeitung. [<https://www.aargauerzeitung.ch/schweiz/das-furstentum-liechtenstein-meldet-corona-rekorde-warum-es-trotzdem-nicht-auf-die-quarantaneliste-der-schweiz-kommt-ld.2083509>]. Accessed 21 April 2021.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

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

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

Current Year Score: 0

There is insufficient public evidence that Liechtenstein has a procurement system that can be used for the acquisition of laboratory supplies and medical supplies for routine needs. Public procurement is governed by the Law on Public Procurement (adopted 1998, last amended 2018) and the Ordinance on Public Procurement (adopted 1998, last amended 2020). [1, 2] Article 1 of the Law on Public Procurement states that it governs the award of all public contracts for construction, supply and services. [1] Article 2 of this law states that public contracts can be awarded by "the country of Liechtenstein" and by "bodies governed by public law", but it does not refer to ministries. [1] The website of Liechtenstein's state administration explains that "the country of Liechtenstein" in this context means "the government and all offices of the state administration", while "bodies governed by public law" covers, inter alia, Liechtenstein National Hospital. [3] The website lists the main procurers encompassed under "the country of Liechtenstein", but does not name the Ministry of Social Affairs (the ministry responsible for healthcare), the Office of Public Health, or the Food and Veterinary Office (which is responsible for animal health), though it does name the Environmental Office (which is responsible for agriculture). [4] The Law on Public Procurement does not specifically refer to medical supplies or laboratory supplies, but articles 6b, 17a and 49a confirm that procurement can be made for contracts related to health. [1] Article 5 lists types of procurement to which the law does not apply, and does not mention medical supplies or laboratory supplies here. [1] The Ordinance on Public Procurement makes no reference to medical supplies or laboratory supplies. [2] The website on which public tenders are listed does not currently list any tenders for the acquisition of medical supplies or laboratory supplies. [5] The state administration's public statistics on past procurement do not mention what was procured or by whom. [6] There is no further relevant information on the websites of the state administration or the government. [7, 8] In March 2020 the Liechtenstein Medical Association described the system for the procurement of medical supplies during the COVID-19 pandemic as "confusing and fragmented", though noted that it was improving. [9]

[1] Princely Government of Liechtenstein. 19 June 1998. "Law on Public Procurement." ("Gesetz über das Öffentliche Auftragswesen.") [<https://www.gesetze.li/konso/1998.135>]. Accessed 10 December 2020.

[2] Princely Government of Liechtenstein. 3 November 1998. "Ordinance on Public Procurement." ("Verordnung über das Öffentliche Auftragswesen.") [<https://www.gesetze.li/konso/1998.189>]. Accessed 10 December 2020.

[3] State Administration of Liechtenstein. "Contractors country, municipalities, etc." ("Auftraggeber Land, Gemeinden etc.") [<https://www.llv.li/inhalt/11045/amtstellen/auftraggeber-land-gemeinden-etc>]. Accessed 10 December 2020.

[4] State Administration of Liechtenstein. "Who are the procurers 'country'?" ("Wer sind Auftraggeber 'Land'?")

[<https://www.llv.li/inhalt/1800/amtsstellen/wer-sind-auftraggeber-land>]. Accessed 10 December 2020.

[5] Kundmachungen.li. "Public tenders." ("Öffentliche Ausschreibungen.")

[<https://kundmachungen.li/%C3%96ffentlicheAusschreibungen.aspx>]. Accessed 10 December 2020.

[6] State Administration of Liechtenstein. "Statistics on public procurement. 2019." ("Statistik öffentliche Auftragsvergaben. 2019.") [<https://www.llv.li/inhalt/11194/amtsstellen/jahr-2019>]. Accessed 10 December 2020.

[7] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 10 December 2020.

[8] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 10 December 2020.

[9] Liechtensteiner Vaterland. 27 March 2020. "Sufficient protective equipment in Liechtenstein." ("Genügend Schutzmaterial in Liechtenstein.") [<https://www.vaterland.li/liechtenstein/gesellschaft/vermishtes/genuegend-schutzmaterial-beschafft;art171,414991>]. Accessed 10 December 2020.

4.2.2 Stockpiling for emergencies

4.2.2a

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

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

Current Year Score: 2

Liechtenstein has a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. The Swiss Federal Council's Ordinance on the Compulsory Storage of Pharmaceuticals (adopted 2017, last amended 2019) and the Swiss Federal Department of Economic Affairs, Education and Research's Ordinance on the Compulsory Storage of Pharmaceuticals (adopted 2019, last amended 2019), both of which are fully applicable in Liechtenstein, require all producers and importers of certain listed medical countermeasures (MCM) to maintain reserves of these MCM. [1, 2, 3] MCM named include antibiotics, antivirals, analgesics, opiates and vaccines. [1, 2] Section 7.6.1 of the Liechtenstein Pandemic Plan (published 2006) confirms that in Liechtenstein producers maintain such reserves of antivirals, and that the Office of Public Health, the Food and Veterinary Office and the police are jointly responsible for maintaining a central stockpile. [4] Section 7.6.4 of this plan states that, in addition to the aforementioned reserves maintained by producers, there are additional stockpiles of antivirals, which are intended for prophylactic use for police officers and for the treatment of Liechtenstein's diplomats abroad, as well as for wider use if distribution from producers' reserves experiences delays. [4] Section 7.6.3 reports that, in total, Liechtenstein maintains sufficient stocks of antivirals to treat 25% of the resident population. [4] Furthermore, in March and September 2020, news articles referred to the existence of a "pandemic stockpile" ("Pandemielager") maintained by the Office for Civil Protection at the Liechtenstein National Hospital, and intended for use by the country's healthcare workers. [5, 6] In the March article, the stockpile is described as containing protective masks and disinfectant. [5] The September article does not mention the stockpile's contents. [6] Neither article mentions whether the stockpile was created in response to the COVID-19 pandemic or had existed before. [5, 6] The World Health Organization's Joint External Evaluation of IHR Core Capacities in Switzerland and Liechtenstein, conducted in 2017, notes that Liechtenstein does have emergency stockpiles, but does not specify what they include, and reports that the country's stockpiles contain expired materials. [7]

[1] Swiss Federal Council. 10 May 2017. "Ordinance on the Compulsory Storage of Pharmaceuticals." ("Verordnung über die Pflichtlagerhaltung von Arzneimitteln.") [<https://www.admin.ch/opc/de/classified-compilation/20170057/index.html>]. Accessed 10 December 2020.

[2] Federal Department of Economic Affairs, Education and Research of the Swiss Confederation. 20 May 2019. "Ordinance on the Compulsory Storage of Pharmaceuticals." ("Verordnung über die Pflichtlagerhaltung von Arzneimitteln.") [<https://www.admin.ch/opc/de/classified-compilation/20190262/index.html>]. Accessed 10 December 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 10 December 2020.

[4] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 10 December 2020.

[5] Liechtensteiner Vaterland. 27 March 2020. "Sufficient protective equipment in Liechtenstein." ("Genügend Schutzmaterial in Liechtenstein.") [<https://www.vaterland.li/liechtenstein/gesellschaft/vermishtes/genuegend-schutzmaterial-beschafft;art171,414991>]. Accessed 10 December 2020.

[6] Liechtensteiner Vaterland. 25 September 2020. "Government calls for more caution." ("Regierung appelliert zu mehr Vorsicht.") [<https://www.vaterland.li/liechtenstein/gesellschaft/vermishtes/regierung-appelliert-zu-mehr-vorsicht;art171,430212>]. Accessed 10 December 2020.

[7] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 11 January 2021.

4.2.2b

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

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

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a stockpile of laboratory supplies for national use during a public health emergency. There is no such evidence on the websites of Liechtenstein's government or state administration. [1, 2] In October 2020, Labormedizinisches Zentrum Dr Risch ("Dr Risch Medical Laboratory Center"), the private laboratory tasked with conducting COVID-19 tests in Liechtenstein, reported that supplies of reagents were running low. [3] The World Health Organization's Joint External Evaluation (JEE) of IHR Core Capacities in Switzerland and Liechtenstein, conducted in 2017, notes that Liechtenstein does have emergency stockpiles, but does not specify what they include. [4] The JEE does, however, state that Liechtenstein needs to improve its stockpiling of reagents for sample preparation and shipment in extraordinary events such as pandemics. [4]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 10 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 10 December 2020.

[3] Elias Quaderer. 17 October 2020. "Risch Laboratory: Material for coronavirus tests is getting scarcer." ("Labor Risch: Material für Coronatests wird knapper.") Liechtensteiner Vaterland. [<https://www.vaterland.li/liechtenstein/gesellschaft/labor-risch-material-fuer-coronatests-wird-knapper;art13103,432290>]. Accessed 10 December 2020.

[4] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 11 January 2021.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. The Swiss Federal Council's Ordinance on the Compulsory Storage of Pharmaceuticals (adopted 2017, last amended 2019) and the Swiss Federal Department of Economic Affairs, Education and Research's (BWL's) Ordinance on the Compulsory Storage of Pharmaceuticals (adopted 2019, last amended 2019), both of which are fully applicable in Liechtenstein, require all producers and importers of certain listed medical countermeasures (MCM) to maintain reserves of these MCM, and charge a private company called Helvecura with overseeing these reserves. [1, 2, 3] Article 3 of the 2017 ordinance states that those maintaining these reserves must "periodically" inform Helvecura about the reserves' contents, while article 6 states that Helvecura is responsible for reviewing the reserves. [1] However, neither ordinance explicitly requires annual reviews. [1, 2] The BWL's 2014 directive to Helvecura states in article 7.1 that the BWL is responsible for monitoring and checking these reserves, together with Helvecura, but does not mention the frequency with which reviews should be conducted. [4] The Swiss Federal Council's Ordinance on the Reporting Office for Essential Human Pharmaceuticals (adopted 2015, last amended 2020), which also applies in Liechtenstein, establishes a Reporting Office, to which those maintaining reserves of certain essential MCM must report any actual or potential bottlenecks or interruptions to their supply. [5] The ordinance requires these reports to be submitted within five working days of becoming aware of the bottleneck or interruption. [5] However, the ordinance does not mention annual reviews. [5] The Liechtenstein Pandemic Plan (published 2006) confirms that in Liechtenstein producers maintain such reserves of antivirals, and that the Office of Public Health, the Food and Veterinary Office and the police are jointly responsible for maintaining a central stockpile. [6] Section 7.6.4 of this plan states that, in addition to the aforementioned reserves maintained by producers, there are additional stockpiles of antivirals, which are intended for prophylactic use for police officers and for the treatment of Liechtenstein's diplomats abroad, as well as for wider use if distribution from producers' reserves experiences delays. [6] However, the Liechtenstein Pandemic Plan does not mention reviews of stocks. [6] There is no evidence of annual reviews on the websites of Helvecura, the BWL, the Swiss Federal Office of Public Health, Liechtenstein's government, or Liechtenstein's state administration. [7, 8, 9, 10, 11]

[1] Swiss Federal Council. 10 May 2017. "Ordinance on the Compulsory Storage of Pharmaceuticals." ("Verordnung über die Pflichtlagerhaltung von Arzneimitteln.") [<https://www.admin.ch/opc/de/classified-compilation/20170057/index.html>]. Accessed 21 April 2021.

[2] Federal Department of Economic Affairs, Education and Research of the Swiss Confederation. 20 May 2019. "Ordinance on the Compulsory Storage of Pharmaceuticals." ("Verordnung über die Pflichtlagerhaltung von Arzneimitteln.") [<https://www.admin.ch/opc/de/classified-compilation/20190262/index.html>]. Accessed 21 April 2021.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 10 December 2020.

[4] Federal Department of Economic Affairs, Education and Research of the Swiss Confederation. 25 June 2014. "Directives." ("Weisungen.") [http://helvecura.ch/download.php?id=31_0e5f2a22]. Accessed 21 April 2021.

[5] Swiss Federal Council. 12 August 2015. "Ordinance on the Reporting Office for Essential Human Pharmaceuticals." ("Verordnung über die Meldestelle für lebenswichtige Humanarzneimittel.") [<https://www.fedlex.admin.ch/eli/cc/2015/544/de>]. Accessed 21 April 2021.

[6] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-pandemieplan_september_2006.pdf]. Accessed 10 December 2020.

[7] Helvecura. [<http://helvecura.ch/>]. Accessed 21 April 2021.

[8] Federal Department of Economic Affairs, Education and Research of the Swiss Confederation.

[https://www.wbf.admin.ch/wbf/de/home.html]. Accessed 21 April 2021.

[9] Federal Office of Public Health of the Swiss Confederation. [https://www.bag.admin.ch/bag/en/home.html]. Accessed 21 April 2021.

[10] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 21 April 2021.

[11] State Administration of the Principality of Liechtenstein. [https://www.llv.li/]. Accessed 21 April 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

Liechtenstein has an agreement to procure medical supplies for national use during a public health emergency, but there is no evidence of plans or agreements to manufacture them. Since 9 April 2020, Liechtenstein has been part of the European Union Joint Procurement Agreement for Medical Countermeasures, which ensures that participating states have access to medical countermeasures from abroad if necessary when a serious cross-border threat to health is registered. [1, 2] The agreement aims to "secure more equitable access to specific medical countermeasures and improved security of supply", as well as balancing prices for participating countries. [1] It is also designed to ensure acquisition of vaccines, antivirals and medical countermeasures for serious cross-border threats to health [1]. There is no evidence of plans or agreements to plans or agreements to leverage domestic manufacturing capacity to produce medical supplies for national use during a public health emergency on the websites of Liechtenstein's government or state administration. [3, 4] During the COVID-19 pandemic, Liechtenstein has taken various steps to procure and produce PPE, but there is no evidence that this has been part of a formal plan. [5]

[1] European Commission. "Health security and infectious diseases. Preparedness and response planning." [https://ec.europa.eu/health/preparedness_response/joint_procurement_en]. Accessed 10 December 2020.

[2] European Commission. "Signing ceremonies for Joint Procurement Agreement." [https://ec.europa.eu/health/preparedness_response/joint_procurement/jpa_signature_en]. Accessed 10 December 2020.

[3] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 10 December 2020.

[4] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 10 December 2020.

[5] Liechtensteiner Vaterland. 27 March 2020. "Sufficient protective equipment in Liechtenstein." ("Genügend Schutzmaterial in Liechtenstein.") [https://www.vaterland.li/liechtenstein/gesellschaft/vermischtes/genuegend-schutzmaterial-beschafft;art171,414991]. Accessed 10 December 2020.

4.2.3b

Does the country meet one of the following criteria?

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

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

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

Current Year Score: 0

There is no evidence of plans or agreements to procure or manufacture laboratory supplies for national use during a public health emergency in Liechtenstein. There is no evidence of such plans on the websites of Liechtenstein's government or state administration. [1, 2] In October 2020, Labormedizinisches Zentrum Dr Risch ("Dr Risch Medical Laboratory Center"), the private laboratory tasked with conducting COVID-19 tests in Liechtenstein, reported that supplies of reagents were running low. [3]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 10 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 10 December 2020.

[3] Elias Quaderer. 17 October 2020. "Risch Laboratory: Material for coronavirus tests is getting scarcer." ("Labor Risch: Material für Coronatests wird knapper.") Liechtensteiner Vaterland.

[<https://www.vaterland.li/liechtenstein/gesellschaft/labor-risch-material-fuer-coronatests-wird-knapper;art13103,432290>]. Accessed 10 December 2020.

4.3 MEDICAL COUNTERMEASURES AND PERSONNEL DEPLOYMENT

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

4.3.1a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a plan for dispensing medical countermeasures (MCM) during a public health emergency. The Liechtenstein Pandemic Plan (adopted 2006), which governs response to influenza pandemics, only briefly addresses distributing and dispensing MCM. [1] In section 7.6.3, it states that antivirals will only be dispensed to sick people by physicians recognized by the Liechtenstein Medical Association, after diagnosis. It further states that, during an influenza pandemic, treatment and examination of people with influenza will be carried out by designated "pandemic physicians". Section 7.6.2 states that antivirals will also be provided to all employees of hospitals and care homes, with this carried out by Switzerland's Federal Office for National Economic Supply and the Swiss Military Pharmacy. [1] The World Health Organization's Joint External Evaluation of IHR Core Capacities in Switzerland and Liechtenstein, conducted in 2017, notes that Liechtenstein's Office of Civil Protection is responsible for tracking and distributing MCM during emergencies, but it does not mention responsibility for dispensing MCM. [2] There is no further relevant evidence on the websites of Liechtenstein's government or state administration. [3, 4]

[1] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.

[2] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 11 January 2021.

[3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 11 January 2021.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 11 January 2021.

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

4.3.2a

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

Yes = 1, No = 0

Current Year Score: 1

There is evidence of a public plan in place to receive health personnel from other countries to respond to a public health emergency in Liechtenstein. According to the Joint External Evaluation of the IHR core capabilities of the Swiss Confederation and the Principality of Liechtenstein conducted in 2017, in many matters related to health Liechtenstein functions as if it were a Swiss canton, and due to its limited domestic capabilities Liechtenstein routinely depends on healthcare personnel from neighbouring Switzerland and Austria. [1] Liechtenstein has agreements with both countries to help facilitate the arrival of health personnel during emergencies. [2,3] The agreement with Austria, for example, covers emergencies more broadly and includes provision of medical aid. Among other procedures to facilitate response logistics, the agreement allows for visa free travel by the medical teams and facilitation for the import and export of emergency supplies needed by response teams for the sake of emergency response. [3] No further evidence of a plan or other document governing the receipt of health personnel from other countries more broadly is available on the websites of Liechtenstein's government and state administration. [4, 5]

[1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

[2] Swiss Confederation and Principality of Liechtenstein. 2006. "Agreement on mutual assistance with disasters or serious accidents." ("Abkomme über die gegenseitige Hilfeleistung bei Katastrophen oder schweren Unglücksfällen.") [<https://www.admin.ch/opc/de/classified-compilation/20040755/index.html>]. Accessed 31 October 2020.

[3] National Council of Austria. 1995. "Agreement between the Republic of Austria and the Principality of Liechtenstein on mutual assistance with disasters or serious accidents." ("Abkommen zwischen der Republik Österreich und dem Fürstentum Liechtenstein über die gegenseitige Hilfeleistung bei Katastrophen oder schweren Unglücksfällen.") [<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010922>]. Accessed 8 August 2020.

[4] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 10 December 2020.

[5] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 10 December 2020.

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: 3

2020

World Policy Analysis Center

4.4.1b

Access to skilled birth attendants (% of population)

Input number

Current Year Score: 99.15

1999-2018

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: 778.95

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 public evidence of any legislation, policy or public statement committing to provide prioritized healthcare services to healthcare workers who become sick as a result of responding to a public health emergency. The Liechtenstein Pandemic

Plan (adopted 2006) provides for the prophylactic provision of antivirals to employees of hospitals and care homes, but it does not mention prioritized healthcare for healthcare workers who become sick. [1] There are no relevant provisions in the Federal Law on Combatting Communicable Diseases (adopted 2012, last amended June 2020), the Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), or the Health Law (adopted 2007, last amended 2018). [2, 3, 4] There is no relevant information on the websites of Liechtenstein's government or state administration. [5, 6]

[1] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.

[2] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 10 December 2020.

[3] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 10 December 2020.

[4] Princely Government of Liechtenstein. 13 December 2007. "Health Law." ("Gesundheitsgesetz.") [<https://www.gesetze.li/konso/2008030000>]. Accessed 10 December 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 10 December 2020.

[6] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 10 December 2020.

4.5 COMMUNICATIONS WITH HEALTHCARE WORKERS DURING A PUBLIC HEALTH EMERGENCY

4.5.1 Communication with healthcare workers

4.5.1a

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a system for public health officials and healthcare workers to communicate during a public health emergency. Article 25 of the Law on the Protection of the Population states that the government will establish systems for communicating during crises, but the law provides no further details. [1] The Liechtenstein Pandemic Plan (published 2006), which outlines response to influenza pandemics, does not include a risk communication plan, but it states that Liechtenstein will develop one based on the Swiss communication concept. [2] There is no evidence of a relevant risk communication plan on the websites of Liechtenstein's government or state administration. [3, 4] According to the World Health Organization's Joint External Evaluation of Switzerland and Liechtenstein, which was conducted in 2017 and published in 2018, Liechtenstein's response to public health emergencies follows Swiss structures, and makes use of Swiss emergency communication capacity. [5] Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), which is fully applicable in Liechtenstein and which outlines response to public health emergencies, states in article 9 that the Swiss Federal Ministry of Public Health (FOPH) is responsible for providing information about infectious diseases (and recommendations on combatting them) to state bodies, and in article 10 that the FOPH is responsible for information exchange with the relevant federal and cantonal bodies. [6, 7, 8] However, the law provides no further details, and there is no mention of communication in Switzerland's Ordinance on

Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), which is also fully applicable in Liechtenstein. [6, 7, 8]

- [1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [<https://www.gesetze.li/konso/2007139000>]. Accessed 9 December 2020.
- [2] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.
- [3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 9 December 2020.
- [4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 9 December 2020.
- [5] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [6] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 9 December 2020.
- [7] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 18 November 2020.
- [8] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 3 December 2020.

4.5.1b

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

Yes = 1, No = 0

Current Year Score: 0

There is insufficient evidence that Liechtenstein has a system for public health officials and healthcare workers to communicate during a public health emergency that encompasses healthcare workers in both the public and private sectors. Article 25 of the Law on the Protection of the Population states that the government will establish systems for communicating during crises, but the law provides no further details. [1] The Liechtenstein Pandemic Plan (published 2006), which outlines response to influenza pandemics, does not include a risk communication plan, but it states that Liechtenstein will develop one based on the Swiss communication concept. [2] There is no evidence of a relevant risk communication plan on the websites of Liechtenstein's government or state administration. [3, 4] According to the World Health Organization's Joint External Evaluation of Switzerland and Liechtenstein, which was conducted in 2017 and published in 2018, Liechtenstein's response to public health emergencies follows Swiss structures, and makes use of Swiss emergency communication capacity. [5] Switzerland's Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020), which is fully applicable in Liechtenstein and which outlines response to public health emergencies, states in article 9 that the Swiss Federal Ministry of Public Health (FOPH) is responsible for providing information about infectious diseases (and recommendations on combatting them) to state bodies, and in article 10 that the FOPH is responsible for information exchange with the relevant federal and cantonal bodies. [6, 7, 8] However, the law provides no further details, and there is no mention of communication in Switzerland's Ordinance on Combatting Communicable Human

Diseases (adopted 2015, last amended March 2019), which is also fully applicable in Liechtenstein. [6, 7, 8]

- [1] Princely Government of Liechtenstein. 26 April 2007. "Law on the Protection of the Population. ("Gesetz über den Schutz der Bevölkerung.") [https://www.gesetze.li/konso/2007139000]. Accessed 9 December 2020.
- [2] Office of Public Health of the Principality of Liechtenstein. September 2006. "Liechtenstein Pandemic Plan." ("Liechtensteiner Pandemieplan.") [https://www.llv.li/files/ag/pdf-llv-ag-fl_-_pandemieplan_september_2006.pdf]. Accessed 18 November 2020.
- [3] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 9 December 2020.
- [4] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 9 December 2020.
- [5] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y]. Accessed 22 October 2020.
- [6] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [https://www.admin.ch/opc/de/classified-compilation/20071012/index.html]. Accessed 9 December 2020.
- [7] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [https://www.gesetze.li/konso/2020285000]. Accessed 18 November 2020.
- [8] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)." ("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienvorordnung).") [https://www.admin.ch/opc/de/classified-compilation/20133212/index.html]. Accessed 3 December 2020.

4.6 INFECTION CONTROL PRACTICES AND AVAILABILITY OF EQUIPMENT

4.6.1 Healthcare associated infection (HCAI) prevention and control programs

4.6.1a

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

Yes = 1, No = 0

Current Year Score: 1

Healthcare-associated infections (HCAIs) are being tracked and monitored in Liechtenstein. According to the Joint External Evaluation of IHR Capabilities in the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, Liechtenstein is treated as an additional Swiss canton with regard to tracking and monitoring HCAIs. [1] The 2017 annual report on the implementation of Switzerland's 2016 National Strategy for the Monitoring, Prevention and Control of Healthcare-Associated Infections (also known as the "NOSO Strategy") confirms that Swiss monitoring of HCAIs covers Liechtenstein's hospital too. [2] Liechtenstein National Hospital is included publications on Switzerland's HCAI monitoring. [3, 4] The NOSO Strategy (which does not itself mention Liechtenstein) lays out a strategy for the establishment of a system to systematically monitor and track HCAIs in inpatient care facilities throughout Switzerland, including hospitals and nursing homes. [5] The latest annual report on the strategy's implementation, published in May 2020, does not mention Liechtenstein, but states that 2019 saw the launch of a monitoring system throughout Swiss hospitals. [6]

- [1] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.
- [2] Federal Office of Public Health of the Swiss Confederation. May 2018. "NOSO Strategy Annual Report 2017." ("Strategie NOSO Jahresbericht 2019.") [<https://www.bag.admin.ch/dam/bag/de/dokumente/mt/i-und-i/noso/strategie-noso-jahresbericht-2017.pdf.download.pdf/strategie-noso-jahresbericht-2017-de.pdf>]. Accessed 10 December 2020.
- [3] National Center for Infection Control and National Association for Quality Development in Hospitals and Clinics. June 2020. "National Comparative Report. Program for the Surveillance of Post-Operative Wound Infections." ("Nationaler Vergleichsbericht Programm zur Überwachung postoperativer Wundinfektionen.") [https://www.swissnoso.ch/fileadmin/module/ssi_surveillance/Dokumente_D/9_Resultate/20200925_ANQakut_Wundinfektionen_Nationaler-Vergleichsbericht_2018-19_V1.1.pdf]. Accessed 10 December 2020.
- [4] National Center for Infection Control and University Hospital Geneva. 22 January 2018. "Point Prevalence Survey 2017 of healthcare-associated infections and antimicrobial use in Swiss acute care hospitals." [https://www.swissnoso.ch/fileadmin/swissnoso/Dokumente/5_Forschung_und_Entwicklung/2_Punktpraevaleanzstudie/ch_pps_2017_report_FINAL2.pdf]. Accessed 10 December 2020.
- [5] Swiss Federal Council. 2016. "National Strategy for the Monitoring, Prevention and Control of Healthcare-Associated Infections (NOSO Strategy)". [<http://www.bag.admin.ch/dam/bag/en/dokumente/mt/i-und-i/strategie-noso.pdf.download.pdf/strategie-noso-e.pdf>]. Accessed 10 December 2020.
- [6] Federal Office of Public Health. May 2020. "NOSO Strategy. Annual Report 2019." ("Strategie NOSO. Jahresbericht 2019.") [https://www.bag.admin.ch/dam/bag/de/dokumente/mt/i-und-i/noso/strategie-noso-jahresbericht-2019.pdf.download.pdf/Broschuere_Strategie_Noso_2019_de_200417.pdf]. Accessed 10 December 2020.

4.7 CAPACITY TO TEST AND APPROVE NEW MEDICAL COUNTERMEASURES

4.7.1 Regulatory process for conducting clinical trials of unregistered interventions

4.7.1a

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein has a legal requirement for ethical review before beginning a clinical trial. According to articles 45 and 51 of Switzerland's Federal Law on Research Involving Humans (adopted 2011, last amended January 2020), all research on humans requires authorization from the relevant ethics committee, which will issue authorization within 2 months of receiving an application, if the proposed study complies with the law's ethical, legal and scientific requirements, and in particular if there is sufficient protection of test subjects. [1] Ethical principles established by the law include: the primacy of the interests, health and wellbeing of individuals over the interests of science and society (article 4); research furthering understanding of human diseases, the human body or public health (article 5); non-discrimination (article 6); informed consent of subjects, which can be revoked at any time (articles 7â€“8, 16â€“18); non-commercialization (articles 9, 14); and risk minimization (articles 12, 15). In addition, article 10 includes general requirements for research to comply with regulations on scientific integrity, meet requirements for scientific quality, observe international best practices for research on humans, and be conducted by suitably qualified individuals. Furthermore, articles 21â€“24 introduce restrictions on research involving minors and adults who are incapable of judgement. [1] Switzerland's Ordinance on Clinical Trials in Human

Research (adopted 2013, last amended 2018) affirms that the requirements laid out in the Federal Law on Research Involving Humans apply to clinical trials, and also establishes more detailed requirements specific to clinical trials. [2] All of the aforementioned Swiss legislative provisions apply in Liechtenstein in relation to clinical trials involving medical countermeasures, transplant products and xenotransplantation. [3] Similar requirements are also contained in Liechtenstein's own legislation, namely in articles 8â€“10 of the Ordinance on Clinical Trials with Human Pharmaceuticals in the European Economic Area (adopted 2004, last amended 2013). [4] The Zurich Ethics Committee (Ethikkommission ZÃ¼rich) is the ethics committee responsible for Liechtenstein, as well as for the Swiss cantons of Zurich, Glarus, Grisons and Schaffhausen. [5, 6]

[1] Federal Assembly of the Swiss Confederation. 30 September 2011. "Federal Law on Research Involving Humans (Human Research Law)." ("Bundesgesetz über die Forschung am Menschen (Humanforschungsgesetz).")

[<https://www.admin.ch/opc/de/classified-compilation/20061313/index.html>]. Accessed 31 October 2020.

[2] Swiss Federal Council. 20 September 2013. "Ordinance on Clinical Trials in Human Research." ("Verordnung über klinische Versuche in der Humanforschung.") [<https://www.admin.ch/opc/de/classified-compilation/20121176/index.html>]. Accessed 31 October 2020.

[3] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 11 December 2020.

[4] Princely Government of Liechtenstein. 2 March 2004. "Ordinance on Clinical Trials with Human Pharmaceuticals in the European Economic Area." ("Verordnung über klinische Prüfungen mit Humanarzneimitteln im Europäischen Wirtschaftsraum.") [<https://www.gesetze.li/konso/2004073000>]. Accessed 11 December 2020.

[5] Swiss Association of Research Ethics Committees. "List of ethics committees in Switzerland." ("Verzeichnis der Ethikkommissionen Schweiz.") [<https://swissethics.ch/en/ethikkommissionen>]. Accessed 11 December 2020.

[6] Canton of Zurich. "Responsibility of the canton's ethics committee." ("Zuständigkeit der Kantonalen Ethikkommission.") [<https://www.zh.ch/de/gesundheit/ethik-humanforschung/zustaendigkeit-kantonale-ethikkommission.html>]. Accessed 11 December 2020.

4.7.1b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein has an expedited process for approving clinical trials for unregistered medical countermeasures (MCM) to treat ongoing epidemics. Article 30 of Switzerland's Federal Law on Research Involving Humans (adopted 2011, last amended January 2020), which applies in Liechtenstein, states that during an "emergency situation", research expected to directly address the emergency only require: that necessary precautions have been taken to clarify the will of the subject as soon as possible; that the subject does not discernibly reject participation; and that a doctor not involved in the research represents the subject's interests. [1, 2] However, there is no indication that "emergency situation" in this context covers pandemics, or that these provisions apply to clinical trials. [1] Chapter 5 of Switzerland's Ordinance on Clinical Trials in Human Research (adopted 2013, last amended 2018), which also applies in Liechtenstein, is titled "Clinical trials in emergency situations", but it does not create an expedited process for trials' approval. [2, 3] There is no mention of an expedited process for approving clinical trials in Liechtenstein's Ordinance on Clinical Trials with Human Pharmaceuticals in the European Economic Area (adopted 2004, last amended 2013) or in Switzerland's Federal Law on Drugs and Medical Devices (adopted 2000, last amended August 2020), which also applies in Liechtenstein. [2, 4, 5] There is no mention of

clinical trials or unregistered MCM in Switzerland's Federal Law on Combatting Communicable Diseases (adopted 2012, last amended June 2020), which also applies in Liechtenstein. [2, 6] There is no evidence of an expedited process for approving clinical trials for unregistered MCM to treat ongoing epidemics on the websites of Liechtenstein's government or state administration. [7, 8]

- [1] Federal Assembly of the Swiss Confederation. 30 September 2011. "Federal Law on Research Involving Humans (Human Research Law)." ("Bundesgesetz über die Forschung am Menschen (Humanforschungsgesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20061313/index.html>]. Accessed 31 October 2020.
- [2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 11 December 2020.
- [3] Swiss Federal Council. 20 September 2013. "Ordinance on Clinical Trials in Human Research." ("Verordnung über klinische Versuche in der Humanforschung.") [<https://www.admin.ch/opc/de/classified-compilation/20121176/index.html>]. Accessed 31 October 2020.
- [4] Princely Government of Liechtenstein. 2 March 2004. "Ordinance on Clinical Trials with Human Pharmaceuticals in the European Economic Area." ("Verordnung über klinische Prüfungen mit Humanarzneimitteln im Europäischen Wirtschaftsraum.") [<https://www.gesetze.li/konso/2004073000>]. Accessed 11 December 2020.
- [5] Federal Assembly of the Swiss Confederation. 15 December 2000. "Federal Law on Drugs and Medical Devices." ("Bundesgesetz über Arzneimittel und Medizinprodukte.") [<https://www.admin.ch/opc/de/classified-compilation/20002716/index.html>]. Accessed 1 November 2020.
- [6] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 31 October 2020.
- [7] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 11 December 2020.
- [8] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 11 December 2020.

4.7.2 Regulatory process for approving medical countermeasures

4.7.2a

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

Yes = 1, No = 0

Current Year Score: 1

Liechtenstein does not have a government agency responsible for approving new medical countermeasures (MCM) for humans, but a Swiss government agency has the authority to approve MCM for humans in Liechtenstein. As per articles 9 and 54 of Switzerland's Federal Law on Drugs and Medical Devices (adopted 2000, last amended August 2020), which apply in Liechtenstein, the Swiss Agency for Therapeutic Products (Swissmedic) is responsible for approving new MCM. [1, 2] Said articles states that, before approving an MCM, Swissmedic checks that it meets requirements regarding good manufacturing practice and pharmaceutical safety, among other considerations. [1] The website of Liechtenstein's state administration confirms that MCM approved by Swissmedic can be used in Liechtenstein, unless they contain an active substance not already approved for use in Liechtenstein, in which case they can only be used in Liechtenstein 12 months after their approval by Swissmedic. [3]

- [1] Federal Assembly of the Swiss Confederation. 15 December 2000. "Federal Law on Drugs and Medical Devices." ("Bundesgesetz über Arzneimittel und Medizinprodukte.") [<https://www.admin.ch/opc/de/classified-compilation/20002716/index.html>]. Accessed 1 November 2020.

compilation/20002716/index.html]. Accessed 1 November 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 11 December 2020.

[3] State Administration of the Principality of Liechtenstein. "Appoved pharmaceuticals." ("Zugelassene Arzneimittel.") [<https://www.llv.li/inhalt/11591/amtstellen/zugelassene-arzneimittel>]. Accessed 11 December 2020.

4.7.2b

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

Yes = 1 , No = 0

Current Year Score: 0

Liechtenstein has an expedited process for approving new medical countermeasures (MCM) for human use, though there is insufficient evidence that this could be used for public health emergencies. As per articles 9 and 54 of Switzerland's Federal Law on Drugs and Medical Devices (adopted 2000, last amended August 2020), which apply in Liechtenstein, the Swiss Agency for Therapeutic Products (Swissmedic) is responsible for approving new MCM. [1, 2] The website of Liechtenstein's state administration confirms that Swissmedic is responsible for approving MCM for the country. [3] Article 9a of the Federal Law on Drugs and Medical Devices states that a simplified approval process can be applied, in accordance with article 14 of the same law, for drugs against diseases that can cause death or disability, as long as it is "compatible with the protection of health", it is expected to bring "great benefits" and no approved alternative is available in Switzerland. [1] Article 14 lists the cases in which a simplified procedure may be used. [1] This list includes "important drugs for rare diseases", "drugs produced by the army for use by the coordinated medical service" and "drugs with known active ingredients", among other things, but does not mention public health emergencies. [1] Article 44 of the Federal Law on Combatting Communicable Diseases (adopted 2012, last amended June 2020), which also applies in Liechtenstein, states that in order to ensure the supply of MCM to combat communicable diseases, the Federal Council can issue regulations on allocating, distributing or facilitating the import of MCM, but the law does not mention an expedited approval process. [2, 4]

[1] Federal Assembly of the Swiss Confederation. 15 December 2000. "Federal Law on Drugs and Medical Devices." ("Bundesgesetz über Arzneimittel und Medizinprodukte.") [<https://www.admin.ch/opc/de/classified-compilation/20002716/index.html>]. Accessed 1 November 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 11 December 2020.

[3] State Administration of the Principality of Liechtenstein. "Appoved pharmaceuticals." ("Zugelassene Arzneimittel.") [<https://www.llv.li/inhalt/11591/amtstellen/zugelassene-arzneimittel>]. Accessed 11 December 2020.

[4] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 31 October 2020.

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

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

5.1.1 Official IHR reporting

5.1.1a

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

Yes = 1 , No = 0

Current Year Score: 1

2020

World Health Organization

5.1.2 Integration of health into disaster risk reduction

5.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Liechtenstein has a national risk reduction strategy. The Office of Civil Protection has published a document titled "Risk Analysis and Security Plan for Liechtenstein", which outlines the process of developing a risk reduction strategy. [1] In 2012, the Office of Civil Protection published the Report on Phase 1 of the Liechtenstein Hazard Analysis, which outlines and assesses risks and threats facing the country, and which describes itself as forming the basis of a future risk reduction strategy. [2] This document repeatedly refers to epidemics and pandemics, concluding that they pose the greatest risk to the country. [2] However, the state administration's webpage dedicated to disasters and emergency planning only lists the two aforementioned documents; it does not provide any evidence that a risk reduction strategy has actually been adopted, or that there has been any progress on the matter since 2012. [3] There is no further relevant evidence on the website of the state administration or the government. [4, 5]

[1] Office of Civil Protection of the Principality of Liechtenstein. "Risk Analysis and Security Plan for Liechtenstein." ("Risikoplan und Sicherheitsplan für Liechtenstein.") [<https://www.llv.li/files/abs/katastrophenschutz.pdf>]. Accessed 11 December 2020.

[2] Office of Civil Protection of the Principality of Liechtenstein. "Liechtenstein Hazard Analysis. Report on phase 1: situation analysis, hazard selection, risk assessment." ("Gefährdungsanalyse Liechtenstein. Bericht zur Phase I: Situationsanalyse, Gefährdungsauswahl und Risikoabschätzung.") [https://www.llv.li/files/abs/pdf-llv-abs-bericht_gefaehrdungsanalyse-phase1-2012.pdf]. Accessed 11 December 2020.

[3] State Administration of the Principality of Liechtenstein. "Disasters - Emergency Planning." ("Katastrophen -

Notfallplanung.") [<https://www.llv.li/inhalt/12000/amtsstellen/katastrophen-notfallplanung>]. Accessed 11 December 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 11 December 2020.

[5] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 11 December 2020.

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

5.2.1 Cross-border agreements

5.2.1a

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

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

Current Year Score: 2

Liechtenstein has cross-border agreements with neighbouring countries regarding public health emergencies, and there is no evidence of gaps in implementation. Under Liechtenstein's 1923 Customs Treaty with Switzerland, a large amount of Swiss legislation applies in Liechtenstein, including the Federal Law on Combatting Communicable Human Diseases (adopted 2012, last amended June 2020) and the Ordinance on Combatting Communicable Human Diseases (adopted 2015, last amended March 2019), which together outline the basis for responding to pandemics. [1, 2, 3, 4] In addition, Switzerland and Liechtenstein have the 2011 Agreement on Cooperation in the Field of Assessment and Reporting of Events in Accordance with the International Health Regulations (2005) of the World Health Organization (WHO), which establishes a joint system for reporting public health emergencies to the WHO. [5] Furthermore, there is the 2012 Agreement on the Management of Out-of-Canton Biological Events in East Switzerland and the Principality of Liechtenstein, which is signed by Liechtenstein and 9 Swiss cantons, and which provides for the Canton of Zurich to provide assistance to Liechtenstein and the other 8 Swiss cantons when "dangerous organisms are released into the environment, and threaten humans, animals or the environment". [6] Liechtenstein and Switzerland also have the 2005 Agreement on Mutual Assistance with Disasters or Serious Accidents, which does not define "disaster", but does specifically mention response to "biological threats" and provision of medical aid. [7] With Austria, Liechtenstein has the 1995 Agreement on Mutual Assistance with Disasters or Serious Accidents, which does not define "disaster" or mention any kind of health-related emergencies, but does include "medical aid" in the types of aid provided. [8] The Joint External Evaluation of the IHR core capabilities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, confirms that in practice Liechtenstein is highly integrated into Switzerland's systems and procedures for responding to public health emergencies. [9]

[1] Swiss Confederation and Principality of Liechtenstein. 29 March 1923. "Treaty on the Accession of the Principality of Liechtenstein to the Swiss Customs Area." ("Vertrag über den Anschluss des Fürstentums Liechtenstein an das schweizerische Zollgebiet.") [<https://www.admin.ch/opc/de/classified-compilation/19230011/index.html>]. Accessed 8 December 2020.

[2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 10 December 2020.

[3] Federal Assembly of the Swiss Confederation. 28 September 2012. "Federal Law on Combatting Communicable Human Diseases (Epidemic Law)." ("Bundesgesetz über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemiengesetz).") [<https://www.admin.ch/opc/de/classified-compilation/20071012/index.html>]. Accessed 9 December 2020.

[4] Swiss Federal Council. 29 April 2015. "Ordinance on Combatting Communicable Human Diseases (Epidemic Ordinance)."

("Verordnung über die Bekämpfung übertragbarer Krankheiten des Menschen (Epidemienverordnung).")

[<https://www.admin.ch/opc/de/classified-compilation/20133212/index.html>]. Accessed 3 December 2020.

[5] Swiss Confederation and Principality of Liechtenstein. 2011. "Agreement on the cooperation concerning the assessment and reporting of events according to the International Health Regulations (2005) of the World Health Organization."

("Vereinbarung betreffend die Zusammenarbeit im Bereich der Bewertung und Meldung von Ereignissen gemäss den Internationalen Gesundheitsvorschriften (2005) der Weltgesundheitsorganisation.")

[<https://www.admin.ch/opc/de/classified-compilation/20110865/index.html>]. Accessed 31 October 2020.

[6] Canton of Zurich, Principality of Liechtenstein, Canton of Appenzell Ausserrhoden, Canton of Appenzell Innerrhoden, Canton of Glarus, Canton of Grisons, Canton of Schaffhausen, Canton of St. Gallen, Canton of Thurgovia and Canton of Zug. 30 May 2012. "Agreement on the Management of Out-of-Canton Biological Events in East Switzerland and the Principality of Liechtenstein." ("Vereinbarung betreffend Bewältigung ausserkantonaler B-Ereignisse in der Region Ostschweiz und dem Fürstentum Liechtenstein." [<https://www.gesetze.li/chrono/2012172000>]. Accessed 12 December 2020.

[7] Swiss Confederation and Principality of Liechtenstein. 2 November 2005. "Agreement on mutual assistance with disasters or serious accidents." ("Abkommen über die gegenseitige Hilfeleistung bei Katastrophen oder schweren Unglücksfällen.")

[<https://www.admin.ch/opc/de/classified-compilation/20040755/index.html>]. Accessed 31 October 2020.

[8] Principality of Liechtenstein and Republic of Austria. 26 October 1995. "Agreement on mutual assistance with disasters or serious accidents." ("Abkommen über die gegenseitige Hilfeleistung bei Katastrophen oder schweren Unglücksfällen.")

[<https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010922>]. Accessed 9 August 2020.

[9] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

5.2.1b

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

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

Current Year Score: 2

Liechtenstein has cross-border agreements with neighbouring countries regarding animal health emergencies, and there is no evidence of gaps in implementation. Under Liechtenstein's 1923 Customs Treaty with Switzerland, a large amount of Swiss legislation applies in Liechtenstein, including the Ordinance on Animal Disease (adopted 1995, last amended 2020) the Ordinance on Veterinary Pharmaceuticals (adopted 2004, last amended 2020), and the Ordinance on Hunting and the Protection of Wild Mammals (adopted 1988, last amended 2018). [1, 2, 3, 4, 5] In addition, in 2007 Liechtenstein, Switzerland and the European Union (EU) signed an agreement that made Liechtenstein a party to the 1999 Agreement on Trade in Agricultural Products, which had hitherto just been between Switzerland and the EU. [6] The 1999 Agreement on Trade in Agricultural contains several references to animal health emergencies, particularly in annex 11, which is on animal health and zoonotic measures applicable to trade in live animals and animal products. [7] In addition, there is the 2012 Agreement on the Management of Out-of-Canton Biological Events in East Switzerland and the Principality of Liechtenstein, which is signed by Liechtenstein and 9 Swiss cantons, and which provides for the Canton of Zurich to provide assistance to Liechtenstein and the other 8 Swiss cantons when "dangerous organisms are released into the environment, and threaten humans, animals or the environment". [8] The World Health Organization's Joint External Evaluation of the IHR core capabilities of the Swiss Confederation and the Principality of Liechtenstein, which was conducted in 2017, confirms that in practice Liechtenstein is highly integrated into Switzerland's systems and procedures for responding to animal health emergencies. [9]

- [1] Swiss Confederation and Principality of Liechtenstein. 29 March 1923. "Treaty on the Accession of the Principality of Liechtenstein to the Swiss Customs Area." ("Vertrag über den Anschluss des Fürstentums Liechtenstein an das schweizerische Zollgebiet.") [<https://www.admin.ch/opc/de/classified-compilation/19230011/index.html>]. Accessed 8 December 2020.
- [2] Princely Government of Liechtenstein. 6 October 2020. "Announcement of the Swiss legislation applicable in the Principality of Liechtenstein pursuant to the Customs Treaty." ("Kundmachung der aufgrund des Zollvertrages im Fürstentum Liechtenstein anwendbaren schweizerischen Rechtsvorschriften.") [<https://www.gesetze.li/konso/2020285000>]. Accessed 10 December 2020.
- [3] Swiss Federal Council. 27 June 1995. "Ordinance on Animal Disease." ("Tierseuchenverordnung.") [<https://www.admin.ch/opc/de/classified-compilation/19950206/index.html>]. Accessed 19 November 2020.
- [4] Swiss Federal Council. 18 August 2004. "Ordinance on Veterinary Pharmaceuticals." ("Verordnung über die Tierarzneimittel.") [<https://www.admin.ch/opc/de/classified-compilation/20030705/index.html>]. Accessed 12 December 2020.
- [5] Swiss Federal Council. 29 February 1988. "Ordinance on hunting and the protection of wild mammals." ("Verordnung über die Jagd und den Schutz wildlebender Säugetiere und Vögel.") [<https://www.admin.ch/opc/de/classified-compilation/19880042/index.html>]. Accessed 12 December 2020.
- [6] Council of the European Union. 26 September 2007. "Council Decision Concerning the Additional Agreement between the European Community, the Swiss Confederation and the Principality of Liechtenstein extending to the Principality of Liechtenstein the Agreement between the European Community and the Swiss Confederation on Trade in Agricultural Products." [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32007D0658>]. Accessed 12 December 2020.
- [7] European Union and Swiss Confederation. 1999. "Agreement on Trade in Agricultural Products." [<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02002A0430%2804%29-20201101>]. Accessed 12 December 2020.
- [8] Canton of Zurich, Principality of Liechtenstein, Canton of Appenzell Ausserrhoden, Canton of Appenzell Innerrhoden, Canton of Glarus, Canton of Grisons, Canton of Schaffhausen, Canton of St. Gallen, Canton of Thurgovia and Canton of Zug. 30 May 2012. "Agreement on the Management of Out-of-Canton Biological Events in East Switzerland and the Principality of Liechtenstein." ("Vereinbarung betreffend Bewältigung ausserkantonaler B-Ereignisse in der Region Ostschweiz und dem Fürstentum Liechtenstein.") [<https://www.gesetze.li/chrono/2012172000>]. Accessed 12 December 2020.
- [9] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 22 October 2020.

5.3 INTERNATIONAL COMMITMENTS

5.3.1 Participation in international agreements

5.3.1a

Does the county have signatory and ratification (or same legal effect) status to the Biological Weapons Convention?

Signed and ratified (or action having the same legal effect) = 2, Signed = 1, Non-compliant or not a member = 0

Current Year Score: 2

2021

Biological Weapons Convention

5.3.1b

Has the country submitted confidence building measures for the Biological Weapons Convention in the past three years?

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1c

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

Yes = 1 , No = 0

Current Year Score: 1

2021

Biological Weapons Convention

5.3.1d

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

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

Current Year Score: 4

2021

Biological Weapons Convention

5.3.2 Voluntary memberships

5.3.2a

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

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

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

Current Year Score: 0

2021

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

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

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

5.4.1a

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

Yes = 1 , No = 0

Current Year Score: 1

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 public evidence that Liechtenstein has allocated national funds to improve capacity to address epidemic threats within the past three years. The "Liechtenstein in Numbers" reports published by the Office for Statistics in 2019 and 2020 cover public finances in 2016, 2017 and 2018, and do not mention any investments to improve capacity to address epidemic threats. [1, 2] There is no evidence of investment to improve capacity to address epidemic threats on the websites of the government, the state administration or Liechtenstein National Hospital. [3, 4, 5]

[1] Office for Statistics of the Principality of Liechtenstein. January 2019. "Liechtenstein in Numbers 2019." ("Liechtenstein in Zahlen 2019.") [https://www.llv.li/files/as/liechtenstein_in_zahlen_2019.pdf]. Accessed 13 December 2020.

[2] Office for Statistics of the Principality of Liechtenstein. January 2020. "Liechtenstein in Numbers 2020." ("Liechtenstein in Zahlen 2020.") [https://www.llv.li/files/as/liechtenstein_in_zahlen_2020.pdf]. Accessed 13 December 2020.

[3] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 13 December 2020.

[4] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 13 December 2020.

[5] Liechtenstein National Hospital. [<https://www.landesspital.li/>]. Accessed 13 December 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no evidence of a publicly identified special emergency public financing mechanism and funds that Liechtenstein can access in the face of a public health emergency. There is no evidence of such a mechanism on the websites of the country's government or state administration. [1, 2] Liechtenstein is not eligible for funding from the World Bank's Pandemic Emergency Financing Facility, and is not eligible for support from the International Development Association [3, 4, 5].

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 12 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 12 December 2020.

[3] World Bank. 1 November 2019. "Pandemic Emergency Financing Facility: Frequently Asked Questions". [www.worldbank.org/en/topic/pandemics/brief/pandemic-emergency-facility-frequently-asked-questions]. Accessed 28 October 2020.

[4] World Bank. 2017. "Pandemic Financing Facility". [<http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf>]. Accessed 28 October 2020.

[5] International Development Association. "Borrowing Countries." [<https://ida.worldbank.org/about/borrowing-countries>]. Accessed 28 October 2020.

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

5.5.4a

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

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

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

Current Year Score: 0

There is no public evidence that Liechtenstein's senior leaders have, in the past three years, made any public commitments to support other countries to improve capacity to address epidemic threats, or to improve Liechtenstein's domestic capacity to address epidemic threats. There is no such evidence on the websites of Liechtenstein's government or state administration. [1, 2] In November 2019 Liechtenstein pledged USD 10,000 to the Global Polio Eradication Initiative's Polio Endgame Strategy 2019-2023, which is intended to eradicate polio around the world, but this project involves vaccination rather than improving capacity to address epidemic threats, and there is no evidence that the pledge came directly from a senior leader. [3, 4]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 13 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 13 December 2020.

[3] World Health Organization. 19 November 2019. "Global leaders pledge US\$2.6 billion to eradicate polio at the Reaching the Last Mile Forum in Abu Dhabi." [<https://www.who.int/news/item/19-11-2019-global-leaders-pledge-us-2.6-billion-to-eradicate-polio-at-the-reaching-the-last-mile-forum-in-abu-dhabi>].

[4] Global Polio Eradication Initiative. 19 November 2019. "Pledging Moment Table." [<http://polioeradication.org/wp-content/uploads/2019/11/Final-Pledging-Table-20191118.pdf>].

5.5.4b

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

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

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

Current Year Score: 1

In the past three years, Liechtenstein has invested finances to support other countries to improve capacity to address epidemic threats, but there is no public evidence that Liechtenstein has invested finances or provided technical support to improve its own domestic capacity to address epidemic threats. In 2018, Liechtenstein provided CHF 100,000 (USD 112,000) to a project helping the Democratic Republic of the Congo to fight ebola, and CHF 100,000 (USD 112,000) to a project helping Zimbabwe. [1] In 2020, Liechtenstein provided CHF 500,000 (USD 562,000) to a global project to promote effective response and prevention for COVID-19 and future epidemics. [2] Of this, CHF 300,000 (USD 337,000) went to the World Health Organization (WHO), in order to fund efforts to promote inter-regional co-ordination on reaction and risk reduction, to improve national preparedness and response capacities, and to accelerate research and development. [2] In July 2020, Liechtenstein provided CHF 22,000 (USD 25,000) to a promote anti-epidemic measures in prisons in developing countries during the COVID-19 pandemic. [3] The Georgetown Infectious Disease Atlas Global Health Security Tracking (GHST) website reports that in 2020 Liechtenstein made two commitments in relation to the COVID-19 pandemic: one of USD 314,690 to the WHO, and one of USD 209,790 to an unknown recipient. [4] The GHST does not report Liechtenstein providing making any other commitments, or disbursing any funds at all, in the period 2014–2020. [4] There is no evidence of Liechtenstein investing finances to improve its own capacity to address epidemic threats on the websites of the state administration, the government or Liechtenstein National Hospital. [5, 6, 7] The "Liechtenstein in Numbers" reports published by the Office for Statistics in 2019 and 2020 cover public finances in 2016, 2017 and 2018, and do not mention any investments to improve capacity to address epidemic threats. [8, 9] There is also no evidence of Liechtenstein receiving funding from the GHST website. [10]

- [1] State Administration of the Principality of Liechtenstein. "Liechtenstein supports the fight against ebola in the Democratic Republic of the Congo." ("Liechtenstein unterstützt den Kampf gegen Ebola in der Demokratischen Republik Kongo.") [https://www.llv.li/neuigkeiten/detail/1190]. Accessed 13 December 2020.
- [2] State Administration of the Principality of Liechtenstein. "Liechtenstein supports global solidarity in the fight against COVID-19." ("Liechtenstein unterstützt globale Solidarität zur Bekämpfung von COVID-19.") [https://www.llv.li/neuigkeiten/detail/1638/ihze-liechtenstein-unterstutzt-globale-solidaritat-zur-bekampfung-von-covid-19]. Accessed 13 December 2020.
- [3] State Administration of the Principality of Liechtenstein. "Improving protection from COVID-19 in prisons." ("Schutz vor COVID-19 in Haftanstalten verbessern.") [https://www.llv.li/neuigkeiten/detail/1724/schutz-vor-covid-19-in-haftanstalten-verbessern]. Accessed 13 December 2020.
- [4] Georgetown University. 29 January 2021. "Funder profile: Liechtenstein". [https://tracking.ghscosting.org/table/987/funder]. Accessed 22 April 2021.
- [5] Government of the Principality of Liechtenstein. [https://www.regierung.li]. Accessed 13 December 2020.
- [6] State Administration of the Principality of Liechtenstein. [https://www.llv.li]. Accessed 13 December 2020.
- [7] Liechtenstein National Hospital. [https://www.landesspital.li/]. Accessed 13 December 2020.
- [8] Office for Statistics of the Principality of Liechtenstein. January 2019. "Liechtenstein in Numbers 2019." ("Liechtenstein in Zahlen 2019.") [https://www.llv.li/files/as/liechtenstein_in_zahlen_2019.pdf]. Accessed 13 December 2020.
- [9] Office for Statistics of the Principality of Liechtenstein. January 2020. "Liechtenstein in Numbers 2020." ("Liechtenstein in Zahlen 2020.") [https://www.llv.li/files/as/liechtenstein_in_zahlen_2020.pdf]. Accessed 13 December 2020.
- [10] Georgetown University. 29 January 2021. "Recipient profile: Liechtenstein". [https://tracking.ghscosting.org/details/987/recipient]. Accessed 22 April 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 that Liechtenstein has a plan or policy for sharing genetic data, clinical specimens, or isolated specimens along with the associated epidemiological data with international organizations or other countries that goes beyond influenza. The websites of the Liechtenstein's government and state administration make no reference to such a plan or policy. [1, 2] The World Health Organization's Joint External Evaluation of IHR Core Capacities in Switzerland and Liechtenstein, conducted in 2017, reports that Liechtenstein and Switzerland cooperate closely on matters of IHR legislation and policy, but it does not provide any details about plans or policies for either country to share genetic data, clinical specimens, or isolated specimens along with the associated epidemiological data with one another or more widely. [3]

[1] Government of the Principality of Liechtenstein. [<https://www.regierung.li>]. Accessed 12 December 2020.

[2] State Administration of the Principality of Liechtenstein. [<https://www.llv.li>]. Accessed 12 December 2020.

[3] World Health Organization. 2018. "Joint external evaluation of IHR core capacities of the Swiss Confederation and the Principality of Liechtenstein". [<https://apps.who.int/iris/bitstream/handle/10665/274958/WHO-WHE-CPI-2018.26-eng.pdf?sequence=1&isAllowed=y>]. Accessed 11 January 2021.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Liechtenstein has failed to shared samples in accordance with the Pandemic Influenza Preparedness (PIP) framework in the past two years. The World Health Organization (WHO) has not reported any non-compliance from Liechtenstein, and there is no evidence of non-compliance in domestic or international media. [1] The WHO's International Virus Traceability Mechanism does not list Liechtenstein as having any laboratories in the Global Influenza Surveillance and Response System. [2] There is no evidence of non-compliance in domestic or international news media. [3, 4, 5, 6, 7, 8, 9]

[1] World Health Organization. [<http://www.who.int/>]. Accessed 12 December 2020.

[2] World Health Organization. "IVTM 2.0." [<https://extranet.who.int/ivtm2>]. Accessed 12 December 2020.

[3] Liechtensteiner Vaterland. [<https://www.vaterland.li/>]. Accessed 3 December 2020.

[4] Volksblatt. [<https://www.volksblatt.li/>]. Accessed 3 December 2020.

[5] Lie Zeit. [<https://www.lie-zeit.li/>]. Accessed 3 December 2020.

[6] Neue Zürcher Zeitung. [<https://www.nzz.ch/>]. Accessed 3 December 2020.

[7] Süddeutsche Zeitung. [<https://www.sueddeutsche.de/>]. Accessed 3 December 2020.

[8] Reuters. [<https://www.reuters.com/>]. Accessed 3 December 2020.

[9] British Broadcasting Corporation. "BBC News." [<https://www.bbc.com/news>]. Accessed 3 December 2020.

5.6.1c

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Liechtenstein has failed to share pandemic pathogen samples during an outbreak in the past two years. There is no evidence of Liechtenstein either sharing or failing to share pathogen samples, including coronavirus

samples, on the World Health Organization's website or in domestic or international media. [1]

[1] World Health Organization. [<http://www.who.int/>]. Accessed 12 December 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 85

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 3

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 4

2020

Economist Intelligence

6.1.2 Orderly transfers of power

6.1.2a

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

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

Current Year Score: 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: 4

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 4

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.1.6 Government territorial control

6.1.6a

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

Yes = 1, No = 0

Current Year Score: 1

2021

Economist Intelligence

6.1.7 International tensions

6.1.7a

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

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

Current Year Score: 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: 0.82

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: 0.24

2008-2018

World Bank; Economist Impact

6.2.3b

Share of employment in the informal sector

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

Current Year Score: 0

The available evidence suggests informal employment accounts for less than 25% of employment in Liechtenstein. A June 2019 report by Liechtenstein's government notes that the country has low informal employment thanks to a high level of education, low income tax, low non-wage labor costs and an array of laws and regulations actively seeking to combat

informal employment. [1] This report does not, however, give any figures on informal employment. [1] Similarly, there are no statistics related to informal employment in the latest annual report on employment published by the Office for Statistics. [2] There are no statistics on informal employment in Liechtenstein in the statistical databases maintained by the World Bank and the International Labor Organization. [3, 4, 5] A low level of informal employment is suggested by the fact that the arrest of two people for informal employment in 2016 was a matter of national news. [6, 7] Liechtenstein's government reports that just 0.8% of the country's employment is in the primary sector, while 40% is in the industrial sector and 60% is in services. [8]

[1] Government of the Principality of Liechtenstein. June 2019. "Sustainability in Liechtenstein. Report on the Implementation of the Agenda 2030 for Sustainable Development." ("Nachhaltigkeit in Liechtenstein Bericht über die Umsetzung der Agenda 2030 für nachhaltige Entwicklung.") [<https://www.llv.li/files/aaa/aaa-regierungsbericht-uno-de-inhalt.pdf>]. Accessed 18 November 2020.

[2] Office for Statistics of the Principality of Liechtenstein. 14 September 2020. "Employment Statistics 2019." ("Beschäftigungsstatistik 2019.") [https://www.llv.li/files/as/i2019_beschaefigungsstatistik.pdf]. Accessed 18 November 2020.

[3] World Bank. "Informal employment (% of total non-agricultural employment)."
[<https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=LI>]. Accessed 18 November 2020.

[4] International Labor Organization. "Country profiles." [<https://ilostat.ilo.org/data/country-profiles/>]. Accessed 18 November 2020.

[5] International Labor Organization. "Statistics on the informal economy." [<https://ilostat.ilo.org/topics/informality/>]. Accessed 18 November 2020.

[6] National Police of the Principality of Liechtenstein. 20 December 2016. "Illegal workers arrested." ("Schwarzarbeiter festgestellt.") [<https://www.polizeiticker.ch/artikel/liechtenstein-fl-schwarzarbeiter-festgestellt-91611>]. Accessed 18 November 2020.

[7] Stephanie Martina. 20 December 2016. "Two illegal workers caught in Liechtenstein." ("Zwei Schwarzarbeiter in Liechtenstein erwischt.") FM1 Today. [<https://www.fm1today.ch/ostschweiz/zwei-schwarzarbeiter-in-liechtenstein-erwischt-134816703>]. Accessed 18 November 2020.

[8] Government of the Principality of Liechtenstein. "Labour market." [<https://www.liechtenstein.li/en/economy/labour-market/>].

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: -

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: 4

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 4

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 4

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 14.37

2019

World Bank

6.4.2 Land use

6.4.2a

Percentage point change in forest area between 2006–2016

Input number

Current Year Score: 0.0

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: 83.04

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: 605.9

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 18.88

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 27.43

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 19.5

2016

WHO

6.5.2 Access to potable water and sanitation

6.5.2a

Percentage of homes with access to at least basic water infrastructure

Input number

Current Year Score: 99

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 99

2017

UNICEF; Economist Impact

6.5.3 Public healthcare spending levels per capita

6.5.3a

Domestic general government health expenditure per capita, PPP (current international \$)

Input number

Current Year Score: 3008.08

2018

WHO Global Health Expenditure database

6.5.4 Trust in medical and health advice

6.5.4a

Trust medical and health advice from the government

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018

6.5.4b

Trust medical and health advice from medical workers

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

Current Year Score: 1

2018

Wellcome Trust Global Monitor 2018