Nicaragua

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

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

The Ministry of Health (MINSA) of Nicaragua issued a national AMR plan in 2014. The Strategy for the Containment of Antimicrobial Resistance (ECRA) specifically covers four priority AMR pathogens: E. coli, K. pneumonia, S. aureus and S. pneumoniae. The ECRA establishes strategic objectives which include reducing the risk of AMR infections, promoting comprehensive AMR surveillance in public and private hospitals, strengthening hospitals' Rational Usage and Intra-hospital Infection Committees, and involving the general public to reduce infection risks from contaminated water, unsafe foods and a lack of sanitation. In terms of surveillance, Activity 2.2.1 tasks the public health system with "active searching" for cases of AMR pathogens. Action 2.1 states that MINSA must strengthen integrated surveillance of AMR by ensuring the sustainability of the capacity installed in laboratory services. Supporting activities include creating technical guidelines for laboratories, strengthening the microbiology laboratory network, personnel training on specific pathogens and updating the list of basic supplies required by laboratories. In terms of detection, the ECRA's comprehensive surveillance objective, includes several activities related to detection. Activity 2.1.5 calls for training for laboratory staff to detect "resistance mechanisms". Activity 2.4.1 states that MINSA must develop methodologies, techniques and strategies to interpret the results of the surveillance system. In terms of reporting, two of the ECRA's general principles promote reporting: Data for Impact Evaluation and Accountability. Activity 2.4.1 states that MINSA must clearly communicate the interpreted results of surveillance and detection activities to decision makers. Activity 2.2.1 states that AMR outbreaks must be promptly reported and "microbiological information" communicated to decision makers. Activity 2.4.2 relates to presenting findings internally, ensuring that findings regarding AMR outbreaks are communicated to those responsible for patient care in clinical settings. The ECRA states that data should be used to objectively measure the activities carried out, and that transparency is a key factor for properly measuring success. [1] Press and government reports from 2017 indicated that an updated AMR plan was supposed by be published by May of that year. [2, 3, 4, 5] However, the websites of MINSA and the Ministry of Agriculture do not contain a copy of an updated plan. [6, 7] The World Health Organization's Library of National Action Plans does not list an AMR plan for Nicaragua. [8]

[1] Ministry of Health (Ministerio de Salud). 2014. "Strategy for the Containment of Antimicrobial Resistance" ("Estrategia para la Contención de la Resistencia a los Antimicrobianos"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2014/Estrategia-nacional-para-contener-la-resistencia-a-los-antimicrobianos/]. Accessed 16 August 2020.
[2] El 19. 2017. "Nicaragua desarrolla plan de resistencia antimicrobiana". [https://www.el19digital.com/articulos/ver/titulo:54500-nicaragua-desarrolla-plan-de-resistencia-antimicrobiana]. Accessed 16 August 2020.
[3] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2017. "El Ministerio de Salud, en conjunto con otras instituciones, prepara un plan de acción nacional".

[http://conicyt.gob.ni/index.php/2017/04/04/nicaragua-fortalecera-vigilancia-antimicrobiana/]. Accessed 16 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2017. "NICARAGUA PROMOVERÁ USO ADECUADO DE ANTIBIÓTICOS". [http://www.minsa.gob.ni/index.php/106-noticias-2017/3414-nicaragua-promovera-uso-adecuado-de-antibioticos]. Accessed 16 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2017. "PREPARAN PLAN DE RESISTENCIA ANTIMICROBIANA". [http://www.minsa.gob.ni/index.php/noticias-2017/3410-preparan-plan-de-resistencia-antimic]. Accessed 16 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[8] World Health Organization. 2020. "Library of national action plans". [https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 16 August 2020

1.1.1b

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

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

Current Year Score: 2

In Nicaragua, there is a national laboratory system that carries out surveillance on all 7 + 1 priority AMR pathogens. Nicaragua's national laboratory system participates in the Latin American Network of Antimicrobial Resistance Surveillance (ReLAVRA) which is coordinated by the Pan American Health Organization (PAHO). Nicaragua's national system for AMR surveillance includes 11 laboratories, one of which is the national reference laboratory, the National Center for Diagnosis and Reference (CNDR). The national system's 11 laboratories are located in seven cities: Managua, Granada, Jinotega, Matagalpa, Chinandega, Boaco and Bluefields. [1] According to ReLAVRA, Nicaragua can test for E. coli, K. pneumonia, S. aureus, S. pneumoniae, Salmonella spp., and Shigella spp. [1] In addition, a 2017 PAHO presentation stated that the CNDR can test for Neisseria gonorrhoeae and associated AMR resistance. [2] A journal article from 1993 also noted that Nicaragua's national public health laboratory possessed the capacity to test for N. gonorrhoeae since at least 1989. [3] In terms of Mycobacterium tuberculosis, a 2009 journal article stated that in 2004 Nicaragua's national laboratory network had 176 laboratories with the capacity to test for the pathogen and that the CNDR could perform "cultures and drug susceptibility testing" for tuberculosis. [4]

[1] Pan American Health Organization. 2014. "Annual Report for the Surveillance Network for Antibiotic Resistance" ("Informe Anual de la Red de Monitoreo/Vigilancia de la Resistencia a los Antibióticos"). [https://www.paho.org/hq/dmdocuments/2017/2014-cha-informe-anual-relavra.pdf]. Accessed 18 August 2020.
[2] Galarza, P. 2017. "NUEVOS PASOS EN LA VIGILANCIA DE LA RESISTENCIA DE NEISSERIA GONORRHOEAE EN LATINOAMÉRICA AVANCES Y DESAFÍOS". [https://www.paho.org/en/file/47242/download?token=BXSyI_In]. Accessed 18 August 2020.
[3] Castro I., Bergeron M.G., Chamberland S. 1993. "Characterization of multiresistant strains of Neisseria gonorrhoeae isolated in Nicaragua". [https://pubmed.ncbi.nlm.nih.gov/8108753/]. Accessed 18 August 2020.
[4] Chacón, L., Lainez, M., Rosales, E., Mercado, M., & Caminero, J. A. 2009. "Evolution in the resistance of Mycobacterium tuberculosis to anti-tuberculosis drugs in Nicaragua". [http://docserver.ingentaconnect.com/deliver/connect/iuatld/10273719/v13n1/s11.pdf?expires=1597791984&id=0000&titleid=3764&checksum=8E99E58FF99F7F787EF0801ABF54BCAD]. Accessed 18 August 2020.

1.1.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient public evidence that the governmental institutions in Nicaragua conduct environmental surveillance activities for antimicrobial residues or AMR organisms. According to the Ministry of Health's (MINSA) Strategy for the Containment of Antimicrobial Resistance (ECRA), the Center for the Research of Aquatic Resources in Nicaragua (CIRA) at Nicaragua's principal public university, the National Autonomous University of Nicaragua (UNAN), and the Ministry of the Environment and Natural Resources (MARENA) participate in environmental monitoring activities for AMR in water, air, and soil. [1] The ECRA does not provide additional details regarding these activities. [1] CIRA's website no longer describes specific activities regarding environmental surveillance of AMR, but it does state that its microbiology laboratory can test for E. coli and S. aureus in water. [2, 3] MINSA's and MARENA's websites do not include publicly available information regarding environmental monitoring activities for antimicrobial residues or AMR organisms. [3, 4] The World Health Organization's Library of National Action Plans does not list an AMR plan for Nicaragua. [5]

[1] Ministry of Health (Ministerio de Salud). 2014. "Strategy for the Containment of Antimicrobial Resistance" ("Estrategia para la Contención de la Resistencia a los Antimicrobianos"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2014/Estrategia-nacional-para-contener-la-resistencia-a-los-antimicrobianos/]. Accessed 16 August 2020.
[2] Center for the Research of Aquatic Resources in Nicaragua (Centro para la Investigación en Recursos Acuáticos de Nicaragua). 2020. "Inicio 2020". [https://cira.unan.edu.ni/]. Accessed 18 August 2020.
[3] Center for the Research of Aquatic Resources in Nicaragua (Centro para la Investigación en Recursos Acuáticos de Nicaragua). 2015. "Laboratories". [https://cira.unan.edu.ni/wp-content/uploads/2016/06/broshure_lab_ciraunan.edu.n_ultimaRev141215.pdf]. Accessed 18 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] World Health Organization. 2020. "Library of national action plans". [https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 16 August 2020

1.1.2 Antimicrobial control

1.1.2a

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

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

Current Year Score: 1

Legislation and regulations in Nicaragua require prescriptions for antibiotic use for humans, but there is evidence of gaps in enforcement. The regulations (Decree No. 6-99) for Law No. 292, the Law on Medicines and Pharmacies, establish the requirement for prescriptions for certain medicines. Article 6 states that only medicines on the national List of Over-the-Counter Medicines may be sold without a prescription. [1] The most recent version of the Ministry of Health's (MINSA) National List, published via Ministerial Resolution No. 152-2017, does not contain any over-the-counter antibiotics, except for some topical creams and gels. The only category of antibiotics included on the list are in section 12-a for "Skin Care", "Antibiotics only, with cicatrisants, or with local anesthetics". [2] Despite the regulations, in 2019 a MINSA official highlighted the prevalence of self-medication with antibiotics and stated that antibiotic resistance needed to be controlled via regulation of antibiotics. [3] Press reports and academic papers dating from 2003 to 2016 have noted the sale of antibiotics without prescriptions in the country. [4, 5, 6, 7] A 2006 study reported that 34.2% of Nicaraguans surveyed had obtained antibiotics without a prescription. [8]

[1] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" "(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 18 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2017. "Ministerial Resolution No. 152-2017" ("Resolucion Ministerial No. 152-2017"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/Lista-de-Medicamentos-de-Libre-Venta-en-Nicaragua/La-Gaceta-No.-85-del-09-05-17/]. Accessed 18 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2019. "MINSA hosts national congress on infectious disease". [http://www.minsa.gob.ni/index.php/109-noticias-2019/4901-minsa-realiza-congreso-nacional-sobre-infectologia]. Accessed 18 August 2020.
[4] La Prensa. 2003. "Selling antibiotics without prescriptions". [https://www.laprensa.com.ni/2003/03/16/nacionales/849691-venden-antibiticos-sin-receta]. Accessed 18 August 2020.
[5] Gonzalez, L. & Martinez, V. 2006. "Estudio de utilización de Antimicrobianos en los municipios de Tipitapa y Mateare en el periodo comprendido de Marzo a Agosto del 2005". [http://riul.unanleon.edu.ni:8080/jspui/bitstream/123456789/2159/1/199118.pdf]. Accessed 18 August 2020.
[6] El Nuevo Diario. 2014. "Antibiotics sold freely". [https://www.elnuevodiario.com.ni/nacionales/321783-antibioticos-se-venden-libre/]. Accessed 18 August 2020.
[7] Altamirano, D. & Calderon, Y. 2016. "AUTOMEDICACIÓN DE LA POBLACIÓN ENTRE LAS EDADES DE 20 A 35 AÑOS QUE HABITA EN LACOMARCA EL RODEO-BOACO, EN EL PERIODO DE FEBRERO Y MARZO 2015". [https://repositorio.unan.edu.ni/3255/1/76395.pdf]. Accessed 18 August 2020.
[8] Pan American Health Organization. 2013. "Biennial Meeting PAHO Technical Advisory Group on Antimicrobial Resistance and Infection Prevention and Control". [https://www.paho.org/hq/dmdocuments/2014/2014-cha-tag-antimicrobial-resistance-ipc.pdf]. Accessed 18 August 2020.

1.1.2b

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

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

Current Year Score: 0

There is no public evidence that there is national legislation or regulations in Nicaragua that require prescriptions for antibiotic use for animals. The Ministry of Health's 2014 Strategy for the Containment of Antimicrobial Resistance (ECRA) calls for the "development and implementation of prescriptions and information systems for control of treatments linked to the exploitation of the poultry, ranching and fish farming industries, among others". [1] The websites for the Ministry of Agriculture (MAG), Institute for Agricultural Protection and Health (IPSA) and the Ministry of Health do not contain any additional information regarding prescriptions for antibiotic use for animals. [2, 3, 4] Neither Law No. 291 of 1998, the Framework Law for Animal Health and Vegetable Food Safety, nor Decree No. 2-99, the regulations for Law No. 291, contain requirements for prescriptions for antibiotic use for animals. [5, 6]. Nicaragua is not listed in the WHO Library of National Action Plans. [7] The pharmaceutical regulator is part of MINSA. [8]

[1] Ministry of Health (Ministerio de Salud). 2014. "Strategy for the Containment of Antimicrobial Resistance" ("Estrategia para la Contención de la Resistencia a los Antimicrobianos"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2014/Estrategia-nacional-para-contener-la-resistencia-a-los-antimicrobianos/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio".

[https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] President of the Republic of Nicaragua. 1998. "Basic Law for Animal Health and Vegetable Safety Law No. 291" (“LEY BÁSICA DE SALUD ANIMAL Y SANIDAD VEGETAL Ley No. 291”). [http://www.vertic.org/media/National%20Legislation/Nicaragua/NI_Ley_291_Salud_Animal_y_Sanidad_Vegetal_1998.pdf]. Accessed 18 August 2020.
[6] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 291 Basic Law for Animal Health and Vegetable Safety Decree No. 2-99" (“REGLAMENTO A LA LEY No. 291.LEY BÁSICA DE SALUD ANIMAL Y SANIDAD VEGETAL DECRETO No. 2-99”). [http://www.vertic.org/media/National%20Legislation/Nicaragua/NI_Decreto_2-99_Rgto_Ley_Salud_Animal_y_Vegetal.pdf]. Accessed 18 August 2020.
[7] World Health Organization. 2020. “Library of national action plans”. [https://www.who.int/antimicrobial-resistance/national-action-plans/library/en/]. Accessed 16 August 2020
[8] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" “(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99”). [http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 18 August 2020.

1.2 ZOONOTIC DISEASE

1.2.1 National planning for zoonotic diseases/pathogens

1.2.1a

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

Yes = 1 , No = 0

Current Year Score: 1

In Nicaragua, there national legislation, a strategic plan and disease-specific documents dealing with zoonotic disease. Nicaragua’s General Health Law (Law No. 423 of 2002), in article 24, states that the Ministry of Health (MINSA) will coordinate with other government agencies to issue regulations and actions to protect the population from zoonotic diseases. [1] In 2014, MINSA issued the “Strategic Plan for Neglected Infectious Diseases 2014-2018” (“Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018”), which covers zoonotic diseases including leptospirosis, rabies, leishmaniasis and Chagas disease. The Plan specifically names leptospirosis and rabies as “zoonotic diseases”. The Plan focuses on surveillance, analysis and planning of consensus-based interventions. [2] In 2019, MINSA officials met with experts from the Pan American Health Organization (PAHO) to review the progress of the Plan. MINSA stated that it was still operating under the 2014-2018 Plan and was developing a new proposal for a 2020-2025 Strategic Plan to replace it. [3] In addition, MINSA has issued separate technical regulations regarding rabies and leptospirosis. Technical Regulation NTON No. 24 002-05 regulates the prevention and control of urban rabies in Nicaragua. The regulations include prevention, surveillance and diagnosis activities. [4] Technical Regulation NTON No. 24 001-05 regulates the prevention and control of human leptospirosis. The regulations include prevention, control, medical attention, surveillance and diagnosis activities. [5] In the animal health sector, in 2009, the Ministry of Agriculture and Forestry issued regulations on several zoonotic diseases: Ministerial Agreement No. 006-2009 with general regulations for national programs to control bovine tuberculosis, bovine brucellosis, bovine rabies, bovine spongiform encephalopathy, and avian influenza; Ministerial Agreement No. 007-2009 for the control and eradication of bovine tuberculosis in Nicaragua, which includes protocols for quarantine and elimination of infected animals; and Ministerial Agreement No. 008-2009 for the control and eradication of bovine brucellosis in Nicaragua, which includes protocols for inspection, diagnosis, certification and surveillance. [6, 7, 8]

[1] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" ("LEY GENERAL DE SALUD LEY No. 423"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2014. "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"). [https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=687-plan-estrategico-de-las-eids-nicaragua&category_slug=vigilancia-de-la-salud-publica&Itemid=235]. Accessed 19 August 2020.
[3] Pan American Health Organization (PAHO). 2019. "Evaluation meeting for strategic plan of neglected infectious diseases in Nicaragua". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=951:reunion-de-evaluacion-de-plan-estrategico-de-enfermedades-infecciosas-desatendidas-en-nicaragua-2014-2018&Itemid=244]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2006. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Urban Rabies NTON 24 002-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE PARA LA PREVENCIÓN Y CONTROL DE LA RABIA URBANA NTON 24 002-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/F679027E797FDA4F062575E700617024?OpenDocument]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2005. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Human Leptospirosis Technical Regulation No. 24 001-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE DE PREVENCIÓN Y CONTROL DE LA LEPTOSPIROSIS HUMANA NORMA TÉCNICA No. 24 001-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/2EB06741797170710625756200590 9CF?OpenDocument]. Accessed 19 August 2020.
[6] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 006-2009" ("ACUERDO MINISTERIAL No. 006-2009"). https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Bovina/TB%20y%20BR/ACUERDO%20MIN%2006-2009,%20Y%2007-2009%20MAGFOR.pdf]. Accessed 19 August 2020.
[7] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 007-2009" ("ACUERDO MINISTERIAL No. 007-2009"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/7CDEB38DD3D3C7E10625764A005B5D52?OpenDocument]. Accessed 19 August 2020.
[8] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 008-2009" ("ACUERDO MINISTERIAL No. 008-2009"). [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Bovina/TB%20y%20BR/ACUERDO%20MIN%2008-09%20MEDIDAS%20SANITARIAS%20PARAEL%20CONTROL%20Y%20ERRADICACION%20DE%20LA%20BRUCELOSIS%20BOVINA%20EN%20NIC.pdf]. Accessed 19 August 2020.

1.2.1b

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

Yes = 1 , No = 0

Current Year Score: 1

Nicaragua has a national strategy and regulations which include measures for risk identification and reduction for zoonotic disease spillover events from animals to humans. In 2014, the Ministry of Health (MINSA) issued the "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"), which covers zoonotic diseases including leptospirosis, rabies, leishmaniasis and Chagas disease. [1] In 2019, MINSA officials met

with experts from the Pan American Health Organization (PAHO) to review the progress of the Plan. MINSA stated that it was still operating under the 2014-2018 Plan and was developing a new proposal for a 2020-2025 Strategic Plan to replace it. [2] One of the Plan's five components is "Integrated Vector Management", which it defines as identifying local vectors for infection and implementing methods to control them and reduce the risk of infection. In the case of Chagas disease, the Plan identifies the transmission risk posed by two insects and includes actions to reduce their populations. In terms of rabies, the Plan segments municipalities by risk and includes measures to increase vaccination of domesticated animals to break the transmission chain from bats to domestic animals to humans. In terms of leptospirosis, the Plan's activities include identifying critical areas for rodent control to break the chain of transmission to humans. The Plan budgets funds for the aforementioned activities. [1] In 2018, 2019 and 2020, MINSA carried out activities to control the rodent population to reduce the risk of human infections of leptospirosis. [3, 4, 5]

[1] Ministry of Health (Ministerio de Salud). 2014. "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"). [https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=687-plan-estrategico-de-las-eids-nicaragua&category_slug=vigilancia-de-la-salud-publica&Itemid=235]. Accessed 19 August 2020.
[2] Pan American Health Organization (PAHO). 2019. "Evaluation meeting for strategic plan of neglected infectious diseases in Nicaragua". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=951:reunion-de-evaluacion-de-plan-estrategico-de-enfermedades-infecciosas-desatendidas-en-nicaragua-2014-2018&Itemid=244]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2018. "Second rodent control activity launched at national level". [http://www.minsa.gob.ni/index.php/108-noticias-2018/4249-realizan-lanzamiento-de-segunda-jornada-de-desratizacion-a-nivel-nacional]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2019. "MINSA begins third national rodent control activity". [http://www.minsa.gob.ni/index.php/109-noticias-2019/4827-minsa-inicia-tercera-jornada-nacional-de-desratizacion]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "First rodent control campaign begins in Nicaragua". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5073-inicia-primera-jornada-de-desratizacion-en-nicaragua]. Accessed 19 August 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

Nicaragua's "Strategic Plan for Neglected Infectious Diseases 2014-2018" accounts for the surveillance and control of multiple zoonotic pathogens of public health concern, and the country also has technical regulations that account for the surveillance and control of rabies, leptospirosis, bovine tuberculosis and bovine brucellosis. In 2014, the Ministry of Health (MINSA) issued the "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"), which covers zoonotic diseases including leptospirosis, rabies, leishmaniasis and Chagas disease. [1] In 2019, MINSA officials met with experts from the Pan American Health Organization (PAHO) to review the progress of the Plan. MINSA stated that it was still operating under the 2014-2018 Plan and was developing a new proposal for a 2020-2025 Strategic Plan to replace it. [2] The Plan comprises five components, including "Epidemiological Surveillance" and "Integrated Vector Management". The Plan's activities for surveillance include training public health workers, compiling data from across the country, training community-based observers and validating an epidemiological analysis model, among others. The Plan's activities for control include training public health workers, identifying and

stratifying risk, and controlling vectors in outbreak hotspots. [1] In addition, MINSA has issued two technical regulations that account for the surveillance and control of rabies and leptospirosis. Technical Regulation NTON No. 24 002-05 regulates the prevention and control of urban rabies in Nicaragua. The regulations require immediate notification of the Ministry of Health or Ministry of Agriculture if a case of human or animal rabies is suspected. Local health clinics are required to send in brain samples for 1 of every 1,000 dogs in their area. The regulations mention specific forms that must be filled out and sent to central authorities in the event of a case of rabies. Control activities include education of the general public on the risks and signs of rabies and training for health and veterinary workers. [3] Technical Regulation NTON No. 24 001-05 regulates the prevention and control of human leptospirosis. The regulations require immediate notification of the Ministry of Health or Ministry of Agriculture if a case of human or animal leptospirosis is found. In addition, authorities are tasked with identifying risk factors and groups at risk for the pathogen. The Ministry of Health must coordinate with the Ministry of Agriculture to understand the prevalence of the pathogen in the animal population. Control activities include treatment of patients, surveillance of patient contacts, and health prevention and promotion. [4] The Ministry of Agriculture and Forestry's Ministerial Agreements No. 007-2009 and No. 008-2009 regulates the control and eradication of bovine tuberculosis and bovine brucellosis, respectively, in Nicaragua. The regulations require immediate notification of the Directorate of Animal Health if cases of the diseases are found. In addition, regulators can impose quarantine measures and order the elimination of infected animals evidence of the disease is found. Quarantine can only be lifted after three consecutive negative diagnostic tests. [5, 6]

[1] Ministry of Health (Ministerio de Salud). 2014. “Strategic Plan for Neglected Infectious Diseases 2014-2018” (“Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018”). [https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=687-plan-estrategico-de-las-eids-nicaragua&category_slug=vigilancia-de-la-salud-publica&Itemid=235]. Accessed 19 August 2020.
[2] Pan American Health Organization (PAHO). 2019. “Evaluation meeting for strategic plan of neglected infectious diseases in Nicaragua”. [https://www.paho.org/nic/index.php?option=com_content&view=article&id=951:reunion-de-evaluacion-de-plan-estrategico-de-enfermedades-infecciosas-desatendidas-en-nicaragua-2014-2018&Itemid=244]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2006. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Urban Rabies NTON 24 002-05" (“NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE PARA LA PREVENCIÓN Y CONTROL DE LA RABIA URBANA NTON 24 002-05”). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/F679027E797FDA4F062575E700617024?OpenDocument]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2005. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Human Leptospirosis Technical Regulation No. 24 001-05" (“NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE DE PREVENCIÓN Y CONTROL DE LA LEPTOSPIROSIS HUMANA NORMA TÉCNICA No. 24 001-05”). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/2EB06741797170710625757562005909CF?OpenDocument]. Accessed 19 August 2020.
[5] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 007-2009" ("ACUERDO MINISTERIAL No. 007-2009"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/7CDEB38DD3D3C7E10625764A005B5D52?OpenDocument]. Accessed 19 August 2020.
[6] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 008-2009" ("ACUERDO MINISTERIAL No. 008-2009"). [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Bovina/TB%20y%20BR/ACUERDO%20MIN%2008-09%20MEDIDAS%20SANITARIAS%20PARAEL%20CONTROL%20Y%20ERRADICACION%20DE%20LA%20BRUCELOSIS%20BOVINA%20EN%20NIC.pdf]. Accessed 19 August 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

In Nicaragua, there is no public evidence of a department, agency or similar unit dedicated to zoonotic disease that functions across ministries. The Ministry of Health's General Directorate of Public Health Surveillance (DGVSP) is tasked with monitoring zoonotic diseases among humans. [1] The DGVSP's public list of institutional objectives, published on its website, does not include inter-ministerial activities. [2] On the animal health side, the Institute for Agricultural Protection and Health (IPSA) is tasked with monitoring and controlling animal health. [3] IPSA's functions include surveillance to prevent and control outbreaks in agricultural production "in coordination with public and private institutions". However, its functions do not indicate that IPSA functions across ministries. [4] Authorities from DGVSP and IPSA have met about actions to control rabies in the past. In May 2015, the UN Food and Agriculture Organization convened a meeting on the "One Health" strategy on bovine pathogens that included authorities from the DGVSP and IPSA. [5] Websites for the Ministry of Agriculture and the Ministry of Health do not contain any additional information regarding a department, agency or similar unit dedicated to zoonotic disease that functions across ministries. [6, 7] The OIE's 2011 PVS gap analysis report noted that coordination among veterinary services and authorities and across ministries is rare and mechanisms are informal. [8]

[1] Ministry of Health (Ministerio de Salud). 2018. "General Directorate of Public Health Surveillance" ("Dirección General Vigilancia de la Salud Pública"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-Vigilancia-de-la-Salud-P%C3%BAblica/Zoonosis/]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2018. "Presentacion". [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/presentacion]. Accessed 19 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "About IPSA". [https://www.ipsa.gob.ni/ACERCA-DE-IPSA].
[5] PROSAIA. 2015. "Autoridades Sanitarias de Nicaragua se reúnen para fortalecer estrategias de combate de la Rabia Bovina en el marco del Proyecto FAO". [https://www.prosaia.org/autoridades-sanitarias-de-nicaragua-se-reunen-para-fortalecer-estrategias-de-combate-de-la-rabia-bovina-en-el-marco-del-proyecto-fao/]. Accessed 19 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] World Organisation for Animal Health. 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.

1.2.2 Surveillance systems for zoonotic diseases/pathogens

1.2.2a

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

Yes = 1 , No = 0

Current Year Score: 0

In Nicaragua, there is insufficient public evidence that the country has a national mechanism (either voluntary or mandatory) for owners of livestock to conduct and report on disease surveillance to a central government agency. Reporting some

zoonotic and animal diseases is mandatory and the Institute for Agricultural Protection and Health (IPSA) provides informational materials for owners of livestock that state that they should report any signs of illnesses among their animals to the local IPSA office. For example, a brochure on bovine spongiform encephalopathy states that the presence of any symptoms associated with the disease should be "immediately reported to the veterinary doctor from IPSA in the locality". The brochure also provides phone numbers for IPSA local offices throughout the country. [1] Informational materials on pork and poultry production provide similar recommendations and contact information to livestock owners. [2, 3] The Ministry of Health's Technical Regulation NTON No. 24 002-05 on rabies and Technical Regulation NTON No. 24 001-05 on leptospirosis require notification of these diseases, but do not specify a mechanism. [4, 5] The OIE's 2011 PVS gap analysis report noted that coordination among veterinary services and authorities and across ministries is rare and mechanisms are informal. The report did not mention a reporting mechanism for livestock owners and stated that passive surveillance is non-existent in Nicaragua. [6] Websites for the Ministry of Agriculture, IPSA, and the Ministry of Health do not contain any additional information regarding a national mechanism for owners of livestock to conduct and report on disease surveillance to a central government agency. [7, 8, 9]

[1] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). "BSE Brochure". [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Bovina/EEB/Trifoliar%20EEB.pdf]. Accessed 19 August 2020.
[2] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). "Pork Brochure". [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/PPC/Brochur%20Porcino3.pdf]. Accessed 19 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). "Avian Influenza". [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Avicola/Influeza%20Aviar.pdf]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2006. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Urban Rabies NTON 24 002-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE PARA LA PREVENCIÓN Y CONTROL DE LA RABIA URBANA NTON 24 002-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/F679027E797FDA4F062575E700617024?OpenDocument]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2005. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Human Leptospirosis Technical Regulation No. 24 001-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE DE PREVENCIÓN Y CONTROL DE LA LEPTOSPIROSIS HUMANA NORMA TÉCNICA No. 24 001-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/2EB06741797170710625756200590 9CF?OpenDocument]. Accessed 19 August 2020.
[6] World Organisation for Animal Health. 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[9] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.

1.2.2b

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

Yes = 1 , No = 0

Current Year Score: 0

In Nicaragua, there is insufficient publicly available evidence of laws or regulations that safeguard the confidentiality of information generated through surveillance activities for animals in Nicaragua. Neither Law No. 291, the Framework Law for Animal Health and Vegetable Food Safety, nor Decree No. 2-99, the regulations for Law No. 291, contain guidelines to safeguard animal owner confidentiality. [1, 2] The websites of the Ministry of Health and Ministry of Agriculture do not describe guidelines to safeguard animal owner confidentiality. [3, 4] The website of the Institute for Agricultural Protection and Health (IPSA) contains the Quality Policy for the Central Laboratory for Veterinary Diagnosis and Food Microbiology (LCDVMA). The policy states that the laboratory handles information confidentially for all public and private clients that use its services. However, the policy does not point to a specific regulation that requires confidentiality. [5] Law No. 787 of 2012, Nicaragua's Data Protection Law, does not describe specific data protections for animal owners or epidemiological surveillance activities. In fact, Article 14 makes exceptions for international data transfer when it is necessary to conduct an epidemiological investigation. It states: "The cession and transfer of any type of personal data to countries or international organizations that do not provide adequate levels of security and protection is prohibited. The prohibition will not be enforced in cases of international judicial cooperation, exchange of personal data as it relates to health, when it is required for epidemiological investigations…". [6] Nicaragua's Public Information Access Law (Law No. 621 of 2007) provides protections for personal data held by the government. Article 1 states that private information held by the government is not available to the public. Private information is defined to include personal data for individuals. [7] The OIE's 2011 PVS gap analysis report does not mention confidentiality for animal owners. [8]

[1] President of the Republic of Nicaragua. 1998. "Basic Law for Animal Health and Vegetable Safety Law No. 291" ("LEY BÁSICA DE SALUD ANIMAL Y SANIDAD VEGETAL Ley No. 291"). [http://www.vertic.org/media/National%20Legislation/Nicaragua/NI_Ley_291_Salud_Animal_y_Sanidad_Vegetal_1998.pdf]. Accessed 18 August 2020.
[2] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 291 Basic Law for Animal Health and Vegetable Safety Decree No. 2-99" ("REGLAMENTO A LA LEY No. 291.LEY BÁSICA DE SALUD ANIMAL Y SANIDAD VEGETAL DECRETO No. 2-99"). [http://www.vertic.org/media/National%20Legislation/Nicaragua/NI_Decreto_2-99_Rgto_Ley_Salud_Animal_y_Vegetal.pdf]. Accessed 18 August 2020.
[3] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Central Laboratory for Veterinary Diagnosis and Food Microbiology". [https://www.ipsa.gob.ni/LABORATORIOS/LAB-Central-de-Diagnostico-Veterinario-y-Microbiologia-de-Alimentos#ad-image-2]. Accessed 19 August 2020.
[6] President of the Republic of Nicaragua. 2012. "Law for the Protection of Personal Data Law No. 787" ("LEY DE PROTECCIÓN DE DATOS PERSONALES LEY No. 787"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/9e314815a08d4a6206257265005d21f9/e5d37e9b4827fc06062579ed0076ce1d]. Accessed 19 August 2020.
[7] President of the Republic of Nicaragua. 2007. "Law for the Access to Public Information Law No. 621" ("LEY DE ACCESO A LA INFORMACIÓN PÚBLICA LEY No. 621"). [https://www.mag.gob.ni/documents/Legislacion/Leyes/Ley621.pdf]. Accessed 19 August 2020.
[8] World Organisation for Animal Health. 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 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: 0

There is insufficient evidence that Nicaragua conducts surveillance of zoonotic disease in wildlife. In 2014, the Ministry of Health (MINSA) issued the "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"), which covers zoonotic diseases including leptospirosis, rabies, leishmaniasis and Chagas disease. [1] In 2019, MINSA officials met with experts from the Pan American Health Organization (PAHO) to review the progress of the Plan. MINSA stated that it was still operating under the 2014-2018 Plan and was developing a new proposal for a 2020-2025 Strategic Plan to replace it. [2] The Plan comprises five components, including "Epidemiological Surveillance". The Plan's activities related to wildlife surveillance include "pilot studies to characterize the situation among hosts-reservoirs" for leptospirosis, "execution of comprehensive actions in critical areas, among them strengthening the diagnostic capacities in animals and actions to avoid the spillover of bacteria" also for leptospirosis, and "100% of municipalities in the country carrying out surveillance, prevention and control activities for rabies in wildlife in coordination with other institutions". [1] In terms of the animal health sector, a 2016 presentation on epidemiological surveillance from the Institute for Agricultural Protection and Health (IPSA) does not mention any surveillance activities among wildlife. [3] The OIE's 2011 PVS gap analysis report states that Nicaragua does not have procedures to identify emerging threats, such as via surveillance of zoonotic disease in wildlife. [4] Websites for the Ministry of Agriculture, IPSA, and the Ministry of Health do not contain additional information regarding surveillance of zoonotic disease in wildlife. [5, 6, 7]

[1] Ministry of Health (Ministerio de Salud). 2014. "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018").
[https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=687-plan-estrategico-de-las-eids-nicaragua&category_slug=vigilancia-de-la-salud-publica&Itemid=235]. Accessed 19 August 2020.
[2] Pan American Health Organization (PAHO). 2019. "Evaluation meeting for strategic plan of neglected infectious diseases in Nicaragua". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=951:reunion-de-evaluacion-de-plan-estrategico-de-enfermedades-infecciosas-desatendidas-en-nicaragua-2014-2018&Itemid=244]. Accessed 19 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2016. "Epidemiological surveillance as a tool for prevention and control of diseases among agricultural species".
[https://www.ipsa.gob.ni/Portals/0/Noticias/Congreso%20bovino/VIGILANCIA%20EPIDEMIOLOGICA%20COMO%20HERRAMIENTA%20DE%20PREVENCION%20Y%20CONTROL%20DE%20ENFERMEDADES%20DE%20LAS%20ESPECIES%20PECUARIAS.pdf]. Accessed 19 August 2020.
[4] World Organisation for Animal Health. 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 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: 3.36

2018

OIE WAHIS database

1.2.4b

Number of veterinary para-professionals per 100,000 people

Input number

Current Year Score: 2.72

2018

OIE WAHIS database

1.2.5 Private sector and zoonotic

1.2.5a

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

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that a 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. Nicaragua's zoonotic disease plans and regulations include some evidence of mechanisms for working with the private sector in controlling or responding to zoonoses. The General Health Law (Law No. 423 of 2002) states that it applies to the entire health sector, including private facilities and institutions. Article 24 of the General Health Law states that the Ministry of Health (MINSA) will coordinate with other government agencies to issue regulations and actions to protect the population from zoonotic diseases. [1] MINSA's Technical Regulation NTON No. 24 002-05 regulates the prevention and control of urban rabies in Nicaragua. [2] Technical Regulation NTON No. 24 001-05 regulates the prevention and control of human leptospirosis. [3] Both technical regulations include activities and mechanisms for working with the private sector, including awareness and promotion of prevention of zoonoses, training for professional groups likely to encounter zoonoses, coordination with the news media to educate the

public, targeted vaccination campaigns for at-risk populations, coordination with agricultural trade associations to improve health conditions, and promoting the engagement of healthcare professionals with the news media to share trustworthy information. [2, 3] In 2014, the Ministry of Health (MINSA) issued the "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"), which covers zoonotic diseases including leptospirosis, rabies, leishmaniasis and Chagas disease. [4] In 2019, MINSA officials met with experts from the Pan American Health Organization (PAHO) to review the progress of the Plan. MINSA stated that it was still operating under the 2014-2018 Plan and was developing a new proposal for a 2020-2025 Strategic Plan to replace it. [5] The Plan comprises five components, including "Integrated Vector Management", which is defined to include collaboration "with other public and private sectors that impact the reproduction of vectors" and "the committed participation of communities and local interests". [4] In the animal health sector, in 2009, the Ministry of Agriculture and Forestry issued Ministerial Agreement No. 008-2009 for the control and eradication of bovine brucellosis in Nicaragua, which states in Article 4 that private sector veterinary doctors and other professionals can be certified to participate in control and eradication efforts for the disease. [5]

[1] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" ("LEY GENERAL DE SALUD LEY No. 423"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2006. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Urban Rabies NTON 24 002-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE PARA LA PREVENCIÓN Y CONTROL DE LA RABIA URBANA NTON 24 002-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/F679027E797FDA4F062575E700617024?OpenDocument]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2005. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Human Leptospirosis Technical Regulation No. 24 001-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE DE PREVENCIÓN Y CONTROL DE LA LEPTOSPIROSIS HUMANA NORMA TÉCNICA No. 24 001-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/2EB06741797170710625756200590 9CF?OpenDocument]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2014. "Strategic Plan for Neglected Infectious Diseases 2014-2018" ("Plan Estratégico de Enfermedades Infecciosas Desatendidas 2014-2018"). [https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=687-plan-estrategico-de-las-eids-nicaragua&category_slug=vigilancia-de-la-salud-publica&Itemid=235]. Accessed 19 August 2020.
[5] Pan American Health Organization (PAHO). 2019. "Evaluation meeting for strategic plan of neglected infectious diseases in Nicaragua". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=951:reunion-de-evaluacion-de-plan-estrategico-de-enfermedades-infecciosas-desatendidas-en-nicaragua-2014-2018&Itemid=244]. Accessed 19 August 2020.
[6] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2009. "Ministerial Agreement No. 008-2009" ("ACUERDO MINISTERIAL No. 008-2009"). [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Bovina/TB%20y%20BR/ACUERDO%20MIN%2008-09%20MEDIDAS%20SANITARIAS%20PARAEL%20CONTROL%20Y%20ERRADICACION%20DE%20LA%20BRUCELOSIS%20BOVINA%20EN%20NIC.pdf]. Accessed 19 August 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 publicly available evidence that Nicaragua has 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. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology and Verification Research, Training and Information Centre (VERTIC) do not contain information regarding a record of facilities in which especially dangerous pathogens and toxins are stored or processed. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding a record of the facilities in which especially dangerous pathogens and toxins are stored or processed. [7]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence of legislation and/or regulations related to biosecurity. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, and

Nicaraguan Council of Science and Technology do not contain information regarding biosecurity. [1, 2, 3, 4, 5] There is no national institute of health and the national laboratory system does not have a website. [1] A search for the term 'biosecurity' ('biocustodia') at the government's database of legislation did not return any results. [6] The legislation listed for Nicaragua at the Verification Research, Training and Information Centre (VERTIC) Biological Weapons Convention Legislation database does not contain additional information 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. [7] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding biosecurity. [8]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] National Assembly of Nicaragua (Asamblea Nacional de Nicaragua). 2020. "National Assembly of Nicaragua" ("Asamblea Nacional de Nicaragua"). [https://www.asamblea.gob.ni/]. Accessed 19 August 2020.
[7] Verification Research, Training and Information Centre (VERTIC). 2020. "Nicaragua". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[8] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence that the government has an established agency responsible for the enforcement of biosecurity legislation and regulations. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology and Verification Research, Training and Information Centre (VERTIC) do not contain information regarding biosecurity. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] A search for the term 'biosecurity' ('biocustodia') at the government's database of legislation did not return any results. [7] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding a biosecurity agency. [8]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.

[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] National Assembly of Nicaragua (Asamblea Nacional de Nicaragua). 2020. "National Assembly of Nicaragua" (“Asamblea Nacional de Nicaragua”). [https://www.asamblea.gob.ni/]. Accessed 19 August 2020.
[8] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence that the government has taken action to consolidate its inventories of especially dangerous pathogens and toxins into a minimum number of facilities. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology and Verification Research, Training and Information Centre (VERTIC) do not contain information regarding inventories of especially dangerous pathogens and toxins. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding inventories of especially dangerous pathogens and toxins. [7]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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 insufficient public evidence that that Nicaragua has the capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax and/or Ebola. In terms of Ebola, public statements indicate Nicaragua may be able to carry out PCR testing for Ebola, but there is no official confirmation of this. In 2014, the general secretary of the Federation of Healthcare Workers (FETSALUD) expressed in public interviews that Nicaragua is the only country in Central America with the capacity to perform a real-time PCR test for any virus, including dengue, chikungunya and Ebola. [1, 2] The director of the Ministry of Health's National Centre for Diagnosis and Reference (CNDR, national reference laboratory) also stated that the CNDR has trained human resources to carry out diagnostic testing of Ebola, although he did not specifically mention PCR as a diagnostic method. [3] There is no national institute of health and the national laboratory system does not have a website. [4] In terms of anthrax, the website of the Institute for Agricultural Protection and Health (IPSA) contains the price list for the Central Laboratory for Veterinary Diagnosis and Food Microbiology (LCDVMA). The list shows that the laboratory can test for anthrax via culture or smear. [5] The list shows PCR testing for other pathogens, but not for anthrax. [5] The OIE's 2011 PVS gap analysis report states that Nicaragua performs very little surveillance activity regarding anthrax and does not mention diagnostic capabilities. [6] Nonetheless, there is public evidence that Nicaragua can perform PCR testing for both Zika virus and the coronavirus that causes COVID-19. [7, 8] The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, and Nicaraguan Council of Science and Technology do not contain additional or more recent information regarding in-country capacity to conduct Polymerase Chain Reaction (PCR)-based diagnostic testing for anthrax and/or Ebola. [4, 9, 10, 11, 12]

[1] Radio La Primerísima. 2014. "Nicaragua se prepara ante ébola". [http://www.radiolaprimerisima.com/noticias/general/167810/nicaragua-se-prepara-ante-ebola/]. Accessed 19 August 2020.
[2] El Nuevo Diario. 2014. "Nicaragua se alista para poner cerco al ébola". [https://www.elnuevodiario.com.ni/nacionales/326912-nicaragua-se-alista-poner-cerco-ebola/]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2014. "NICARAGUA PREPARADA ANTE ALERTA INTERNACIONAL DE OMS POR EBOLA". [http://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1113-nicaragua-preparada-ante-alerta-internacional-de-oms-por-ebola]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2012. "Cost for tests at LCDVMA". [https://www.ipsa.gob.ni/Portals/0/2%20Laboratorios/Documentos%20Veterinario/TARIFA%20DE%20LOS%20ENSAYOS%20LCDVMA.pdf]. Accessed 19 August 2020.
[6] World Organization for Animal Health. 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[7] El País. 2020. "Government of Daniel Ortega takes advantage of the pandemic that it minimized". [https://elpais.com/sociedad/2020-08-02/el-gobierno-de-daniel-ortega-le-saca-reditos-a-la-pandemia-que-minimizo.html]. Accessed 19 August 2020.
[8] World Health Organization. 2016. "February 2016 Zika Americas Region". [https://www.who.int/csr/don/8-february-2016-zika-americas-region/es/]. Accessed 19 August 2020.
[9] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[10] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[11] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[12] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 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 trainthe-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

In Nicaragua, there is no publicly available evidence of a requirement for biosecurity training for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology and Verification Research, Training and Information Centre (VERTIC) do not contain information regarding biosecurity training in Nicaragua. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] A search for the term 'biosecurity' ('biocustodia') at the government's database of legislation did not return any results. [7] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding a requirement for biosecurity training for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. [8]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. "Nicaragua". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] National Assembly of Nicaragua (Asamblea Nacional de Nicaragua). 2020. "National Assembly of Nicaragua" ("Asamblea Nacional de Nicaragua"). [https://www.asamblea.gob.ni/]. Accessed 19 August 2020.
[8] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence of regulations or licensing conditions that specify that security and other personnel with access to especially dangerous pathogens, toxins, or biological materials with pandemic potential are subject to personnel vetting. Licensing conditions in Nicaragua specify that the legal representative of a firm that seeks to work with or import substances that contain dangerous precursor chemicals must undergo a background check. The Ministry of Health's licensing conditions for firms to work with or import dangerous precursor chemicals require that the firm's legal representative present a certificate of good conduct issued by the National Police. A recent, original certificate must be presented with the application for a health license in order for firms to receive permission to work with these chemicals. [1, 2, 3] Neither the documentation listed above, nor the Medicines and Pharmacies Law (Law No. 292 of 1998) defines dangerous precursor chemicals, so it is unclear if they include especially dangerous pathogens, toxins, or biological materials with pandemic potential. [4] The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding personnel vetting for individuals working with especially dangerous pathogens, toxins, or biological materials with pandemic potential. [5, 6, 7, 8, 9, 10] There is no national institute of health and the national laboratory system does not have a website. [5] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding personnel vetting. [11]

[1] Ministry of Health (Ministerio de Salud). 2018. "Solicitud de autorización y emisión de licencia sanitaria de funcionamiento de establecimientos que importan y distribuyen solventes diversos que contienen sustancias químicas precursoras". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/Requisitos-Establecimientos/Requisitos/Solicitud-de-autorizaci%C3%B3n-y-emisi%C3%B3n-de-licencia-sanitaria-de-funcionamiento-de-establecimientos-que-importan-y-distribuyen-solventes-diversos-que-contienen-sustancias-qu%C3%ADmicas-precursoras./]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2018. "Solicitud de autorización y emisión de licencia sanitaria de funcionamiento de laboratorio fabricante solventes diversos que contienen sustancias químicas precursoras". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/Requisitos-Establecimientos/Requisitos/Solicitud-de-autorizaci%C3%B3n-y-emisi%C3%B3n-de-licencia-sanitaria-de-funcionamiento-de-laboratorio-fabricante-solventes-diversos-que-contienen-sustancias-qu%C3%ADmicas-precursoras/]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2018. "Solicitud de autorización y emisión de licencia sanitaria de funcionamiento de establecimientos que importan y distribuyen plaguicidas de uso doméstico o de uso profesional". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/Requisitos-Establecimientos/Requisitos/Solicitud-de-autorizaci%C3%B3n-y-emisi%C3%B3n-de-licencia-sanitaria-de-funcionamiento-de-establecimientos-que-importan-y-distribuyen-plaguicidas-de-uso-dom%C3%A9stico-o-de-uso-profesional/]. Accessed 19 August 2020.
[4] President of the Republic of Nicaragua. 1998. "Law for Medicines and Pharmacies Law No. 292" ("LEY DE MEDICAMENTOS Y FARMACIAS LEY No. 292"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/10B9BC0F73CCA7FD062570A10057793D?OpenDocument]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[8] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[9] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 2020.

[10] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[11] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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: 0

In Nicaragua, there is no publicly available evidence of regulations on the safe and secure transport of infectious substances that mention Categories A and B. Regulations are segmented by type of transport. In the maritime sector, in 2014, the Ministry of Transport and Infrastructure issued the Regulations on the Handling, Transport and Storage of Dangerous Merchandise in Nicaraguan Ports. Article 52 of the regulations states that toxic and infectious substances can only be stored in warehouses with forced air handling systems or outside. Article 57 states that infectious substances cannot be permanently stored in port areas. [1] In terms of ground transport, the Regulations of the General Ground Transport Law (Decree 42-2005) classify infectious substances as Class 6, using the International Maritime Dangerous Goods Code. The regulations do not mention Categories A and B. [2] In the air transport sector, Aeronautic Technical Regulation No. 18 (RTA-18) states that toxic and infectious substances must be transported according to the manual approved by the Aeronautic Authority (INAC). [3] INAC’s Inspector’s Manual for Dangerous Merchandise states that infectious materials must be labeled with the contact’s phone number and that there must be a statement of prior arrangement on file that describes who is responsible and where the materials are going. [4] Nicaragua’s most detailed regulations are regarding dangerous solid waste, which includes infectious biological waste. The Ministry of Environment’s Technical Regulations No. 05 015-02 regulates the handling and elimination of dangerous solid waste. Section 7 deals with transport, requiring routes to avoid highly populated areas, placing liability with the transporter, and requiring refrigeration of infectious substances, among other requirements. [5] The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Ministry of Transport and Infrastructure, Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding the safe and secure transport of infectious substances. [6, 7, 8, 9, 10, 11, 12] There is no national institute of health and the national laboratory system does not have a website. [6] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding regulations on the safe and secure transport of infectious substances that mention Categories A and B. [13]

[1] Ministry of Transport and Infrastructure (MINISTERIO DE TRANSPORTE E INFRAESTRUCTURA). 2014. "Regulations Handling, Transport and Storage of Dangerous Merchandise in Nicaraguan Ports" (“Reglamento Manejo, Transporte y Almacenamiento de Mercancías Peligrosas en Puertos Nicaragüenses”). [http://www.epn.com.ni/docs_2016/mercanciaspeligrosas.pdf]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 2005. "Decree 42-2005 Regulations for the General Law of Ground Transport" (“DECRETO 42-2005 REGLAMENTO DE LEY GENERAL DE TRANSPORTE TERRESTRE”. [http://www.amunic.org/wp-content/uploads/2016/10/Decreto-42-2005-Reglamento-de-Ley-524-General-de-Transporte-Terrestre.pdf] Accessed 19 August 2020.

[3] Nicaraguan Institute of Civil Aeronautics (INSTITUTO NICARAGÜENSE DE AERONÁUTICA CIVIL). 2012. "Transportation without risks of Dangerous Merchandise by Air INAC RTA-18" ("TRANSPORTE SIN RIESGOS DE MERCANCIAS PELIGROSAS POR VIA AEREA INAC RTA-18"). [http://www.inac.gob.ni/wp-content/uploads/2016/04/RTA-18-Edicion1_Enmienda2.pdf]. Accessed 19 August 2020.
[4] Nicaraguan Institute of Civil Aeronautics (INSTITUTO NICARAGÜENSE DE AERONÁUTICA CIVIL). 2008. "Manual of the Inspector of Dangerous Merchandise INAC MIMP" ("MANUAL DEL INSPECTOR DE MERCANCIAS PELIGROSAS INAC MIMP"). [http://www.inac.gob.ni/wp-content/uploads/legacy/doc/1222805503_Proced_MMP.pdf] Accessed 19 August 2020.
[5] Ministry of the Environment and Natural Resources (Ministerio de Ambiente y Recursos Naturales). 2002. "Technical Regulations for the Handling and Elimination of Dangerous Solid Waste Technical Regulation No. 05 015-02" ("NORMA TÉCNICA PARA EL MANEJO Y ELIMINACIÓN DE RESIDUOS SÓLIDOS PELIGROSOS NORMA TÉCNICA No. 05 015-02"). [http://extwprlegs1.fao.org/docs/pdf/nic163798.pdf]. Accessed 19 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[8] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[9] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[10] Verification Research, Training and Information Centre (VERTIC). 2020. "Nicaragua". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[11] Ministry of Transport and Infrastructure (MINISTERIO DE TRANSPORTE E INFRAESTRUCTURA). 2020. "Inicio – MTI". [https://www.mti.gob.ni/index.php]. Accessed 19 August 2020.
[12] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[13] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no public evidence of legislation, regulation, or other guidance in place to oversee the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. Regulations from the Ministry of Transport and Infrastructure require documentation describing any product for import or export to accompany all shipments. Documentation must contain an exact description of the contents of the shipment, origin, destination, and notification if the shipment contains toxic or other dangerous substances. Regulations do not mention dangerous pathogens or end user screening. [1] Additional regulations from the Civil Aeronautic Institute (Regulation INAC RTA 18) describe cooperation between countries regarding the transport of dangerous materials, allowing for communication between Nicaragua and other countries regarding the transport of dangerous substances. Regulations do not mention dangerous pathogens or end user screening. [2] The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology, Ministry of Development, Industry and Commerce, and Verification Research, Training and Information Centre (VERTIC) do

not contain additional information regarding the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. [3, 4, 5, 6, 7, 8, 9] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding the cross-border transfer and end-user screening of especially dangerous pathogens, toxins and pathogens with pandemic potential. [10]

[1] Ministry of Transport and Infrastructure (MINISTERIO DE TRANSPORTE E INFRAESTRUCTURA). 2014. "Regulations Handling, Transport and Storage of Dangerous Merchandise in Nicaraguan Ports" ("Reglamento Manejo, Transporte y Almacenamiento de Mercancías Peligrosas en Puertos Nicaragüenses").
[http://www.epn.com.ni/docs_2016/mercanciaspeligrosas.pdf]. Accessed 19 August 2020.
[2] Nicaraguan Institute of Civil Aeronautics (INSTITUTO NICARAGÜENSE DE AERONÁUTICA CIVIL). 2012. "Transportation without risks of Dangerous Merchandise by Air INAC RTA-18" ("TRANSPORTE SIN RIESGOS DE MERCANCIAS PELIGROSAS POR VIA AEREA INAC RTA-18"). [http://www.inac.gob.ni/wp-content/uploads/2016/04/RTA-18-Edicion1_Enmienda2.pdf]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Verification Research, Training and Information Centre (VERTIC). 2020. "Nicaragua".
[https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[5] Ministry of Development, Industry and Commerce (Ministerio de Fomento, Industria y Comercio). 2020. "MIFIC".
[https://www.mific.gob.ni/]. Accessed 19 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio".
[https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[8] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua").
[https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[9] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni".
[http://conicyt.gob.ni/]. Accessed 19 August 2020.
[10] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

Nicaragua's Ministry of Health (MINSA) has issued national biosafety regulations. Article 16 of Decree No. 001-2003, which provides regulations for the General Health Law, states that MINSA regulates all healthcare providers, public and private. Article 77 of the regulations states that facilities supervised by MINSA must ensure the application of biosafety regulations. [1] MINSA's Regulation 079 of 2011 provides a Biosafety Manual for Health Sector Personnel Providing Care to Persons with HIV/AIDS, although the application of biosafety practices is not limited to this population. The regulations apply to all healthcare facilities, both public and private, and establish the universality of biosafety regulations beyond just a specific disease. Specifically, the regulations state in Objective 1: "To provide healthcare sector personnel with a Biosafety Manual

that allows them to prevent accidents from exposure to blood or bodily fluids". This objective is not limited to just healthcare workers providing care to persons with HIV/AIDS. The regulations set out basic principles of biosafety: universality, use of barriers, measures to eliminate contaminated materials, elimination of toxic materials, ethics, and bioethics. In addition, the regulations provide general guidelines on biosafety for all healthcare workers as well as specific guidelines for different hospital departments (emergency room, operating room, laboratory, and others). [2] Decree No. 25-2006 outlines functions within MINSA and tasks the Directorate of Health Regulation with creating and applying biosafety regulations, with support from the Directorate of Parasitology and others. [3] In the agricultural sector, Decree No. 2-99, which provides regulations for Law No. 291 Basic Law for Animal Health and Vegetable Food Safety, provides a definition of biosafety in the agricultural context, but the term does not appear anywhere else in the regulations. [4] Two academic studies from 2015 surveyed the prevalence of biosafety training among healthcare workers at two separate hospitals. In one, only 11% of 81 workers surveyed had received biosafety training, while the other found that 75% of 43 nursing staff surveyed had received such training. [5, 6] In addition, Nicaragua has a biosafety law related to GMOs and agriculture. Law No. 705 of 2009 tasked the Ministry of Agriculture and Forestry with supervising these activities and created a National Biosafety Commission, that only deals with GMO biosafety issues. [7] The legislation listed for Nicaragua at the VERTIC Biological Weapons Convention Legislation database does not contain additional information related to national biosafety regulations. [8] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding national biosafety regulations. [9]

[1] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" (“REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2011. "Regulation - 079 'Biosafety Manual for Health Sector Personnel Providing Care to Persons with HIV/AIDS'" (“Normativa - 079 'Manual de Bioseguridad para el Personal del Sector Salud en la Atención de Personas con VIH - Sida'”). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2011/Normativa---079-Manual-de-Bioseguridad-para-el-Personal-del-Sector-Salud-en-la-Atenci%C3%B3n-de-Personas-con-VIH---Sida/]. Accessed 19 August 2020.
[3] President of the Republic of Nicaragua. 2006. "Reforms and Additions to Decree No. 71-98, Regulations for Law No. 290, Law of Organisation, Competence and Procedures for the Executive Branch Decree No. 25-2006" (“REFORMAS Y ADICIONES AL DECRETO No. 71-98, REGLAMENTO DE LA LEY No. 290, LEY DE ORGANIZACIÓN, COMPETENCIA Y PROCEDIMIENTOS DEL PODER EJECUTIVO DECRETO No. 25-2006”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/54B86D7CF4A7B77D0625755F007A11A8?OpenDocument]. Accessed 19 August 2020.
[4] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 291 Basic Law for Animal Health and Vegetable Safety Decree No. 2-99" (“REGLAMENTO A LA LEY No. 291.LEY BÁSICA DE SALUD ANIMAL Y SANIDAD VEGETAL DECRETO No. 2-99”). [http://www.vertic.org/media/National%20Legislation/Nicaragua/NI_Decreto_2-99_Rgto_Ley_Salud_Animal_y_Vegetal.pdf]. Accessed 18 August 2020.
[5] Perez Alarcon, Inés Vanessa. 2016. "Knowledge and Application of Biosafety Measures among health workers, associated with the prevention of occupational accidents, Primary Hospital Carlos Fonseca Amador, in the municipality of Mulukuku, November-December, 2015" (“Conocimiento y Aplicación de las Medidas de Bioseguridad en trabajadores de la salud, asociados a la prevención de accidentes ocupacionales , Hospital Primario Carlos Fonseca Amador, en el municipio de Mulukukú, Noviembre –Diciembre, 2015”). [http://repositorio.unan.edu.ni/2510/1/75807.pdf]. Accessed 19 August 2020.
[6] Barrios, N. 2015. “Compliance with biosafety regulations by nursing personnel in the Masaya Hospital Specialized Medical Services”. [https://repositorio.unan.edu.ni/5209/1/t43.pdf]. Accessed 19 August 2020.
[7] President of the Republic of Nicaragua. 2009. "Law on the Prevention of Risks from Living Organisms Modified by Molecular Biotechnology Law No. 705" (“LEY SOBRE PREVENCIÓN DE RIESGOS PROVENIENTES DE ORGANISMOS VIVOS MODIFICADOS POR MEDIO DE BIOTECNOLOGÍA MOLECULAR Ley No. 705”).

[http://legislacion.asamblea.gob.ni/Normaweb.nsf/3133c0d121ea3897062568a1005e0f89/df620baeb2bbb47c062577290052cbb8?OpenDocument]. Accessed 19 August 2020.
[8] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[9] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 2020.

1.4.1b

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

Yes = 1 , No = 0

Current Year Score: 1

The Ministry of Health (MINSA) is Nicaragua’s established agency responsible for the enforcement of biosafety legislation and regulations. Article 77 of Decree No. 001-2003, which provides regulations for the General Health Law, states that the MINSA must ensure the application of biosafety regulations in all facilities under its supervision. Article 16 establishes that MINSA regulates all healthcare providers, public and private. [1] Decree No. 25-2006 outlines functions within MINSA and tasks the Directorate of Health Regulation with creating and applying biosafety regulations, with support from the Directorate of Parasitology, the Directorate of Microbiology, the Directorate of the Clinical Laboratory and others. [2] In addition, MINSA's Regulation 079 of 2011 provides a Biosafety Manual for Health Sector Personnel Providing Care to Persons with HIV/AIDS and states that the General Directorate of Extension and Quality of Care is tasked with the implementation and monitoring of the biosafety program outlined in the manual. [3] Nicaragua also has a biosafety law related to GMOs and agriculture. Law No. 705 of 2009 tasked the Ministry of Agriculture and Forestry with supervising these activities and created a National Biosafety Commission, that only deals with GMO biosafety issues. MINSA has a seat on this commission. [4] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding an established agency responsible for the enforcement of biosafety legislation and regulations. [5]

[1] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" (“REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 2006. "Reforms and Additions to Decree No. 71-98, Regulations for Law No. 290, Law of Organisation, Competence and Procedures for the Executive Branch Decree No. 25-2006" (“REFORMAS Y ADICIONES AL DECRETO No. 71-98, REGLAMENTO DE LA LEY No. 290, LEY DE ORGANIZACIÓN, COMPETENCIA Y PROCEDIMIENTOS DEL PODER EJECUTIVO DECRETO No. 25-2006”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/54B86D7CF4A7B77D0625755F007A11A8?OpenDocument]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2011. "Regulation - 079 'Biosafety Manual for Health Sector Personnel Providing Care to Persons with HIV/AIDS'" (“Normativa - 079 'Manual de Bioseguridad para el Personal del Sector Salud en la Atención de Personas con VIH - Sida'”). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2011/Normativa---079-Manual-de-Bioseguridad-para-el-Personal-del-Sector-Salud-en-la-Atenci%C3%B3n-de-Personas-con-VIH---Sida/]. Accessed 19 August 2020.
[4] President of the Republic of Nicaragua. 2009. "Law on the Prevention of Risks from Living Organisms Modified by Molecular Biotechnology Law No. 705" (“LEY SOBRE PREVENCIÓN DE RIESGOS PROVENIENTES DE ORGANISMOS VIVOS MODIFICADOS POR MEDIO DE BIOTECNOLOGÍA MOLECULAR Ley No. 705”).

[http://legislacion.asamblea.gob.ni/Normaweb.nsf/3133c0d121ea3897062568a1005e0f89/df620baeb2bbb47c062577290052cbb8?OpenDocument]. Accessed 19 August 2020.
[5] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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 trainthe-trainer program, for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential?

Yes = 1 , No = 0

Current Year Score: 0

In Nicaragua, biosafety training is required for personnel working in facilities housing or working with especially dangerous pathogens, toxins, or biological materials with pandemic potential, but there is no public evidence that training employs a standardized approach, such as through a common curriculum or a train-the-trainer program. In 2005, the Ministry of Labor issued the “Ministerial Regulation on Applied Labor Hygiene and Safety in the Prevention of Biological Risks from Biological Agents, with Emphasis on HIV/AIDS”. The regulation mentions HIV/AIDS specifically, and also references "other biological agents" without naming them specifically. Biological agents are divided into four categories, according to the risk of infection. Article 2 states that the regulation applies to all workplaces where workers face risks from HIV/AIDS and other biological agents, including in the following sectors: healthcare, laboratories, livestock, agriculture, and others. Article 4 states that all employers are required to provide periodic employee training on “technical procedures for prevention, safety and proper use of personal protection equipment”. Articles 35 and 37 expand on this requirement, including training topics such as potential health risks, proper clothing, and procedures in case of an accident. [1] In addition, Articles 51, 56 and 96 of Decree No. 001-2003, which provides regulations for the General Health Law, state that health facilities must provide ongoing training for employees, although they do not mention biosafety or pandemic pathogens specifically. [2] In 2014, the Ministry of Health (MINSA) carried out a series of biosafety trainings for healthcare workers across the country in response to the potential of an Ebola outbreak. [3, 4, 5] However, during the 2020 COVID-19 pandemic the Nicaraguan Medical Association (AMN), which groups 40 professional organizations in the country, called on MINSA to provide biosafety equipment and training to healthcare workers as provided for in World Health Organization guidelines. [6] In the agriculture sector, Regulation NTOM 11 030-11 on the inspection and certification of poultry farms requires that farms provide continuous personnel training in biosafety. [7] The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding biosafety training, using a standardized, required approach. [8, 9, 10, 11, 12] There is no national institute of health and the national laboratory system does not have a website. [8] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding biosafety training, using a standardized, required approach. [13]

[1] Ministry of Labour (Ministerio de Trabajo). 2005. "Ministerial Regulation on Workplace Hygiene and Safety Applied in the Prevention of Biological Risks, Provoked by Biological Agents, with an Emphasis on HIV/AIDS" (“NORMA MINISTERIAL DE HIGIENE Y SEGURIDAD DEL TRABAJO APLICADA EN LA PREVENCIÓN DE LOS RIESGOS BIOLÓGICOS, PROVOCADOS POR AGENTES BIOLÓGICOS, CON ÉNFASIS ANTE EL VIH/SIDA”).
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/3133c0d121ea3897062568a1005e0f89/01c95bbe162c58f60625756200597f91?OpenDocument]. Accessed 19 August 2020.

[2] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" ("REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2014. "CAPACITACION SOBRE EL EBOLA A TRABAJADORES DE LA SALUD DE MASAYA". [http://www.minsa.gob.ni/index.php/galeria-foto/62-27/detail/1321-celebran-iv-aniversario-del-movimiento-de-enfermer-s-auxiliares-y-tecnicos-sandinistas?tmpl=component&phocadownload=2]. Accessed 19 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2014. "PERSONAL DE SALUD Y GABINETES DE LA FAMILIA SE CAPACITAN SOBRE EL EBOLA". [https://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1345-personal-de-salud-y-gabinetes-de-la-familia-se-capacitan-sobre-el-ebola]. Accessed 19 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2014. "CONCLUYE CAPACITACION SOBRE EL EBOLA IMPARTIDA POR ESPECIALISTAS CUBANOS". [http://www.minsa.gob.ni/index.php/103-noticias-2014/1391-concluye-capacitacion-sobre-el-ebola-impartida-por-especialistas-cubanos]. Accessed 19 August 2020.
[6] EFE. 2020. "Medical association in Nicaragua calls for protective measures against COVID-19". [https://www.msn.com/es-us/noticias/otras/gremio-m%C3%A9dico-de-nicaragua-urge-medidas-de-protecci%C3%B3n-ante-covid-19/ar-BB136wcv]. Accessed 19 August 2020.
[7] Ministry of Agriculture and Forestry (Ministerio Agropecuario y Forestal). 2012. "NTON 11 030 - 11 Nicaraguan Compulsory Technical Regulation. Inspection and Certification of Poultry Facilities" ("NTON 11 030 - 11 NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE. INSPECCIÓN Y CERTIFICACIÓN DE ESTABLECIMIENTOS AVÍCOLAS"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/9E2079F10A97AF3F06257BC7006EBFD4?OpenDocument]. Accessed 19 August 2020.
[8] Verification Research, Training and Information Centre (VERTIC). 2020. "Nicaragua". [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[9] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[10] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[11] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[12] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[13] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence that the government has conducted an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential,

and/or other dual use research. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding dual use research and/or research involving pathogens or toxins. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding an assessment to determine whether ongoing research is occurring on especially dangerous pathogens, toxins, pathogens with pandemic potential, and/or other dual use research. [7]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence of a national policy requiring oversight of dual use research, such as research with especially dangerous pathogens, toxins, and/or pathogens with pandemic potential. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding a national policy on dual use research and/or research involving pathogens or toxins. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding a national policy requiring oversight of dual use research. [7]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”.

[http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence that the country has an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding dual use research and/or research involving pathogens or toxins. [1, 2, 3, 4, 5, 6] There is no national institute of health and the national laboratory system does not have a website. [1] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding an agency responsible for oversight of research with especially dangerous pathogens, pathogens with pandemic potential, and/or other dual use research. [7]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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

In Nicaragua, there is no publicly available evidence of national legislation, regulation, policy, or other guidance, requiring the screening of synthesized DNA before it is sold. The websites of the Ministry of Health, Ministry of Agriculture, Institute for Agricultural Protection and Health (IPSA), Army of Nicaragua, Ministry of Transport and Infrastructure, Nicaraguan Council of Science and Technology, and Verification Research, Training and Information Centre (VERTIC) do not contain additional information regarding the screening of synthesized DNA before it is sold. [1, 2, 3, 4, 5, 6, 7] There is no national institute of health and the national laboratory system does not have a website. [1] Law No. 705 of 2009, the Law on the Prevention of Risks from Living Organisms Modified by Molecular Biotechnology (GMO Law), mentions synthetic recombinant DNA and RNA, but does not describe or require the screening of synthesized DNA before it is sold. [8] Although Nicaragua submitted Confidence Building Measures reports in 2020, 2017 and 2013, access to the reports is restricted (not available to the public), so it is not known what information they contain regarding the screening of synthesized DNA before it is sold. [9]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[3] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. “Inicio”. [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[5] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.
[6] Verification Research, Training and Information Centre (VERTIC). 2020. “Nicaragua”. [https://www.vertic.org/programmes/biological-weapons-and-materials/bwc-legislation-database/n/]. Accessed 19 August 2020.
[7] Ministry of Transport and Infrastructure (MINISTERIO DE TRANSPORTE E INFRAESTRUCTURA). 2020. “Inicio – MTI”. [https://www.mti.gob.ni/index.php]. Accessed 19 August 2020.
[8] President of the Republic of Nicaragua. 2009. "Law on the Prevention of Risks from Living Organisms Modified by Molecular Biotechnology Law No. 705" (“LEY SOBRE PREVENCIÓN DE RIESGOS PROVENIENTES DE ORGANISMOS VIVOS MODIFICADOS POR MEDIO DE BIOTECNOLOGÍA MOLECULAR Ley No. 705”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/3133c0d121ea3897062568a1005e0f89/a601f7681b8e547e06257e28005d461a?OpenDocument]. Accessed 19 August 2020.
[9] United Nations Office at Geneva. 2020. "BWC Electronic Confidence Building Measures Portal". [https://bwc-ecbm.unog.ch/state/nicaragua]. Accessed 19 August 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: 2

2019

World Health Organization

1.6.1b

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

Yes = 1 , No = 0

Current Year Score: 1

2020

OIE WAHIS database

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

2.1 LABORATORY SYSTEMS STRENGTH AND QUALITY

2.1.1 Laboratory testing for detection of priority diseases

2.1.1a

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

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

Current Year Score: 2

The national laboratory system in Nicaragua has the capacity to perform all six WHO-defined core diagnostic tests. The website of the Ministry of Health contains little information about the structure of Nicaragua's national laboratory system and no information on the four country-defined core tests. [1] Information from the Pan American Health Organization (PAHO) shows that the National Centre for Diagnosis and Reference (CNDR) is the national reference laboratory and coordinates the system, which includes at least 11 laboratories. The structure of the system is not described in detail. [2] A mix of external and government sources demonstrate that Nicaragua has the capacity to perform all six common WHO-defined core diagnostic tests. According to PAHO, the CNDR can test for influenza via PCR. [3] The Ministry of Health's (MINSA) 2001 Immunization Program Manual states that the CNDR can perform virus culture diagnostic tests for poliovirus to distinguish between wild poliovirus and vaccine-related cases. [4] A 2016 evaluation of the HIV surveillance system by MINSA confirms that the CNDR can test for HIV via serology. [5] According to MINSA guidelines on diagnosis of tuberculosis, the CNDR and other government and private laboratories can test for tuberculosis via microscopy. The guidelines do not name the other government and private laboratories. [6] In 2018, MINSA stated that government healthcare workers at the local level can diagnose malaria via rapid diagnostic testing. MINSA did not state which local areas specifically can perform these tests. [7] In addition, in 2008, PAHO noted the importance of the use of rapid diagnostic tests for malaria for identifying and controlling the disease in isolated areas of Nicaragua but did not state which areas or which laboratories performed these tests. [8] According to a 2008 journal article, the CNDR can test for typhoid via bacterial culture. [9]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Pan American Health Organization. 2013. "Biennial Meeting PAHO Technical Advisory Group on Antimicrobial Resistance

and Infection Prevention and Control". [https://www.paho.org/hq/dmdocuments/2014/2014-cha-tag-antimicrobial-resistance-ipc.pdf]. Accessed 18 August 2020.
[3] Pan American Health Organization. 2014. "Nicaragua - Surveillance of Influenza and Other Respiratory Viruses (ORV)" ("Nicaragua –Vigilancia de Influenza y Otros Virus Respiratorios (OVR)").
[http://www.sarinet.org/sites/default/files/library/nicaragua_-_perfil_vigilancia_influenza.pdf]. Accessed 20 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2001. "Regulations and Procedures Manual for the PAI-2001 Nicaragua" ("MANUAL DE NORMAS Y PROCEDIMIENTOS DEL PAI-2001 DE NICARAGUA").
[https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=224-manual-de-normas-y-procedimientos-pai&category_slug=publicaciones-anteriores&Itemid=235]. Accessed 20 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2016. "Evaluation of the National HIV Surveillance System" ("EVALUACIÓN DEL SISTEMA NACIONAL DE VIGILANCIA EPIDEMIOLÓGICA DE VIH").
[http://comisca.net/sites/default/files/Informe%20Nicaragua%20Vigilancia%20%20%20%20Epidemiologica%20VIH%20final.pdf]. Accessed 20 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2010. "Regulation - 057 'Procedures Manual for the Diagnosis of Tuberculosis via Microscopy'" ("Normativa - 057 'Manual de Procedimiento para el Diagnostico de Tuberculosis por Baciloscopia'").
[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2010/Normativa---057-Manual-de-Procedimiento-para-el-Diagnostico-de-Tuberculosis-por-Baciloscopia/]. Accessed 20 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2018. "MINSA REALIZA SEGUNDO CONGRESO INTERNACIONAL DE MALARIA 2018". [http://www.minsa.gob.ni/index.php/108-noticias-2018/4052-minsa-realiza-segundo-congreso-internacional-de-malaria-2018]. Accessed 20 August 2020.
[8] Pan American Health Organization. 2008. "Situation Report on Malaria in the Americas" ("Informe de la Situación del Paludismo en las Américas"). [https://www.paho.org/es/documentos/informe-situacion-paludismo-americas-2008-seccion-pais-nicaragua-spanish-only]. Accessed 20 August 2020.
[9] Corso, Alejandra, et al. 2008. "Quality control in bacteriology and resistance to antimicrobials: seven years of experience in Latin America" ("Control de calidad en bacteriología y resistencia a los antimicrobianos: siete años de experiencia en América Latina").
[https://www.researchgate.net/profile/Maria_De_La_Paz_Ade/publication/277665431_Control_de_calidad_en_bacteriologia_y_resistencia_a_los_antimicrobianos_siete_anos_de_experiencia_en_America_Latina/links/556f5bde08aefcb861dda064/Control-de-calidad-en-bacteriologia-y-resistencia-a-los-antimicrobianos-siete-anos-de-experiencia-en-America-Latina.pdf]. Accessed 20 August 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 public evidence that Nicaragua has 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. The country's 2007 "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza" does not contain specific considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. The Plan sets a general goal for "strengthening of diagnostic capacity of the national laboratory and the laboratory network". During an influenza pandemic, activities related to testing include: "detect and investigate clusters of acute and serious respiratory

illnesses"; "strengthen surveillance with regard to the geographic distribution of the disease"; and "strengthen epidemiological surveillance in airports, ports and land borders". [1] The Ministry of Health's (MINSA) 2015 "National Plan in the Context of the Meso American Plan to Improve Prevention and Control of Dengue and Chikungunya" does not discuss testing novel pathogens or scaling up capacity. Regarding testing, the Plan states that during the 2016-2018 period there should be "100% of the laboratories of the National Network with installed capacity for serological diagnosis" and the "National Diagnostic and Reference Center (CNDR) with installed capacity for diagnosis, virology and molecular". [2] During the COVID-19 pandemic, there is no public evidence that Nicaragua has issued a national testing plan. According to a region-wide report on national responses from the Latin American and Caribbean Economic System (SELA), Nicaragua's response actions have not included a plan with considerations for testing for novel pathogens, scaling capacity, and defining goals for testing. [3] The General Health Law (Law No. 423 of 2002) and its accompanying regulations (Executive Decree No. 001-2003) do not contain provisions for testing during a public health emergency. [4, 5] The websites of the Ministry of Health, Ministry of Agriculture, and Institute for Agricultural Protection and Health (IPSA) do not contain additional information regarding 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. [6, 7, 8] There is no national institute of health and the national laboratory system does not have a website. [6]

[1] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2015. "National Plan in the Context of the Meso American Plan to Improve Prevention and Control of Dengue and Chikungunya". [http://www.proyectomesoamerica.org:8088/smsp/phocadownload/Institucional/PlanesNacionales/PNDengue/NIC%20PN%20Dengue.pdf]. Accessed 20 August 2020.
[3] Latin American and Caribbean Economic System (SELA). August 2020. "COVID-19 Summary of Principal Measures by Member States of SELA". [http://www.sela.org/media/3219723/covid-19-resumen-de-las-principales-medidas-estados-miembros-sela.pdf]. Accessed 20 August 2020.
[4] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" ("LEY GENERAL DE SALUD LEY No. 423"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[5] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" ("REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[8] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 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

In Nicaragua, there is no public evidence that the national reference laboratory, the National Center for Diagnosis and Reference (CNDR), is accredited. The website of the Ministry of Health (MINSA) does not contain any information on accreditation for the CNDR. [1] The OIE's 2011 PVS Gap Analysis of Nicaragua did not mention accreditation of any laboratories in the country. [2] In 2005, the United Nations Food and Agriculture Organization (FAO) reported that the CNDR was not accredited to any quality standard. [3] The website of the Ministry of Development, Industry and Commerce (MIFIC), which oversees the National Accreditation Office (ONA) contains an accreditation certificate for a private laboratory accredited to the NTN 04 014-15 standard, which is the Nicaraguan equivalent of the ISO 15189:2012 standard. The private laboratory was accredited in 2017. [4] MIFIC's website does not contain any evidence of accreditation of the CNDR. [5] The websites of the Ministry of Health, Ministry of Agriculture and Institute for Agricultural Protection and Health (IPSA) do not contain additional information regarding accreditation of Nicaragua's national reference laboratory. [1, 6, 7] There is no national institute of health and the national laboratory system does not have a website. [1]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] World Organization for Animal Health (OIE). 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[3] United Nations Food and Agriculture Organization. 2005. "Development of a comprehensive system to ensure the quality of laboratories for food safety analysis in Central America" ("Desarrollo de un sistema integral de aseguramiento de calidad para laboratorios de análisis de alimentos en América Central"). [http://www.fao.org/tempref/GI/Reserved/FTP_FaoRlc/old/prior/comagric/codex/rla3014/pdf/acrenic.pdf]. Accessed 20 August 2020.
[4] National Accreditation Office (ONA). June 2017. "Accreditation Laboratorio Clinico San Angel". [https://www.mific.gob.ni/Portals/0/Documentos/Comercio%20Interior/PDF%20Alcances%20Acreditados/LCl-001-15-I%20(SAN%20ANGEL)20180117.pdf?ver=2019-10-17-160300-000]. Accessed 20 August 2020.
[5] Ministry of Development, Industry and Commerce (Ministerio de Fomento, Industria y Comercio). 2020. "MIFIC". [https://www.mific.gob.ni/]. Accessed 19 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.

2.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

The National Center for Diagnosis and Reference (CNDR), Nicaragua's national reference laboratory, is subject to external quality assurance review. Nicaragua has participated in the Latin American Surveillance Network of Antimicrobial Resistance (ReLAVRA) since 2000. [1] As a member of ReLAVRA, the CNDR participates in the network's external quality assurance program, sending samples to Argentina's Malbran Institute for review. [2] Additionally, a 2016 review of the Ministry of Health's HIV/AIDS program reported that the CNDR received external quality control for HIV diagnostic tests conducted via serology. [3] A 2017 presentation to the Pan American Health Organization noted that the CNDR had participated in external quality assurance activities, sending samples to the Biomolecular Laboratory in Brazil. [4]

[1] Corso, Alejandra, et al. 2008. "Quality control in bacteriology and resistance to antimicrobials: seven years of experience in Latin America" ("Control de calidad en bacteriología y resistencia a los antimicrobianos: siete años de experiencia en América Latina").
[https://www.researchgate.net/profile/Maria_De_La_Paz_Ade/publication/277665431_Control_de_calidad_en_bacteriologia_y_resistencia_a_los_antimicrobianos_siete_anos_de_experiencia_en_America_Latina/links/556f5bde08aefcb861dda064/Control-de-calidad-en-bacteriologia-y-resistencia-a-los-antimicrobianos-siete-anos-de-experiencia-en-America-Latina.pdf]. Accessed 20 August 2020.
[2] Pan American Health Organization. 2013. "Biennial Meeting PAHO Technical Advisory Group on Antimicrobial Resistance and Infection Prevention and Control". [https://www.paho.org/hq/dmdocuments/2014/2014-cha-tag-antimicrobial-resistance-ipc.pdf]. Accessed 18 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2016. "Evaluation of the National HIV Surveillance System" ("EVALUACIÓN DEL SISTEMA NACIONAL DE VIGILANCIA EPIDEMIOLÓGICA DE VIH").
[http://comisca.net/sites/default/files/Informe%20Nicaragua%20Vigilancia%20%20%20%20Epidemiologica%20VIH%20final.pdf]. Accessed 20 August 2020.
[4] Galarza, P. 2017. "NUEVOS PASOS EN LA VIGILANCIA DE LA RESISTENCIA DE NEISSERIA GONORRHOEAE EN LATINOAMÉRICA AVANCES Y DESAFÍOS". [https://www.paho.org/en/file/47242/download?token=BXSyI_In]. Accessed 18 August 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

In Nicaragua, there is no public evidence of a nationwide specimen transport system. At the local level, in January 2018, the Ministry of Health (MINSA) provided motorcycles and thermoses to local health districts (administrative units for providing healthcare services) for transport of specimens and samples from communities to local laboratories. [1] For transport to the National Center for Diagnosis and Reference (CNDR), MINSA has issued regulations outlining the necessary conditions for different types of samples (temperature, time for delivery). The regulations state that the samples should be packaged and sent to the CNDR, but do not specify what means of transport should be used. The regulations also do not specify special packing instructions related to biosafety recommendations. [2, 3] The Institute for Agricultural Protection and Health (IPSA) has issued criteria for packaging and care of specimens that are sent to its laboratories. The document does not describe a specimen transport system. [4] The websites of the Ministry of Health, Ministry of Agriculture, and Institute for Agricultural Protection and Health (IPSA) do not contain additional information regarding a nationwide specimen transport system. [5, 6, 7] There is no national institute of health and the national laboratory system does not have a website. [5]

[1] Ministry of Health (Ministerio de Salud). 2018. "ENTREGAN MOTOS A TODOS LOS SILAIS DEL PAÍS PARA ATENDER LA TUBERCULOSIS". [http://www.minsa.gob.ni/index.php/component/content/article/108-noticias-2018/3892-entregan-motos-a-todos-los-silais-del-pais-para-atender-la-tuberculosis]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2010. "Regulation - 059 'Guide for Collecting, Identifying, Handling, Conserving and Transporting Samples to Health Laboratories" ("Normativa - 059 'Guía para la Toma, Identificación, Manejo, Conservación y Transporte de Muestras para Laboratorios de Salud'").
[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-

Sanitaria/Normas-Protocolos-y-Manuales/Normas-2010/Normativa---059-Gu%C3%ADa-para-la-Toma-Identificaci%C3%B3n-Manejo-Conservaci%C3%B3n-y-Transporte-de-Muestras-para-Laboratorios-de-Salud/]. Accessed 20 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2010. "Regulation - 061 'Regulation for the prevention and control of cholera" ("Normativa - 061 "Norma para la prevención y control del cólera , Guía clínica para el abordaje y tratamiento del cólera, Guía para recolección, conservación y transporte de muestras para coprocultivos y cólera"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2010/Normativa---061-%E2%80%9CNorma-para-la-prevenci%C3%B3n-y-control-del-c%C3%B3lera%E2%80%9D--%E2%80%9CGu%C3%ADa-cl%C3%ADnica-para-el-abordaje-y-tratamiento-del-c%C3%B3lera%E2%80%9D-%E2%80%9CGu%C3%ADa-para-recolecci%C3%B3n-conservaci%C3%B3n-y-transporte-de-muestras-para-coprocultivos-y-c%C3%B3lera%E2%80%9D/]. Accessed 20 August 2020.
[4] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). "Acceptance criteria for specimens". [https://www.ipsa.gob.ni/Portals/0/2%20Laboratorios/Criterios%20de%20Aceptacion.pdf]. Accessed 20 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 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 public evidence that Nicaragua has 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. The Regulations for the General Health Law (Decree No. 001-2003) state in Article 80 that private healthcare providers must "comply with all requirements established by MINSA [Ministry of Health] in the event of a health emergency". The regulations do not describe a procedure to rapidly authorize laboratories. [1] In October 2019, the government of Nicaragua published Compulsory Technical Regulation NTON 28 003-18, under which government agencies and designate private laboratories to carry out tests that fulfill a government need. However, the process does not provide for a rapid authorization of laboratories or describe a required timeline for bureaucratic approvals. [2] Neither the 2007 "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza" nor the 2015 "National Plan in the Context of the Meso American Plan to Improve Prevention and Control of Dengue and Chikungunya" describes plans to rapidly authorize or license laboratories to supplement the capacity of the national public health laboratory system to scale-up testing during an outbreak. [3, 4] During the 2020 COVID-19 pandemic two press reports described severe testing limitations in Nicaragua. One described a limit of 50 COVID-19 diagnostic tests per day imposed by MINSA on the National Center for Diagnosis and Reference (CNDR). [5] The second article stated that the Pan American Health Organization had called on Nicaragua to implement diagnostic testing to understand the scope of the pandemic in the country. [6] The websites of the Ministry of Health, Ministry of Agriculture, and Institute for Agricultural Protection and Health (IPSA) do not contain additional information regarding 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. [7, 8, 9] There is no national institute of health and the national laboratory system does not have a website. [7]

[1] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" ("REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[2] National Assembly of Nicaragua (Asamblea Nacional de Nicaragua). 2019. " Compulsory Technical Regulation NTON 28 003-18". [http://legislacion.asamblea.gob.ni/Normaweb.nsf/4c9d05860ddef1c50625725e0051e506/5aae020f098d2a8d06258470007bdd51?OpenDocument]. Accessed 20 August 2020.
[3] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2015. "National Plan in the Context of the Meso American Plan to Improve Prevention and Control of Dengue and Chikungunya". [http://www.proyectomesoamerica.org:8088/smsp/phocadownload/Institucional/PlanesNacionales/PNDengue/NIC%20PN%20Dengue.pdf]. Accessed 20 August 2020.
[5] Confidencial. 2020. "New order from MINSA to only perform 50 COVID-19 tests per day". [https://confidencial.com.ni/nueva-orden-del-minsa-hacer-solo-50-pruebas-diarias-de-covid-19/]. Accessed 20 August 2020.
[6] Despacho 505. 2020. "PAHO calls on Nicaragua to prioritize laboratory tests over clinical diagnosis of COVID-19 cases". [https://www.despacho505.com/ops-llama-a-nicaragua-a-priorizar-pruebas-de-laboratorio-sobre-diagnosticos-clinicos-en-casos-de-covid-19/]. Accessed 20 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[9] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.

2.3 REAL-TIME SURVEILLANCE AND REPORTING

2.3.1 Indicator and event-based surveillance and reporting systems

2.3.1a

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

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

Current Year Score: 0

In Nicaragua, there is no public evidence that the country is conducting ongoing event-based surveillance and analysis for infectious disease. Law No. 337 of 2000 established Nicaragua's National System for Prevention, Mitigation and Attention for Disasters (SINAPRED), which the law defines as an interinstitutional system aimed at risk reduction via disaster prevention, mitigation, and attention. Article 22 created the SINAPRED's Disaster Operations Center (CODE) which was set up and managed by the Civil Defense division of the Army of Nicaragua. [1] The CODE's webpage lists its functions, which include "receiving and processing summary information in real time from the localities and areas affected" and "permanently monitoring the situation and continually informing the National Committee for the Prevention, Mitigation and Attention for Disasters and the High Command of the Army of Nicaragua", although there is no specific evidence of an EBS unit. [2] The Civil Defense division's webpage, does not contain additional information regarding the internal structure of the CODE. [3]

Additionally, the Civil Defense division is charged with carrying out constant monitoring of phenomena that could cause a disaster in the country, although this monitoring is mainly focused on meteorological and seismic phenomena. [4, 5] MINSA's Regulation-019 outlines the operations of the health-sector Emergency Operations Center (COE). The regulation was prepared to respond to the risk of avian flu but applies to other public health emergencies as well. The COE coordinates MINSA's national activities in a public health emergency or natural disaster and supports regional and local working groups. The COE is activated by order of the Minister of Health. There is no information regarding event-based surveillance and analysis in the COE. [6] The websites of the Ministry of Health, Ministry of Agriculture, and Institute for Agricultural Protection and Health (IPSA) do not contain additional information regarding ongoing event-based surveillance (EBS). [7, 8, 9] There is no national institute of health and the national laboratory system does not have a website. [7]

[1] President of the Republic of Nicaragua. 2000. "Law to Create the National System of Disaster Prevention, Mitigation and Attention Law No. 337" ("LEY CREADORA DEL SISTEMA NACIONAL PARA LA PREVENCION, MITIGACION Y ATENCION DE DESASTRES LEY No. 337").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/297E6E70F4940832062572020059E4CD?OpenDocument]. Accessed 20 August 2020.
[2] Army of Nicaragua (Ejército de Nicaragua). 2018. "Disaster Operations Centre" ("Centro de Operaciones de Desastres").
[https://www.ejercito.mil.ni/contenido/sociedad-civil/defensa-civil/defensa-civil-cod.html]. Accessed 20 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2018. "Civil Defence Division" ("Estado Mayor de Defensa Civil").
[https://www.ejercito.mil.ni/contenido/sociedad-civil/defensa-civil/defensa-civil.html]. Accessed 20 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2018. "Mission and Functions" ("Misión y Funciones").
[https://www.ejercito.mil.ni/contenido/sociedad-civil/defensa-civil/defensa-civil-mision-funciones.html]. Accessed 20 August 2020.
[5] Nicaraguan Institute for Territorial Studies (Instituto Nicaraguense de Estudios Territoriales). 2018. "INETER".
[https://www.ineter.gob.ni/]. Accessed 20 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[9] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio".
[https://www.ipsa.gob.ni/]. Accessed 18 August 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

In Nicaragua, there is no public evidence that the country has reported a potential public health emergency of international concern (PHEIC) to the WHO within the last two years. The WHO's Disease Outbreak News does not list any outbreaks in Nicaragua during the last two years. [1] The websites of the WHO and the Pan American Health Organization (PAHO) do not contain this information either. [2, 3] Additionally, the website of the Ministry of Health does not contain additional

information regarding the report of a potential public health emergency of international concern (PHEIC) to the WHO within the last two years. [4]

[1] World Health Organization. 2020. “Disease outbreak news Nicaragua”. [http://www.who.int/csr/don/archive/country/nic/en/]. Accessed 21 August 2020.
[2] World Health Organization. 2020. “WHO”. [http://www.who.int/]. Accessed 21 August 2020.
[3] Pan American Health Organization (PAHO). 2020. “PAHO”. [https://www.paho.org/en]. Accessed 21 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.

2.3.2 Interoperable, interconnected, electronic real-time reporting systems

2.3.2a

Does the government operate an electronic reporting surveillance system at both the national and the sub-national level?
Yes = 1 , No = 0

Current Year Score: 1

Nicaragua’s Ministry of Health (MINSA) operates an electronic reporting surveillance system at both the national and sub-national level. MINSA operates a real-time information system called the Nicaraguan National Epidemiological Surveillance System (SISNIVEN). [1] According to a 2013 presentation from MINSA, the system reached 95% of healthcare facilities in the country with real-time communications via internet, cell and fixed line telephones, fax and radios. The presentation shows that surveillance data is captured by 1,157 health centers and health outposts where it is consolidated daily and weekly and sent to the municipal level, which is also consolidated daily and weekly to the 18 sub-national health districts which digitize any data that was not already electronic and send to the General Directorate of Surveillance at MINSA. [2] This information is complemented by daily surveillance information from 58 hospitals across the country as well. [2] A 2011 journal article corroborates how the system functions. [1] As of 2017, MINSA reported that the system recorded notifications online from all healthcare facilities in the country, providing “timely, safe, confidential and trustworthy information, which facilitates making opportune decisions in real time”. [3] The General Directorate of Surveillance oversees SISNIVEN and provides guidance to the facilities that input information into the system. [4] NOTE: As of mid-August 2020, the website of MINSA was not loading, making it difficult to find updated information on SISNIVEN. [5]

[1] Muiser, Jorine, et al. 2011. "Health system of Nicaragua" (“Sistema de salud de Nicaragua”). [https://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0036-36342011000800018]. Accessed 21 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2013. "Epidemiological surveillance”. [https://www.paho.org/hq/dmdocuments/2013/RAVREDA-14-SIVE-Nicaragua.pdf]. Accessed 21 August 2020.
[3] La Voz del Sandinismo. 2017. “MINSA presents the national epidemiological surveillance system”. [https://www.lavozdelsandinismo.com/nicaragua/2017-03-08/minsa-presenta-sistema-de-vigilancia-epidemiologica-nacional/]. Accessed 21 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2018. "General Directorate of Public Health Surveillance Presentation" (“Dirección General de Vigilancia de la Salud Pública Presentacion"). [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/presentacion]. Accessed 21 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.

2.3.2b

Does the electronic reporting surveillance system collect ongoing or real-time laboratory data?
Yes = 1 , No = 0

Current Year Score: 1

In Nicaragua, the Ministry of Health (MINSA) operates an electronic reporting surveillance system that collects ongoing laboratory data. MINSA operates a real-time system called the Nicaraguan National Epidemiological Surveillance System (SISNIVEN). The system integrates data from different divisions of MINSA, including local healthcare facilities, laboratories, and public health surveillance. [1, 2] In 2017, MINSA launched a new information system for its laboratories, providing diagnostic results in real-time and connecting it with SISNIVEN's epidemiological surveillance systems. The system also allows for patients and local health centers to access laboratory results in real-time online. Authorities have stated that once diagnostic results are approved, they are immediately available in the information system. Additionally, the laboratory information system manages entomological samples, as well as food, water, soil and others, allowing public health authorities to access multiple types of data. The system can also access a patient's diagnostic history. [3, 4]

[1] Muiser, Jorine, et al. 2011. "Health system of Nicaragua" ("Sistema de salud de Nicaragua"). [https://www.scielosp.org/scielo.php?script=sci_arttext&pid=S0036-36342011000800018]. Accessed 21 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2013. "Epidemiological surveillance". [https://www.paho.org/hq/dmdocuments/2013/RAVREDA-14-SIVE-Nicaragua.pdf]. Accessed 21 August 2020.
[3] La Voz del Sandinismo. 2017. "MINSA presents the national epidemiological surveillance system". [https://www.lavozdelsandinismo.com/nicaragua/2017-03-08/minsa-presenta-sistema-de-vigilancia-epidemiologica-nacional/]. Accessed 21 August 2020.
[4] Canal 8. 2017. "MINSA presents information management system for laboratories" ("MINSA presenta sistema de manejo de información de laboratorios"). [https://www.tn8.tv/nacionales/426650-minsa-presenta-sistema-manejo-informacion-laboratorios/]. Accessed 21 August 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

In Nicaragua, there is no public evidence that electronic health records are commonly in use. In 2013, the Ministry of Health (MINSA) updated Regulation-004 to allow for electronic health records (EHR). [1] In 2017, MINSA listed the implementation of electronic health records among its "future plans" but did not give a date for implementation. [2] MINSA's website does not contain updated information on EHR implementation or if EHR is commonly in use in Nicaragua. [3] According to local media, the Vivian Pellas Hospital is the only facility in the country to use a completely digital health records system. [4] Prior to 2013, EHR were only considered supporting documentation and could not replace physical records. [5] Regulation-004 defines "clinical records" to include any electronic or data storage system, in addition to physical records. Further, the regulation states that the use of electronic health records will be regulated by MINSA according to the current state of technology. [1] There is no national institute of health and the national laboratory system does not have a website. [3]

[1] Ministry of Health (Ministerio de Salud). 2013. "Regulation - 004 Second Edition Regulation for the Handling of Health Records and Manual for the Handling of Health Records" ("Normativa – 004 Segunda Edición NORMA PARA EL MANEJO DEL EXPEDIENTE CLÍNICO Y MANUAL PARA EL MANEJO DEL EXPEDIENTE CLÍNICO").

[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2013/N---004-Norma-para-el-manejo-de-expediente-cl%C3%ADnica-y-Manual-para-el-manejo-del-Expediente-Cl%C3%ADnico-(Segunda-Edici%C3%B3n/]. Accessed 16 November 2018.
[2] Ministry of Health (Ministerio de Salud). 2017. "MINSA: GESTIÓN MÁS EFICIENTE CON MAYOR USO DE LA TECNOLOGÍA". [http://www.minsa.gob.ni/index.php/noticias-2017/3296-minsa-gestion-mas-eficiente-con-mayor-uso-de-la-tecnologia]. Accessed 16 November 2018.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] El Nuevo Diario. 2018. "Tecnología al servicio del paciente, un beneficio invaluable". [https://www.elnuevodiario.com.ni/suplementos/ellas/459562-tecnologia-servicio-paciente-beneficio-invaluable/]. Accessed 21 August 2020.
[5] Ministry of Health (Ministerio de Salud).2008. "Regulation - 004 Regulation for the Handling of Health Records Guide for Handling of Health Records" ("Normativa – 004 NORMA PARA EL MANEJO DEL EXPEDIENTE CLÍNICO GUÍA PARA EL MANEJO DEL EXPEDIENTE CLÍNICO".
[https://www.paho.org/nic/index.php?option=com_docman&view=download&category_slug=documentos-proyecto-holanda&alias=566-indicador-4-n-4-expidiente-clinico-fch&Itemid=235]. Accessed 16 November 2018.

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

In Nicaragua, there is no public evidence that the national public health system has access to individuals' electronic health records (EHR). The Ministry of Health (MINSA) updated Regulation-004 in 2013 to allow for electronic health records. Regulation-004 defines "clinical records" to include any electronic or data storage system, in addition to physical records. Further, the regulation states that the use of electronic health records will be regulated by MINSA according to the current state of technology. The regulation states that MINSA authorities have the right to request health records from any public or private healthcare provider. [1] In 2017, MINSA listed the implementation of electronic health records among its "future plans" but did not give a date for implementation. [2] MINSA's website does not contain additional public evidence that the ministry has since implemented or further regulated EHR. [3] According to local media, the Vivian Pellas Hospital (HVP) is the only one in the country to use a completely digital health records system. [4, 5] HVP is a private facility and there is no public evidence that MINSA has accessed to its electronic health records. [3, 6] There is no national institute of health and the national laboratory system does not have a website. [3]

[1] Ministry of Health (Ministerio de Salud). 2013. "Regulation - 004 Second Edition Regulation for the Handling of Health Records and Manual for the Handling of Health Records" ("Normativa – 004 Segunda Edición NORMA PARA EL MANEJO DEL EXPEDIENTE CLÍNICO Y MANUAL PARA EL MANEJO DEL EXPEDIENTE CLÍNICO").
[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2013/N---004-Norma-para-el-manejo-de-expediente-cl%C3%ADnica-y-Manual-para-el-manejo-del-Expediente-Cl%C3%ADnico-(Segunda-Edici%C3%B3n/]. Accessed 16 November 2018.
[2] Ministry of Health (Ministerio de Salud). 2017. "MINSA: GESTIÓN MÁS EFICIENTE CON MAYOR USO DE LA TECNOLOGÍA". [http://www.minsa.gob.ni/index.php/noticias-2017/3296-minsa-gestion-mas-eficiente-con-mayor-uso-de-la-tecnologia]. Accessed 16 November 2018.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] El Nuevo Diario. 2018. "Tecnología al servicio del paciente, un beneficio invaluable". [https://www.elnuevodiario.com.ni/suplementos/ellas/459562-tecnologia-servicio-paciente-beneficio-invaluable/]. Accessed 21 August 2020.

[5] Hospital Vivian Pellas. 2020. “Medical service to your home”. [https://www.hospitalvivianpellas.com/servicios-medicos-hasta-tu-hogar/]. Accessed 21 August 2020.
[6] Hospital Vivian Pellas. 2020. “Historia”. [https://www.hospitalvivianpellas.com/]. Accessed 21 August 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

In Nicaragua, there is no public evidence that the government has data standards to ensure that data from electronic health records (EHR) is comparable. In 2013, the Ministry of Health (MINSA) updated Regulation-004 to permit EHR. Regulation-004 defines “clinical records” to include any electronic or data storage system, in addition to physical records. The regulation does not mention any data standards. Further, the regulation states that the use of electronic health records will be regulated by MINSA according to the current state of technology, indicating that there is still relatively little regulation of electronic health records in Nicaragua. [1] In 2017, MINSA listed the implementation of electronic health records among its “future plans” to improve access to health records at all levels of the public health system, but did not mention data standards for the records. [2] MINSA's website does not contain additional public evidence that the ministry has since further regulated EHR or proposed data standards. [3] According to local media, the Vivian Pellas Hospital (HVP) is the only one in the country to use a completely digital health records system. [4, 5] HVP is a private facility and there is no evidence that MINSA has set data standards for its electronic health records. [3, 6] HVP’s website does not mention a data standard for its EHR system. [6] There is no national institute of health and the national laboratory system does not have a website. [3]

[1] Ministry of Health (Ministerio de Salud). 2013. "Regulation - 004 Second Edition Regulation for the Handling of Health Records and Manual for the Handling of Health Records" (“Normativa – 004 Segunda Edición NORMA PARA EL MANEJO DEL EXPEDIENTE CLÍNICO Y MANUAL PARA EL MANEJO DEL EXPEDIENTE CLÍNICO”). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2013/N---004-Norma-para-el-manejo-de-expediente-cl%C3%ADnica-y-Manual-para-el-manejo-del-Expediente-Cl%C3%ADnico-(Segunda-Edici%C3%B3n/]. Accessed 16 November 2018.
[2] Ministry of Health (Ministerio de Salud). 2017. “MINSA: GESTIÓN MÁS EFICIENTE CON MAYOR USO DE LA TECNOLOGÍA”. [http://www.minsa.gob.ni/index.php/noticias-2017/3296-minsa-gestion-mas-eficiente-con-mayor-uso-de-la-tecnologia]. Accessed 16 November 2018.
[3] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] El Nuevo Diario. 2018. “Tecnología al servicio del paciente, un beneficio invaluable”. [https://www.elnuevodiario.com.ni/suplementos/ellas/459562-tecnologia-servicio-paciente-beneficio-invaluable/]. Accessed 21 August 2020.
[5] Hospital Vivian Pellas. 2020. “Medical service to your home”. [https://www.hospitalvivianpellas.com/servicios-medicos-hasta-tu-hogar/]. Accessed 21 August 2020.
[6] Hospital Vivian Pellas. 2020. “Historia”. [https://www.hospitalvivianpellas.com/]. Accessed 21 August 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

In Nicaragua, there is no public evidence of established mechanisms at the Ministry of Health (MINSA), Ministry of Agriculture (MAG), Institute for Agricultural Protection and Health (IPSA), and Ministry of Environment (MARENA) to share animal, human and wildlife surveillance data. MINSA's Technical Regulation No. 24 001-05, which is for the prevention and control of human leptospirosis, states that MINSA and MAG should coordinate to determine levels of animal leptospirosis and take appropriate actions based on that data. [1] However, there is no publicly available evidence of such coordination. [2, 3] The OIE's 2011 PVS Gap Analysis for Nicaragua noted that, in terms of public health, the coordination between MINSA and MAG was insufficient and largely due to a lack of human and material resources. [4] In May 2015, the UN Food and Agriculture Organization convened a meeting on the "One Health" strategy in Nicaragua on bovine pathogens that included authorities from the MINSA's General Directorate of Public Health Surveillance (DGVSP) and IPSA. Reporting on the meeting did not specifically mention sharing surveillance data between institutions. [5] In 2006, MINSA and MAG signed an "Inter-Ministerial Agreement" to create the Interinstitutional Technical Commission for avian influenza. The description of the Commission's functions does not specifically mention sharing surveillance data between institutions, but it does mention "immediately sharing epidemiological data and specimens" with the WHO and OIE in the event cases were detected. MARENA and six other institutions also have seats on the Commission. [6] The websites of MINSA, MAG, IPSA, and MARENA do not contain additional information regarding established mechanisms to share animal, human and wildlife surveillance data. [2, 3, 7, 8] There is no national institute of health and the national laboratory system does not have a website. [2]

[1] Ministry of Health (Ministerio de Salud). 2005. "Nicaraguan Compulsory Technical Regulation for the Prevention and Control of Human Leptospirosis Technical Regulation No. 24 001-05" ("NORMA TÉCNICA OBLIGATORIA NICARAGÜENSE DE PREVENCIÓN Y CONTROL DE LA LEPTOSPIROSIS HUMANA NORMA TÉCNICA No. 24 001-05"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/2EB06741797170710625756200590 9CF?OpenDocument]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[3] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[4] World Organization for Animal Health (OIE). 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[5] PROSAIA. 2015. "Autoridades Sanitarias de Nicaragua se reúnen para fortalecer estrategias de combate de la Rabia Bovina en el marco del Proyecto FAO". [https://www.prosaia.org/autoridades-sanitarias-de-nicaragua-se-reunen-para-fortalecer-estrategias-de-combate-de-la-rabia-bovina-en-el-marco-del-proyecto-fao/]. Accessed 19 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2006. "Inter-Ministerial Agreement". [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Avicola/Acuerdo%20Interministerial%20MAGFOR-MINSA%20-%20Comisi%C3%B3n%20T%C3%A9cnica%20para%20mantener%20el%20pa%C3%ADs%20libre%20de%20la%20IA.pdf]. Accessed 21 August 2020.
[7] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[8] Ministry of the Environment and Natural Resources (Ministerio de Ambiente y Recursos Naturales). 2020. "MARENA". [http://www.marena.gob.ni/]. Accessed 21 August 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

There is insufficient public evidence that Nicaragua's Ministry of Health (MINSA) makes de-identified health surveillance data on disease outbreaks publicly available via reports (or other format) on its website. Previously, MINSA published two weekly reports with de-identified health surveillance data on disease outbreaks on its website. However, the most recent reports as of March 2021 were dated May 25, 2020. At the time of research, no updated reports had been published since then. [1, 2] The Weekly Epidemiological Bulletin includes gross disease outbreak numbers, incidence rates and observations on the current situation and the prior year's data. The May 25, 2020 bulletin covered dengue, Zika, Chikungunya, leptospirosis, diarrheal infections, acute respiratory syndrome, and pneumonia. [1] Additionally, MINSA has published a weekly Epidemiological Situation Report in the past, which covers the same diseases and compares the current year statistics with the previous year. As with the epidemiological bulletin, the most recent version of the situation report is dated May 25, 2020. [2] MINSA's website does not contain other publicly available reports with de-identified health surveillance data on disease outbreaks. [3] There is no national institute of health and the national laboratory system does not have a website. [3]

[1] Ministry of Health (Ministerio de Salud). 2020. "Weekly Epidemiological Bulletins" ("Boletines Epidemiológicos Semanales"). [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/boletin-epidemiologico]. Accessed 31 March 2021.
[2] Ministry of Health (Ministerio de Salud). 2020. "Situation Room" ("Sala de Situacion"). [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/sala-de-situacion]. Accessed 31 March 2021.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 31 March 2021.

2.4.3b

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nicaragua makes de-identified health surveillance data on COVID-19 publicly available via daily reports (or other format) on government websites. The Ministry of Health (MINSA) publishes a weekly press release with information on the number of new COVID-19 cases, individuals receiving care, and deaths. [1] At the time of this research, the most recent press release had been issued August 18, 2020. [1] Local news media also publish these figures, but openly question their accuracy, stating that reports from independent observers document an "abysmal difference" compared to the number of cases in official MINSA figures. [2] For example, MINSA's August 18, 2020 press release recorded 4,311 cases compared to 9,822 suspected and confirmed cases reported by the Citizen Observatory for COVID-19 Nicaragua. [1, 2, 3] The difference is starker regarding the number of COVID-19 deaths: MINSA has recorded 133 deaths, while the Observatory reports 2,652. [1, 3] Neither MINSA nor the Citizen Observatory provide daily reports on COVID-19 cases. [4, 5]

[1] Ministry of Health (Ministerio de Salud). 2020. "Press Release Ministry of Citizen Power for Health". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5530-18agosto]. Accessed 22 August 2020.

[2] La Prensa. 2020. “MINSA reports 4,311 COVID-19 cases and 133 deaths in Nicaragua”. [https://www.laprensa.com.ni/2020/08/18/nacionales/2709859-minsa-reporta-4311-casos-de-covid-19-y-133-muertes-en-nicaragua]. Accessed 22 August 2020.
[3] Citizen Observatory for COVID-19 Nicaragua. 2020. “Weekly Report 13 to 19 August 2020”. [https://observatorioni.org/13-al-19-de-agosto-2020/]. Accessed 22 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Citizen Observatory for COVID-19 Nicaragua. 2020. “Inicio”. [https://observatorioni.org/]. Accessed 22 August 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

In Nicaragua, the General Health Law (Law No. 423 of 2002) safeguards the confidentiality of identifiable health information for individuals, such as that generated through health surveillance activities. Article 8 outlines users’ rights in the health system and includes the right to “confidentiality and discretion of all information, files and visits in public or private health facilities”. [1] Additionally, in public statements in 2015 and 2017 the Ministry of Health affirmed that epidemiological surveillance data protects the confidentiality of identifiable patient data. [2, 3] A 2007 report from MINSA on the “Health Information System” noted that the organization had adequate capacity to collect, process and analyze data from individuals and that it followed “international norms for consent, confidentiality and access to personal data (as referred to in the Guidelines from the OECD – Organization for Economic Cooperation and Development)”. [4] Nicaragua's Personal Data Protection Law (Law No. 787 of 2012) includes (Article 8) "personal information related to health" as one of four categories of personal information protected under the law. Article 7 prohibits organizations from storing personal data without meeting the “technical conditions for integrity, confidentiality and security”. Article 14 prohibits the transfer of data to parties that do not provide adequate levels of data security. Article 45 states that holding data without meeting the minimum requirements for security, integrity and confidentiality is a “grave infraction” of the law. [5]

[1] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" (“LEY GENERAL DE SALUD LEY No. 423”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2015. “Rapid tests to detect HIV in the Concepcion Palacios Healthcare Complex”. [http://www.minsa.gob.ni/index.php?option=com_content&view=article&id=2268:hospital-de-masaya-realiza-jornada-de-ultrasonidos-prostaticos&catid=66:noticias-2012]. Accessed 23 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2017. “MINSA Presents National Epidemiological Surveillance System” (“MINSA PRESENTA SISTEMA DE VIGILANCIA EPIDEMIOLÓGICA NACIONAL”). [http://www.minsa.gob.ni/index.php/106-noticias-2017/3351-minsa-presenta-sistema-de-vigilancia-epidemiologica-nacional]. Accessed 23 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2007. “Diagnostic of Health Information System”. [https://www.paho.org/hq/index.php?option=com_docman&view=download&category_slug=pais-3655&alias=13343-nicaragua-diagnostico-situacion-sistema-informacion-salud-2007-343&Itemid=270&lang=en]. Accessed 23 August 2020.
[5] President of the Republic of Nicaragua. 2012. "Law for the Protection of Personal Data Law No. 787" (“LEY DE PROTECCIÓN DE DATOS PERSONALES LEY No. 787”). [http://legislacion.asamblea.gob.ni/normaweb.nsf/9e314815a08d4a6206257265005d21f9/e5d37e9b4827fc06062579ed007

6ce1d]. Accessed 19 August 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

In Nicaragua, the General Health Law (Law No. 423 of 2002), in Article 7, states that the Ministry of Health (MINSA) is responsible for setting up and maintaining health information systems. [1] Article 7 of Decree No. 001-2003, the regulations for the General Health Law, states that health service providers must guarantee the confidentiality of patient data and that only authorized personnel should have access. [2] A 2013 presentation from MINSA showed that its data systems are behind a password-protected web platform and that it utilizes user access controls to limit access to different data systems. [3] However none of the aforementioned sources specifically refer to cyber attacks. Nicaragua's Personal Data Protection Law (Law No. 787 of 2012) provides protections for individuals' health information and includes mention of information security and protection from unauthorized access. The law (Article 8) refers specifically to "personal information related to health", including it as one of four categories of personal information protected under the law. Article 7 prohibits organizations from storing personal data without meeting the "technical conditions for integrity, confidentiality and security". Article 9 states that the data holder is responsible for adopting the proper technical protections. Article 11 does not specifically name cyber attacks, but does refer to actions that would include them: "The data holder must adopt the technical and organizational measures that are necessary to guarantee the integrity, confidentiality and security of personal data in order to avoid unauthorized modification, loss, access, use, sharing, transfer or publication, and that permits the detection of diversions, intentional or not, of private information, regardless of whether the risks come from human action or the technical means utilized". Article 14 prohibits the transfer of data to parties that do not provide adequate levels of data security. Article 22 requires parties to describe the technical means of data protection in their registration with the official data holder registry. Article 45 states that holding data without meeting the minimum requirements for security, integrity and confidentiality is a "grave infraction" of the law which can result in the closure of the offending organization and/or removal of all at-risk data. [4]

[1] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" ("LEY GENERAL DE SALUD LEY No. 423"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" ("REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2013. "Epidemiological surveillance". [https://www.paho.org/hq/dmdocuments/2013/RAVREDA-14-SIVE-Nicaragua.pdf]. Accessed 21 August 2020.
[4] President of the Republic of Nicaragua. 2012. "Law for the Protection of Personal Data Law No. 787" ("LEY DE PROTECCIÓN DE DATOS PERSONALES LEY No. 787"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/9e314815a08d4a6206257265005d21f9/e5d37e9b4827fc06062579ed0076ce1d]. Accessed 19 August 2020.

2.4.5 International data sharing

2.4.5a

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

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

Current Year Score: 2

The government of Nicaragua has made commitments to share surveillance data with other countries in the region during a public health emergency, which apply to more than one disease. However, during the COVID-19 pandemic multiple news media outlets have questioned the accuracy of Nicaragua's epidemiological surveillance data and noted the lack of complete data. In terms of commitments, in 2014, Nicaragua presented its Plan for the Fight Against Ebola to the country's foreign diplomatic corps in order to share actions Nicaragua was taking in coordination with the global community. During the presentation, the government committed to the "exchange of information with specialized organizations around the world and in the region" in the context of a public health emergency like Ebola. [1] In 2006, the Ministry of Health (MINSA) and Ministry of Agriculture (MAG) signed an "Inter-Ministerial Agreement" to create the Interinstitutional Technical Commission for avian influenza. The description of the Commission's functions commits the ministries to "immediately sharing epidemiological data and specimens" with the WHO and OIE in the event cases were detected. [2] Via its participation in the Council of Health Ministers of Central America and the Dominican Republic (COMICSA), Nicaragua has made additional commitments to share surveillance data during a public health emergency with other countries in the region. COMICSA's 2016-2020 regional health plan includes strengthening the Regional Health Surveillance Information Platform (Activity 6.3.3) and strengthening the regional health situation room by working on national epidemiological surveillance systems (Activity 8.1.1). [3] Despite these commitments, during the COVID-19 pandemic there are reports of inaccurate and inadequate surveillance data published by Nicaragua. In June 2020, one local newspaper noted that MINSA had not published its weekly epidemiological bulletin for six weeks. Experts interviewed in the article noted that the government was attempting to hide data or obfuscate the epidemiological situation in the country. [4] As of March 2021, MINSA had not resumed publishing its weekly epidemiological bulletins. [5] In addition, two international news outlets reported similar stories in May 2020, noting that the statistics issued by the government were confusing and at times contradictory. [6, 7] COVID-19 case data for Nicaragua has appeared in the Central American Integration System's (SICA) periodic regional updates on the pandemic, although the country has reported notably fewer cases than any other country in the region except for Belize. [8]

[1] Ministry of Health (Ministerio de Salud). 2014. "Emergency Cabinet Presents Ebola Plan to Diplomatic Corps" ("GABINETE DE EMERGENCIA PRESENTA PLAN CONTRA EL ÉBOLA A CUERPO DIPLOMÁTICO"). [http://www.minsa.gob.ni/index.php/103-noticias-2014/1330-gabinete-de-emergencia-presenta-plan-contra-el-ebola-a-cuerpo-diplomatico]. Accessed 23 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2006. "Inter-Ministerial Agreement". [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Avicola/Acuerdo%20Interministerial%20MAGFOR-MINSA%20-%20Comisi%C3%B3n%20T%C3%A9cnica%20para%20mantener%20el%20pa%C3%ADs%20libre%20de%20la%20IA.pdf]. Accessed 21 August 2020.
[3] Council of Health Ministers of Central America and the Dominican Republic (COMICSA). 2016. "Health Plan 2016-2020". [http://comisca.net/sites/default/files/PLAN%20DE%20SALUD%202016-2020.pdf]. Accessed 23 August 2020.
[4] La Prensa. June 2020. "MINSA six weeks without publishing epidemiological bulletin". [https://www.laprensa.com.ni/2020/06/16/nacionales/2685620-minsa-cumple-seis-semanas-sin-publicar-boletin-epidemiologico-y-se-desconoce-comportamiento-de-epidemias-en-el-pais]. Accessed 23 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Weekly Epidemiological Bulletins" ("Boletines Epidemiológicos

Semanales"). [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/boletin-epidemiologico]. Accessed 22 August 2020.
[6] BBC. May 2020. "Coronavirus: Government of Nicaragua is trying to hide the deaths". [https://www.bbc.com/mundo/noticias-america-latina-52716064]. Accessed 23 August 2020.
[7] El Pais. May 2020. "Ortega's government minimizes the cases of COVID-19 while alarm grows in hospitals". [https://elpais.com/sociedad/2020-05-04/el-gobierno-de-ortega-minimiza-los-casos-de-la-covid-19-mientras-crecen-las-alarmas-en-los-hospitales.html]. Accessed 23 August 2020.
[8] Central American Integration System (SICA). 2020. "Report 29 Central America and Dominican Republic united against coronavirus COVID-19". [https://www.sica.int/documentos/informe-29-centroamerica-y-republica-dominicana-unida-contra-el-coronavirus-covid-19_1_123020.html]. Accessed 23 August 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 public evidence that Nicaragua has 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. The website of the Ministry of Health (MINSA) does not contain information regarding contact tracing in the event of a public health emergency. [1] There is no national institute of health and the national laboratory system does not have a website. [1] During the COVID-19 pandemic in 2020, the director of the Pan American Health Organization stated that the organization was worried about "the lack of social distancing, invitations to large gatherings; we are worried about testing, contact tracing, notification of cases". [2, 3] News media reports on the COVID-19 pandemic in Nicaragua do not mention implementation of contact tracing in the country. [4, 5, 6]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] 20 Minutos. 2020. "Fear of spread of COVID-19 in Nicaragua in the face of inaction". [https://www.20minutos.com/noticia/271736/0/por-inaccion-de-nicaragua-ante-covid-19-se-teme-propagacion/]. Accessed 23 August 2020.
[3] Republica. 2020. "Wall Street Journal: Doctors that dare to speak about COVID-19 in Nicaragua are fired". [https://republica.gt/2020/07/27/los-medicos-que-se-atreven-a-hablar-del-covid-19-en-nicaragua-son-destituidos/]. Accessed 23 August 2020.
[4] La Prensa. 2020. "La Prensa". [https://www.laprensa.com.ni/]. Accessed 23 August 2020.
[5] Despacho 505. 2020. "Portada". [https://www.despacho505.com/]. Accessed 23 August 2020.
[6] Confidencial. 2020. "Confidencial". [https://confidencial.com.ni/]. Accessed 23 August 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 no public evidence that Nicaragua 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. The website of the Ministry of Health (MINSA) does not contain information regarding wraparound services to enable cases and suspected cases to self-isolate. [1] There is no national institute of health and the national laboratory system does not have a website. [1] During the COVID-19 pandemic in 2020, the government of Nicaragua has not imposed a lockdown, quarantine, widespread testing, contact tracing or other measures conducive to self-isolation to prevent the spread of the virus. [2, 3, 4, 5]

[1] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] 20 Minutos. 2020. “Fear of spread of COVID-19 in Nicaragua in the face of inaction”. [https://www.20minutos.com/noticia/271736/0/por-inaccion-de-nicaragua-ante-covid-19-se-teme-propagacion/]. Accessed 23 August 2020.
[3] Republica. 2020. “Wall Street Journal: Doctors that dare to speak about COVID-19 in Nicaragua are fired”. [https://republica.gt/2020/07/27/los-medicos-que-se-atreven-a-hablar-del-covid-19-en-nicaragua-son-destituidos/]. Accessed 23 August 2020.
[4] BBC. May 2020. “Coronavirus: Government of Nicaragua is trying to hide the deaths”. [https://www.bbc.com/mundo/noticias-america-latina-52716064]. Accessed 23 August 2020.
[5] El Pais. May 2020. “Ortega’s government minimizes the cases of COVID-19 while alarm grows in hospitals”. [https://elpais.com/sociedad/2020-05-04/el-gobierno-de-ortega-minimiza-los-casos-de-la-covid-19-mientras-crecen-las-alarmas-en-los-hospitales.html]. Accessed 23 August 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 public evidence that Nicaragua makes de-identified data on contact tracing efforts for COVID-19 (including the percentage of new cases from identified contacts) available via daily reports (or other format) on government websites. The Ministry of Health (MINSA) publishes a weekly press release with information on the number of new COVID-19 cases, individuals receiving care, and deaths. [1] At the time of this research, the most recent press release had been issued August 18, 2020. [1] The press release does not provide information on the percentage of new cases from identified contacts. [1] Local news media also publish these figures, but openly question their accuracy, stating that reports from independent observers document an "abysmal difference" compared to the number of cases in official MINSA figures. [2] Two months into the pandemic, the government denied the existence of local transmission, despite consensus in the medical community that such transmission was occurring. [3]

[1] Ministry of Health (Ministerio de Salud). 2020. "Press Release Ministry of Citizen Power for Health". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5530-18agosto]. Accessed 22 August 2020.
[2] La Prensa. 2020. "MINSA reports 4,311 COVID-19 cases and 133 deaths in Nicaragua". [https://www.laprensa.com.ni/2020/08/18/nacionales/2709859-minsa-reporta-4311-casos-de-covid-19-y-133-muertes-en-nicaragua]. Accessed 22 August 2020.
[3] El Pais. May 2020. "Ortega's government minimizes the cases of COVID-19 while alarm grows in hospitals". [https://elpais.com/sociedad/2020-05-04/el-gobierno-de-ortega-minimiza-los-casos-de-la-covid-19-mientras-crecen-las-alarmas-en-los-hospitales.html]. Accessed 23 August 2020.

2.5.2 Point of entry management

2.5.2a

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

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

Current Year Score: 0

There is insufficient public evidence that Nicaragua has 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. In 2015, as part of its preparations for a possible Ebola pandemic, the government of Nicaragua stated that it planned to apply “strict measures of surveillance and protection at entry points to the country” and “strictly apply all the protocols for prevention, protection and care with rapid diagnosis, patient isolation, and identification of contacts”. However, there is no public evidence that these plans were implemented. [1] During the 2020 COVID-19 pandemic, in a news article, an epidemiologist stated that it was unlikely that the Ministry of Health (MINSA) had been able to track the first cases of COVID-19 that entered the country because of a lack of the necessary entry controls and contact tracing . [2] The websites of the Ministry of Health (MINSA) and the General Directorate of Migration and Foreigners do not contain information regarding 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. [3, 4] There is no national institute of health and the national laboratory system does not have a website. [3]

[1] Ministry of Health (Ministerio de Salud). 2014. “Government presents plan to control Ebola”. [http://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1284-gobierno-presenta-plan-contra-el-ebola]. Accessed 23 August 2020.
[2] Despacho 505. 2020. “Oubreaks of COVID-19 could multiply rapidly advises epidemiologist”. [https://www.despacho505.com/brotes-de-covid-19-se-pueden-multiplicar-de-forma-rapida-advierte-epidemiologo/]. Accessed 23 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Governance (Ministerio de Gobernacion). 2020. “General Directorate of Migration and Foreigners”. [https://www.migob.gob.ni/migracion/]. Accessed 23 August 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: 0

In Nicaragua, there is insufficient public evidence that the country provides an applied epidemiology training program (such as FETP) in the country. Information previously on the website of the Council of Health Ministers of Central America and the Dominican Republic (COMICSA) on the restarting of an FETP program in Nicaragua is no longer available. [1, 2] There is no public evidence that Nicaragua sends citizens to another country to participate in applied epidemiology training programs. [3] The website of Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) lists Nicaragua as a member of two FETP programs: the Nicaragua Field Epidemiology Training Program and the Central America Field Epidemiology Training Program, but the "Program Overview" and "Achievements" sections for both programs simply state "Not Available", providing no details on the programs. [4, 5] In the context of the COVID-19 pandemic, the TEPHINET website stated that Nicaraguan field epidemiologists in the country were working on an "update of the Pandemic Influenza Intersectorial Plan (PIP) and other respiratory viruses, which includes COVID-19, at the central level of the Ministry of Health" and that "other epidemiologists are strengthening surveillance and training health personnel and institutions". The note does not mention when, where or via which program these epidemiologists were trained. [6] The websites of the Ministry of Health, Network of Field Epidemiology Programs in South America (RedSur) and TEPHINET do not contain additional information regarding applied epidemiology training in Nicaragua or the sending of citizens to another country to participate in applied epidemiology training programs. [3, 7, 8]

[1] Council of Health Ministers of Central America (Consejo de Ministros de Salud de Centroamérica). 2018. "Official FETP Mission to Nicaragua" ("Misión Oficial a FETP Nicaragua"). [http://comisca.net/content/misi%C3%B3n-oficial-fetp-nicaragua-0]. Accessed 16 November 2018.
[2] Council of Health Ministers of Central America (Consejo de Ministros de Salud de Centroamérica). 2018. "Official FETP Mission to Nicaragua" ("Misión Oficial a FETP Nicaragua"). [http://comisca.net/content/misi%C3%B3n-oficial-fetp-nicaragua]. Accessed 16 November 2018.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. "Nicaragua Field Epidemiology Training Program". [https://www.tephinet.org/training-programs/nicaragua-field-epidemiology-training-program]. Accessed 23 August 2020.
[5] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. "Central America Field Epidemiology Training Program". [https://www.tephinet.org/training-programs/central-america-field-epidemiology-training-program]. Accessed 23 August 2020.
[6] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. "FETP activities in response to coronavirus disease COVID-19". [https://www.tephinet.org/fetp-activities-in-response-to-coronavirus-disease-

19-covid-19]. Accessed 23 August 2020.
[7] Network of Field Epidemiology Programs in South America (RedSur). 2018. “Inicio”. [http://redsur.org/]. Accessed 5 August 2020.
[8] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. “Training Programs”. [https://www.tephinet.org/training-programs]. Accessed 5 August 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: 0

In Nicaragua, there is insufficient public evidence that the country has available field epidemiology training program (such as FETP) that are explicitly inclusive of animal health professionals and there is no public evidence of a specific animal health field epidemiology training program. Information previously on the website of the Council of Health Ministers of Central America and the Dominican Republic (COMICSA) on the restarting of an FETP program in Nicaragua is no longer available. [1, 2] The website of Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET) lists Nicaragua as a member of two FETP programs: the Nicaragua Field Epidemiology Training Program and the Central America Field Epidemiology Training Program, but the “Program Overview” and “Achievements” sections for both programs simply state “Not Available”, providing no details on the programs. [3, 4] The OIE's 2011 PVS Gap Analysis noted that animal epidemiological surveillance was limited, there was a lack of human and physical resources, and professionals needed training. [5] The websites of the Ministry of Health, Ministry of Agriculture, Network of Field Epidemiology Programs in South America (RedSur) and TEPHINET do not contain additional information regarding applied epidemiology training in Nicaragua or the sending of citizens to another country to participate in applied animal epidemiology training programs. [6, 7, 8, 9]

[1] Council of Health Ministers of Central America (Consejo de Ministros de Salud de Centroamérica). 2018. "Official FETP Mission to Nicaragua" (“Misión Oficial a FETP Nicaragua”). [http://comisca.net/content/misi%C3%B3n-oficial-fetp-nicaragua-0]. Accessed 16 November 2018.
[2] Council of Health Ministers of Central America (Consejo de Ministros de Salud de Centroamérica). 2018. "Official FETP Mission to Nicaragua" (“Misión Oficial a FETP Nicaragua”). [http://comisca.net/content/misi%C3%B3n-oficial-fetp-nicaragua]. Accessed 16 November 2018.
[3] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. “Nicaragua Field Epidemiology Training Program”. [https://www.tephinet.org/training-programs/nicaragua-field-epidemiology-training-program]. Accessed 23 August 2020.
[4] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. “Central America Field Epidemiology Training Program”. [https://www.tephinet.org/training-programs/central-america-field-epidemiology-training-program]. Accessed 23 August 2020.
[5] World Organization for Animal Health (OIE). 2011. "PVS Gap Analysis Nicaragua Report" ("Análisis de Brechas PVS Informe Nicaragua"). [http://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/pdf/Nicaragua-PVSGapAnalysis_FinalReport.pdf]. Accessed 19 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] Network of Field Epidemiology Programs in South America (RedSur). 2018. “Inicio”. [http://redsur.org/]. Accessed 5 August 2020.
[8] Training Programs in Epidemiology and Public Health Interventions Network (TEPHINET). 2020. “Training Programs”. [https://www.tephinet.org/training-programs]. Accessed 5 August 2020.

[9] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 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: 1

There is insufficient public evidence that Nicaragua has an overarching national public health emergency response plan in place, although at least one disease-specific plan is in place and publicly available. The only plan for Nicaragua publicly available online via an official source is the country’s 2007 National Response Plan for the Risk of Pandemic Flu and Avian Flu which is hosted at the website of the Pan American Health Organization (PAHO). [1] The Ministry of Health (MINSA) is tasked with supervising the plan. The plan’s goal is to improve Nicaragua’s ability to respond to a possible influenza outbreak by preventing, controlling and containing the spread of the virus. The plan includes scenarios with potential infection rates, a three-level alert system, and integration with the national Disaster Operations Centre (CODE). [1] According to press releases from MINSA, in 2014, the government also prepared a response plan for Ebola, but it has not been published on MINSA’s website. [2, 3, 4, 5] The National Response Plan from Nicaragua’s emergency management agency, the National System of Disaster Prevention, Mitigation and Attention (SINAPRED), only mentions illnesses and pandemics in the context of post-disaster recovery and avoiding public health problems following a disaster. [6] While not a complete public health emergency response plan, MINSA’s Regulation-019 outlines the operations of the health-sector Emergency Operations Centre (COE). The regulation was prepared to respond to the risk of avian flu, but applies to other public health emergencies as well. [7] A document titled “Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19)

Nicaragua – 2020" is available on a blog website that appears to be affiliated with the National Autonomous University of Nicaragua, but there is insufficient evidence that the Protocol and the website are official. [8] The websites of the Ministry of Health and SINAPRED do not contain additional public information regarding a national public health emergency response plan which addresses planning for multiple communicable diseases with pandemic potential. [5, 9]

[1] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2014. "Government presents plan to control Ebola". [http://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1284-gobierno-presenta-plan-contra-el-ebola]. Accessed 23 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2014. "Emergency Cabinet Presents Ebola Plan to Diplomatic Corps" ("GABINETE DE EMERGENCIA PRESENTA PLAN CONTRA EL ÉBOLA A CUERPO DIPLOMÁTICO"). [http://www.minsa.gob.ni/index.php/103-noticias-2014/1330-gabinete-de-emergencia-presenta-plan-contra-el-ebola-a-cuerpo-diplomatico]. Accessed 23 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2014. "Representative of PAHO/WHO assures that Nicaragua has a well-structured plan". [https://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1287-nicaragua-tiene-un-plan-de-emergencia-bien-estructurado-asegura-representante-de-ops-oms]. Accessed 24 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED"). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 2020.
[8] Social Media Bicentenaria UNAN León. 2020. "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020". [https://bicentenariaunanleon.blogspot.com/2020/03/protocolo-de-preparacion-y-respuesta_17.html]. Accessed 24 August 2020.
[9] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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: 0

There is no public evidence that Nicaragua has an overarching national public health emergency response plan in place or that any of the country's publicly available national public health emergency response plans have been updated in the last 3 years. The only publicly available plan, the National Response Plan for the Risk of Pandemic Flu and Avian Flu, was issued in 2007. [1] In 2014, the government also prepared a response plan for Ebola, but it is not publicly available. [2, 3] In 2016, the Ministry of Health (MINSA) reported that it planned to work with municipalities to update local health emergency plans for

disasters. [4] The plans are not available at the Ministry of Health's website. [3] MINSA's Regulation-019 outlines the operations of the health-sector Emergency Operations Centre (COE). It was published in 2009. [5] The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) only mentions illnesses and pandemics in the context of post-disaster recovery and avoiding public health problems following a disaster. It was issued in 2008. [6] In March 2020, MINSA stated that an "inter-institutional commission" was updating the country's pandemic response plan, but no plan has been made publicly available on MINSA's or other government websites. [3, 7] A document titled "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020" is available on a blog website that appears to be affiliated with the National Autonomous University of Nicaragua, but there is insufficient evidence that the Protocol and the website are official. [8] The websites of the Ministry of Health and SINAPRED do not contain additional public information regarding an updated national public health emergency response plan which addresses planning for multiple communicable diseases with pandemic potential. [3, 9]

[1] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2014. "Government presents plan to control Ebola". [http://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1284-gobierno-presenta-plan-contra-el-ebola]. Accessed 23 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2016. "MINSA Work Plan for 2016 Strengthened with the Participation of the Organised Population" ("PLAN DE TRABAJO DEL MINSA EN EL 2016 FORTALECIDO CON LA PARTICIPACIÓN DE LA POBLACION ORGANIZADA". [http://www.minsa.gob.ni/index.php/enlaces/105-noticias-2016/2343-plan-de-trabajo-del-minsa-en-el-2016-fortalecido-con-la-participacion-de-la-poblacion-organizada]. Accessed 24 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 2020.
[6] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED"). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "What plans does Nicaragua have to face the coronavirus?". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5043-con-que-planes-cuenta-nicaragua-ante-el-coronavirus]. Accessed 24 August 2020.
[8] Social Media Bicentenaria UNAN León. 2020. "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020". [https://bicentenariaunanleon.blogspot.com/2020/03/protocolo-de-preparacion-y-respuesta_17.html]. Accessed 24 August 2020.
[9] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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: 0

There is no public evidence that Nicaragua has an overarching national public health emergency response plan in place. One disease-specific plan is in place and publicly available and it includes considerations for pediatric and/or other vulnerable populations. Nicaragua's only plan which is publicly available online is the National Response Plan for the Risk of Pandemic Flu and Avian Flu which was issued in 2007. The influenza response plan includes considerations for vulnerable populations. Its infection scenarios highlight possible infection rates among children and youth. The plan includes actions to provide basic services to care centers for children and the elderly as well as their potential closure in order to prevent the spread of infections. The plan also recommends personal protection equipment (masks) for poultry farm workers and other at-risk populations. [1] In March 2020, the Ministry of Health (MINSA) stated that an "inter-institutional commission" was updating the country's pandemic response plan, but no plan has been made publicly available on MINSA's or other government websites. [2, 3] A document titled "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020" is available on a blog website that appears to be affiliated with the National Autonomous University of Nicaragua, but there is insufficient evidence that the Protocol and the website are official. [4] The websites of the Ministry of Health and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional public information regarding an overarching public health emergency response plan that includes considerations for pediatric and/or other vulnerable populations. [3, 5]

[1] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "What plans does Nicaragua have to face the coronavirus?". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5043-con-que-planes-cuenta-nicaragua-ante-el-coronavirus]. Accessed 24 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Social Media Bicentenaria UNAN León. 2020. "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020". [https://bicentenariaunanleon.blogspot.com/2020/03/protocolo-de-preparacion-y-respuesta_17.html]. Accessed 24 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.

3.1.1d

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

Yes = 1 , No = 0

Current Year Score: 0

2020

WHO Strategic Partnership for IHR and Health Security (SPH)

3.1.2 Private sector involvement in response planning

3.1.2a

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

Yes = 1 , No = 0

Current Year Score: 0

There is no public evidence that Nicaragua has mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. Nicaragua's only public health emergency response plan which is publicly available online is the National Response Plan for the Risk of Pandemic Flu and Avian Flu which was issued in 2007. It does not mention coordination with the private sector. [1] The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) does not cover public health emergencies; it only mentions illnesses and pandemics in the context of post-disaster recovery and avoiding public health problems following a disaster. It was issued in 2008. Nonetheless, the plan calls for close coordination with the private sector, including private sector representatives on sectoral, regional and municipal disaster prevention committees. [2] In March 2020, the Ministry of Health (MINSA) stated that an "inter-institutional commission" was updating the country's pandemic response plan, but no plan has been made publicly available on MINSA's or other government websites. [3, 4] A document titled "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020" is available on a blog website that appears to be affiliated with the National Autonomous University of Nicaragua, but there is insufficient evidence that the Protocol and the website are official. [5] A March 2020 press release from MINSA stated that the ministry was carrying out surveillance activities related to COVID-19 across the entire healthcare network, including private facilities. [6] The websites of the Ministry of Health and SINAPRED do not contain additional public information regarding mechanisms for engaging with the private sector to assist with outbreak emergency preparedness and response. [4, 7]

[1] National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED"). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "What plans does Nicaragua have to face the coronavirus?". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5043-con-que-planes-cuenta-nicaragua-ante-el-coronavirus]. Accessed 24 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Social Media Bicentenaria UNAN León. 2020. "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020". [https://bicentenariaunanleon.blogspot.com/2020/03/protocolo-de-preparacion-y-respuesta_17.html]. Accessed 24 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Taiwan Republic of China shares successful experience containing coronavirus with Nicaragua". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5040-republica-de-china-taiwan-comparte-con-nicaragua-exitosa-experiencia-de-contencion-del-coronavirus]. Accessed 24 August 2020.
[7] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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: 1

There is public evidence that Nicaragua has a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic, but NPIs are only discussed in one disease-specific plan. Nicaragua's only public health emergency response plan which is publicly available online is the National Response Plan for the Risk of Pandemic Flu and Avian Flu which was issued in 2007. [1] The Plan does not state that it can be used for other diseases. [1] Nonetheless, the Plan does include an appendix on "Non-Pharmaceutical Interventions to deal with Pandemic Influenza". The NPIs included cover the individual (self-isolation, quarantine, and infection control measures) and community (quarantine of groups and areas, closures and cancellations for social distancing, and infection control measures) levels. The appendix defines each category of NPI with specific examples and recommends when they should be implemented based on the World Health Organization's six-phase pandemic alert level. For example, in phase 3 self-isolation, contact tracing, and monitoring of health are recommended; quarantine and health cordons are not; and closures, cancellations and restrictions on movement are marked as possible. [1] In March 2020, the Ministry of Health (MINSA) stated that an "inter-institutional commission" was updating the country's pandemic response plan, but no plan has been made publicly available on MINSA's or other government websites. [2, 3] A document titled "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020" is available on a blog website that appears to be affiliated with the National Autonomous University of Nicaragua, but there is insufficient evidence that the Protocol and the website are official. [4] The websites of the Ministry of Health and SINAPRED do not contain additional public information regarding a policy, plan and/or guidelines in place to implement non-pharmaceutical interventions (NPIs) during an epidemic or pandemic. [3, 5]

[1] National System of Disaster Prevention, Mitigation and Attention (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "What plans does Nicaragua have to face the coronavirus?". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5043-con-que-planes-cuenta-nicaragua-ante-el-coronavirus]. Accessed 24 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Social Media Bicentenaria UNAN León. 2020. "Protocol for Preparation and Response to the Risk of Introduction of the New Virus Coronavirus (COVID-19) Nicaragua – 2020". [https://bicentenariaunanleon.blogspot.com/2020/03/protocolo-de-preparacion-y-respuesta_17.html]. Accessed 24 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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: 0

There is insufficient public evidence that Nicaragua has activated its national emergency response plan for an infectious disease outbreak in the past year, and there is no public evidence that the country has completed a national-level biological threat-focused exercise (either with WHO or separately) in the past year. Following the World Health Organization's (WHO) declaration of a public health emergency of international concern in January 2020, Nicaragua activated its National Inter-Institutional Commission for early detection care and prevention of coronavirus. [1] In March 2020, the Ministry of Health (MINSA) stated that the "inter-institutional commission" was updating the country's pandemic response plan, but no plan has been made publicly available on MINSA's or other government websites. [2, 3] According to local press, the government has not declared a state of emergency or an epidemiological alert in response to the COVID-19 pandemic. [4] The websites of MINSA and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain a declaration of a health emergency. [3, 5] In June 2020, Nicaragua carried out its annual national emergency response exercise virtually. It focused on response to heavy rains and did not contemplate a biological threat. [6] The WHO's Simulation Exercise site does not contain any reports for Nicaragua. [7] The WHO's Health Security Calendar does not show any engagement with Nicaragua during 2019, 2020 or 2021. [8] The websites of MINSA and SINAPRED do not contain additional information regarding an activation of the national emergency response plan for an infectious disease outbreak in the past year or a national-level biological threat-focused exercise (either with WHO or separately) in the past year. [3, 5]

[1] El 19 Digital. 2020. "Nicaragua creates national inter-institutional commission for coronavirus". [https://www.el19digital.com/articulos/ver/titulo:99520-nicaragua-crea-comision-nacional-interinstitucional-ante-el-coronavirus]. Accessed 25 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "What plans does Nicaragua have to face the coronavirus?". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5043-con-que-planes-cuenta-nicaragua-ante-el-coronavirus]. Accessed 24 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] La Prensa. 2020. "Why did Daniel Ortega decree a health emergency with the H1N1 pandemic but refuses to do so for COVID-19". [https://www.laprensa.com.ni/2020/04/16/nacionales/2663670-por-que-daniel-ortega-decreto-emergencia-sanitaria-con-la-pandemia-del-h1n1-y-se-niega-a-hacerlo-por-el-covid-19]. Accessed 25 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[6] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "More than 202,000 persons participated in II exercise for protection of life virtually". [http://www.sinapred.gob.ni/index.php/noticias/38-mas-de-202-mil-personas-participaron-en-ii-ejercicio-de-proteccion-a-la-vida-de-manera-virtual]. Accessed 25 August 2020.

[7] World Health Organization (WHO). 2020. “Simulation Exercise”. [https://extranet.who.int/sph/simulation-exercise]. Accessed 25 August 2020.
[8] World Health Organization (WHO). 2020. “Health Security Calendar”. [https://extranet.who.int/sph/calendar]. Accessed 25 August 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 publicly available evidence that Nicaragua in the past year has identified a list of gaps and best practices in response (either through an infectious disease response of a biological-threat focused exercise) and developed a plan to improve response capabilities. The World Health Organization’s (WHO) After Action Review site does not contain any reports for Nicaragua (or anywhere else in the Americas). [1] The WHO’s Health Security Calendar does not show any engagement with Nicaragua during 2019, 2020 or 2021. [2] The websites of the Ministry of Health, the Ministry of Agriculture and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding an exercise to identify a list of gaps and best practices in response (either through an infectious disease response of a biological-threat focused exercise) and developed a plan to improve response capabilities. [3, 4, 5]

[1] World Health Organization. 2020. “After Action Review”. [https://extranet.who.int/sph/after-action-review]. Accessed 25 August 2020.
[2] World Health Organization (WHO). 2020. “Health Security Calendar”. [https://extranet.who.int/sph/calendar]. Accessed 25 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. “SINAPRED”. [http://www.sinapred.gob.ni/]. Accessed 24 August 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 publicly available evidence that Nicaragua in the past year has undergone a national-level biological threat-focused exercise that has included private sector representatives. In June 2020, Nicaragua carried out its annual national emergency response exercise virtually. It focused on response to heavy rains and did not contemplate a biological threat. [1] The World Health Organization’s (WHO) After Action Review site, Simulation Exercise site, Health Security Calendar and Nicaragua country page do not contain information regarding a national-level biological threat-focused exercise that has included private sector representatives in Nicaragua. [2, 3, 4, 5] The websites of the Ministry of Health, the Ministry of

Agriculture, the National System of Disaster Prevention, Mitigation and Attention (SINAPRED), WHO, and Pan American Health Organization do not contain additional information regarding a national-level biological threat-focused exercise that has included private sector representatives in Nicaragua. [6, 7, 8, 9, 10]

[1] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. “More than 202,000 persons participated in II exercise for protection of life virtually”. [http://www.sinapred.gob.ni/index.php/noticias/38-mas-de-202-mil-personas-participaron-en-ii-ejercicio-de-proteccion-a-la-vida-de-manera-virtual]. Accessed 25 August 2020.
[2] World Health Organization. 2020. “After Action Review”. [https://extranet.who.int/sph/after-action-review]. Accessed 25 August 2020.
[3] World Health Organization (WHO). 2020. “Simulation Exercise”. [https://extranet.who.int/sph/simulation-exercise]. Accessed 25 August 2020.
[4] World Health Organization (WHO). 2020. “Health Security Calendar”. [https://extranet.who.int/sph/calendar]. Accessed 25 August 2020.
[5] World Health Organization. 2020. “Nicaragua”. [https://www.who.int/countries/nic/en/]. Accessed 25 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. “SINAPRED”. [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[9] World Health Organization. 2020. “WHO”. [http://www.who.int/]. Accessed 21 August 2020.
[10] Pan American Health Organization (PAHO). 2020. “PAHO”. [https://www.paho.org/en]. Accessed 21 August 2020.

3.3 EMERGENCY RESPONSE OPERATION

3.3.1 Emergency response operation

3.3.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Nicaragua has a Disaster Operations Center (CODE) at the national level as well as an Emergency Operations Center (COE) for the health sector, run by the Ministry of Health (MINSA). The CODE is a permanent, specialized center that forms part of the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) and is managed by the Civil Defense division of the Army of Nicaragua. The CODE is responsible for activating the emergency system in coordination with SINAPRED’s National Committee. [1] In August 2019, upgrades to the CODE were finished, although details regarding the changes do not appear to be publicly available. The Army of Nicaragua stated that the upgrades would allow for “constant monitoring in real time of phenomena that create disasters, in order to provide timely warning to the population and implement contingency plans through the early warning communications system”. [2] MINSA’s COE was established in the face of the avian flu threat in 2009 and exists to deal with that and other public health emergencies. The COE coordinates MINSA’s national activities in a public health emergency or natural disaster and supports regional and local working groups. The COE contains three departments: communications, operations and decision-making. The COE is activated by order of the Minister of Health. [3]

[1] Army of Nicaragua (Ejército de Nicaragua). 2018. "Disaster Operations Centre" (“Centro de Operaciones de Desastres”). [https://www.ejercito.mil.ni/contenido/sociedad-civil/defensa-civil/defensa-civil-cod.html]. Accessed 20 August 2020.
[2] El 19 Digital. 2019. “Army of Nicaragua delivers modernization works to the Disaster Operations Center”.

[https://www.el19digital.com/articulos/ver/titulo:93535-ejercito-de-nicaragua-entrega-obras-de-modernizacion-del-centro-de-operaciones-de-desastres]. Accessed 25 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 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

In Nicaragua, there is no publicly available evidence that the national Disaster Operations Centre (CODE) or the Ministry of Health's (MINSA) Emergency Operations Centre (COE) is required to conduct a drill for a public health emergency scenario at least once per year, nor is there evidence that a yearly drill for a public health emergency scenario is conducted. The Law to Create the National System of Disaster Prevention, Mitigation and Attention (SINAPRED), Law No. 337 of 2000, and its accompanying regulations (Decree No. 53-2000) do not mention drills or requirements to conduct them. [1, 2] Regulation-019 created MINSA's COE in 2009 and does not mention drills. [3] The Civil Defense division of the Army of Nicaragua manages the CODE and its webpage states that one of its responsibilities is to carry out "exercises and drills to prepare for disasters". The text does not set a requirement for the frequency of drills. [4] The National System of Disaster Prevention, Mitigation and Attention's (SINAPRED) website contains evidence that drills have been conducted in 2020, including the national emergency response exercise that was conducted virtually in June 2020, which simulated a natural disaster caused by heavy rains. [5, 6] In terms of drills for public health emergencies, MINSA's website only contains public evidence of a drill conducted in 2014 with MINSA and the Managua airport to prepare for the possible arrival of Ebola in the country. [7] The websites of MINSA and SINAPRED do not contain annual reports or additional information regarding annual public health emergency scenario drills. [8, 9] In the Civil Defense section of the Army of Nicaragua's 2019 annual report, the division reported participating in four multi-threat response simulations, but did not describe the details of the simulations. [10] The website of the Army of Nicaragua does not contain additional information regarding annual public health emergency scenario drills. [11]

[1] President of the Republic of Nicaragua. 2000. "Law to Create the National System of Disaster Prevention, Mitigation and Attention Law No. 337" ("LEY CREADORA DEL SISTEMA NACIONAL PARA LA PREVENCION, MITIGACION Y ATENCION DE DESASTRES LEY No. 337").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/297E6E70F4940832062572020059E4CD?OpenDocument]. Accessed 20 August 2020.
[2] President of the Republic of Nicaragua. 2000. "Decree No. 53-2000" ("DECRETO No. 53-2000").
[http://www.ifrc.org/Docs/idrl/100ES.pdf]. Accessed 26 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-

funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 2020.
[4] Army of Nicaragua (Ejército de Nicaragua). 2018. "Mission and Functions" ("Misión y Funciones"). [https://www.ejercito.mil.ni/contenido/sociedad-civil/defensa-civil/defensa-civil-mision-funciones.html]. Accessed 20 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "Noticias". [http://www.sinapred.gob.ni/news]. Accessed 26 August 2020.
[6] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "More than 202,000 persons participated in II exercise for protection of life virtually". [http://www.sinapred.gob.ni/index.php/noticias/38-mas-de-202-mil-personas-participaron-en-ii-ejercicio-de-proteccion-a-la-vida-de-manera-virtual]. Accessed 25 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2014. "Drill Carried Out in the face of the Possible Introduction of Ebola to Nicaragua" ("REALIZAN SIMULACRO ANTE POSIBLE INGRESO DEL ÉBOLA A NICARAGUA"). [http://www.minsa.gob.ni/index.php/103-noticias-2014/1377-realizan-simulacro-ante-posible-ingreso-del-ebola-a-nicaragua]. Accessed 26 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[9] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[10] Army of Nicaragua (Ejército de Nicaragua). 2020. "2019 Annual Report". [https://www.ejercito.mil.ni/contenido/relaciones-publicas/publicaciones/docs/memoria_2019.pdf]. Accessed 26 August 2020.
[11] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.

3.3.1c

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

Yes = 1 , No = 0

Current Year Score: 0

There is no publicly available evidence to show that Nicaragua's national Disaster Operations Centre (CODE) or the Ministry of Health's (MINSA) Emergency Operations Centre (COE) can conduct, or has conducted within the last year, a coordinated emergency response or emergency response exercise activated within 120 minutes of the identification of the public health emergency/scenario. The websites of the Ministry of Health, Army of Nicaragua, and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain any information regarding a coordinated emergency response or emergency response exercise for a public health emergency/scenario during the last year. [1, 2, 3] The websites of MINSA and SINAPRED do not contain publicly available annual reports. [1, 2] In 2014, MINSA and the Managua airport carried out a drill to prepare for the possible arrival of Ebola in the country, but a press release on the drill does not contain information on response times. [4]

[1] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.

[4] Ministry of Health (Ministerio de Salud). 2014. "Drill Carried Out in the face of the Possible Introduction of Ebola to Nicaragua" ("REALIZAN SIMULACRO ANTE POSIBLE INGRESO DEL ÉBOLA A NICARAGUA"). [http://www.minsa.gob.ni/index.php/103-noticias-2014/1377-realizan-simulacro-ante-posible-ingreso-del-ebola-a-nicaragua]. Accessed 26 August 2020.

3.4 LINKING PUBLIC HEALTH AND SECURITY AUTHORITIES

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

3.4.1a

Does the country meet one of the following criteria?
- Is there public evidence that public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
- Are there publicly available standard operating procedures, guidelines, memorandums of understanding (MOUs), or other agreements between the public health and security authorities to respond to a potential deliberate biological event (i.e., bioterrorism attack)?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

In Nicaragua, there is no publicly available evidence that Nicaraguan public health and national security authorities have carried out an exercise to respond to a potential deliberate biological event or that publicly available standard operating procedures, guidelines, MOUs or other agreements between the public health and security authorities to respond to a potential deliberate biological event exist. The websites of the Ministry of Health, the National System of Disaster Prevention, Mitigation and Attention (SINAPRED), the Army of Nicaragua, and the National Police do not contain additional information regarding potential deliberate biological events or bioterrorism. [1, 2, 3, 4]

[1] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[4] National Police (Policia Nacional). 2020. "Policia Nacional". [https://www.policia.gob.ni/]. Accessed 26 August 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: 1

Nicaragua's Ministry of Health (MINSA) Regulation-024, "Communication Management in a Health Emergency", provides guidelines for communication with the public during a public health emergency and includes some actions for messages to reach populations and sectors with different communications needs. Regulation-024 on communication in public health emergencies states that the ministry should "develop communications materials in accordance with the characteristics of the emergency and keeping in mind the idiosyncrasies, culture, [and] languages of ethnic communities". The regulations call for a number of different communications methods to reach different populations, including: loudspeakers, home visits, community meetings, religious gatherings, radio, brochures, television spots, public meetings, websites and others. [1] The regulations do no provide more specific information regarding populations with special needs. [1] In 2014 national and local health authorities in Nicaragua received training on risk communication during a health emergency from the Pan American Health Organization. The training included support for local health districts to develop risk communication plans that included communications methods such as home visits, partnerships with strategic local allies, media appearances, and creation and distribution of informational materials. [2] The websites of the Ministry of Health and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional public information regarding how messages will reach populations and sectors with different communications needs. [3, 4]

[1] Ministry of Health (Ministerio de Salud). 2009. "Regulation-024 Communication Management in a Health Emergency" ("Normativa - 024 Norma del Manejo de la Comunicación en Emergencia Sanitaria".) [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---024-Norma-del-Manejo-de-la-Comunicaci%C3%B3n-en-Emergencia-Sanitaria/]. Accessed 26 August 2020.
[2] Pan American Health Organization. 2014. "Strengthening capacities for AH1N1 influenza and risk communication". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=197:fortalecen-capacidades-en-influenza-ah1n1-y-en-comunicacion-de-riesgo&Itemid=244]. Accessed 26 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.

3.5.1 Risk communication planning

3.5.1a

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

Yes = 1 , No = 0

Current Year Score: 1

Nicaragua has regulations detailing a risk communication plan that is specifically intended for use during a public health emergency. The Ministry of Health's (MINSA) Regulation-024 Communication Management in a Health Emergency from 2009 provides guidelines for communication with the public and other parts of government during a public health emergency. The guidelines include creating an intersectoral committee for social communication made up of experts, appointing a single spokesperson, using various methods of communication, updating messages regularly, identifying a maximum of three key messages for the public and using surveys to gauge the population's reaction to the messages received. [1] In 2014 national and local health authorities in Nicaragua received training on risk communication during a health emergency from the Pan American Health Organization. [2]

[1] Ministry of Health (Ministerio de Salud). 2009. "Regulation-024 Communication Management in a Health Emergency" ("Normativa - 024 Norma del Manejo de la Comunicación en Emergencia Sanitaria".) [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---024-Norma-del-Manejo-de-la-Comunicaci%C3%B3n-en-Emergencia-Sanitaria/]. Accessed 26 August 2020.
[2] Pan American Health Organization. 2014. "Strengthening capacities for AH1N1 influenza and risk communication". [https://www.paho.org/nic/index.php?option=com_content&view=article&id=197:fortalecen-capacidades-en-influenza-ah1n1-y-en-comunicacion-de-riesgo&Itemid=244]. Accessed 26 August 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: 1

There is evidence that the risk communication plan presented by Nicaragua's Ministry of Health (MINSA) in Regulation-024, "Communication Management in a Health Emergency", designates a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. Regulation-024 on communication in public health emergencies defines the role of "sole spokesperson" as the "person designated by the maximum authorities of the Government (President of the Republic) to provide information to the population". The regulations state that the inter-sectorial technical committee on social communications should facilitate the necessary information and messaging to the sole spokesperson and that the sole spokesperson "should have broad knowledge of the topic, ease of expression, and body language that projects safety and empathy". [1] In practice, during the COVID-19 pandemic the spokesperson role was alternately filled by the Minister of Health and the Secretary General of MINSA, who have also been accompanied by the Vice President, who is also the wife of the President. [2, 3, 4, 5] The websites of the Ministry of Health and the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional public information regarding the designation of a specific position within the government to serve as the primary spokesperson to the public during a public health emergency. [6, 7]

[1] Ministry of Health (Ministerio de Salud). 2009. "Regulation-024 Communication Management in a Health Emergency" ("Normativa - 024 Norma del Manejo de la Comunicación en Emergencia Sanitaria".) [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---024-Norma-del-Manejo-de-la-Comunicaci%C3%B3n-en-Emergencia-Sanitaria/]. Accessed 26 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "PAHO recognizes involuntary error on coronavirus case number in Nicaragua". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5148-ops-reconoce-el-error-involuntario-sobre-las-cifras-de-casos-de-coronavirus-en-nicaragua]. Accessed 26 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Nicaragua has a robust epidemiological surveillance system to detect cases of COVID-19". [http://www.minsa.gob.ni/index.php/component/content/article/110-noticias-2020/5119-nicaragua-cuenta-con-un-sistema-robusto-de-vigilancia-epidemiologica-para-detectar-casos-del-covid-19]. Accessed 26 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Comrade Rosario Murillo: It's our responsibility as a government and state to take extreme measures in the face of the coronavirus". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5127-companera-rosario-murillo-es-nuestra-responsabilidad-como-gobierno-y-estado-extremar-las-medidas-ante-el-coronavirus]. Accessed 26 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Brigade workers make 453,000 visits to homes with solidarity and

respect". [http://www.minsa.gob.ni/index.php/110-noticias-2020/5129-brigadistas-realizan-453-mil-visitas-a-los-hogares-con-solidaridad-y-respeto]. Accessed 26 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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

In Nicaragua, there is some public evidence that the Ministry of Health (MINSA) has actively shared messages via online media platforms (eg social media, website) to inform the public about ongoing public health concerns. In August 2019, a Facebook page was created for MINSA. [1] During the COVID-19 pandemic, MINSA has shared some prevention information as well as sporadically shared its weekly COVID-19 update press release. [2, 3] On its own website, MINSA has shared its weekly COVID-19 update press release, although as of August 2020 it had not published an official epidemiological surveillance system bulletin since May 2020. [4, 5] MINSA's website contains limited information regarding specific information such as updating about location of cases or new measures being implemented prior to the COVID-19 pandemic. [6] The National System of Disaster Prevention, Mitigation and Attention (SINAPRED) has a social media presence online, and recent messages have been focused on weather phenomena, earthquakes, and other non-public health messages, although SINAPRED has shared MINSA's weekly COVID-19 update press release. [7, 8]

[1] Ministry of Health (Ministerio de Salud). 2020. "MINSA Facebook". [https://www.facebook.com/Ministerio-de-Salud-Nicaragua-105206224175714/?ref=page_internal]. Accessed 26 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "Prevention for patients with kidney disease". [https://www.facebook.com/permalink.php?story_fbid=329809331715401&id=105206224175714]. Accessed 26 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Coronavirus Situation Press Release 14 July". [https://www.facebook.com/permalink.php?story_fbid=303124604383874&id=105206224175714]. Accessed 26 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "
http://www.minsa.gob.ni/index.php/component/search/?searchword=nota%20de%20prensa&searchphrase=all&Itemid=435]. Accessed 26 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Weekly Epidemiological Bulletins" ("Boletines Epidemiológicos Semanales"). [http://www.minsa.gob.ni/index.php/direccion-general-de-vigilancia-de-la-salud-publica/boletin-epidemiologico]. Accessed 22 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "Facebook SINAPRED". [https://www.facebook.com/sinaprednicaragua/]. Accessed 26 August 2020.

[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "Twitter SINAPRED". [https://twitter.com/cdsinapred]. Accessed 26 August 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: 0

Senior leaders in Nicaragua, including officials at the Ministry of Health (MINSA) and the Vice President, have shared misinformation or disinformation on infectious diseases, specifically regarding the COVID-19 pandemic in 2020. Disinformation from the government in Nicaragua during the COVID-19 pandemic has principally focused on inaccurate numbers of cases and infections and has also included inaccurate information regarding the government's response. In May 2020, the Nicaraguan Catholic Church's Commission for Justice and Peace in Nicaragua expressed worries regarding the "grave political, economic and social situation" in the country and stated that "disinformation" has prevailed regarding the real numbers of infections and deaths. [1] One national news source stated that since April 2018 the Vice President operated an "office dedicated to producing false information" and that during the COVID-19 pandemic this false information has prevailed as official sources of information have remained silent on the status of the pandemic in the country. [2] In an online conference in May 2020, a news media editor in the country stated that the lack of official information on the pandemic had contributed to speculation in the country "simply because they do not have another option". The editor stated that the government's objective has been to "minimize the pandemic". [3] In an article from the BBC, a Nicaraguan epidemiologist stated that the government's infection and death figures "are not credible". [4] A June 2020 article from a national news source stated that MINSA was the principal source of disinformation in the country because, unlike all other regional ministries of health, it does not present detailed information on cases and only shares information weekly instead of daily. [5] In late May 2020, after criticism from the Pan American Health Organization on the lack of official information, the Vice President presented a "white book" on the government's response to the pandemic. One newspaper highlighted seven points within the book that did not match the reality of the country, including that the false claim that the government had established preventive measures to control the virus and that MINSA had issued an official document outlining its plan to respond to the pandemic, although no such document is on MINSA's website. [6] Five former Nicaraguan ministers of health expressed their concern over the government's handling of the pandemic in a letter to the World Health Organization. [7] In August 2020, a local news source reported that leaked documents confirmed that MINSA recorded community transmission of COVID-19 in Nicaragua in May 2020, but that officials continued to deny that community transmission was occurring in the country. [8] For the government's part, in May 2020, a government news source stated that disinformation regarding the pandemic was "a form of media terrorism against a government that has not been submissive to the United States", while also casting blame on news sources from neighboring Costa Rica. [9]

[1] Vatican News. 2020. "Nicaragua coronavirus disinformation Commission for Justice and Peace". [https://www.vaticannews.va/es/iglesia/news/2020-05/coronavirus-nicaragua-desinformacion-comision-justicia-paz.html]. Accessed 27 August 2020.
[2] Confidencial. 2020. "Journalists confront censorship and disinformation with COVID-19 in Nicaragua". [https://confidencial.com.ni/periodistas-enfrentan-censura-y-desinformacion-con-covid-19-nicaragua/]. Accessed 27 August 2020.
[3] Connectas. 2020. "This is how disinformation is created in Latin America". [https://www.connectas.org/eventos/asi-se-fabrica-la-desinformacion-en-america-latina/]. Accessed 27 August 2020.
[4] BBC. 2020. "Coronavirus: 'The government of Nicaragua is trying to hide the deaths'". [https://www.bbc.com/mundo/noticias-america-latina-52716064]. Accessed 27 August 2020.

[5] Coyuntura. 2020. “MINSA is the principal source of disinformation on COVID-19”. [https://www.coyuntura.co/post/minsa-principal-fuente-de-desinformaci%C3%B3n-sobre-el-covid-19]. Accessed 27 August 2020.
[6] La Prensa. 2020. “Seven points from the white book on COVID-19 in Nicaragua that manipulate the reality of the pandemic in the country”. [https://www.laprensa.com.ni/2020/05/25/nacionales/2677931-siete-puntos-del-libro-blanco-sobre-el-covid-19-en-nicaragua-que-manipulan-la-realidad-de-la-pandemia-en-el-pais]. Accessed 27 August 2020.
[7] La Prensa. 2020. “PAHO director shares the concern expressed by five Nicaraguan ex-ministers of health about the coronavirus pandemic”. [https://www.laprensa.com.ni/2020/05/30/nacionales/2679853-directora-de-la-ops-comparte-preocupacion-planteada-por-cinco-exministros-de-salud-nicaraguenses-ante-la-pandemia-del-coronavirus]. Accessed 27 August 2020.
[8] Confidencial. 2020. “MINSA lost track of the epidemiology of the pandemic since May”. [https://confidencial.com.ni/desde-mayo-el-minsa-perdio-rastro-epidemiologico-de-la-pandemia/]. Accessed 27 August 2020.
[9] El 19 Digital. 2020. “Nicaragua and the pandemic of disinformation and manipulation in the news media”. [https://www.el19digital.com/articulos/ver/titulo:103382-nicaragua-y-la-pandemia-de-la-desinformacion-y-manipulacion-de-los-medios-de-comunicacion]. Accessed 27 August 2020.

3.6 ACCESS TO COMMUNICATIONS INFRASTRUCTURE

3.6.1 Internet users

3.6.1a

Percentage of households with Internet
Input number
Current Year Score: 27.86

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: 88.43

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: 6.0

2019

Gallup; Economist Impact calculation

3.6.4 Female access to the Internet

3.6.4a

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

Input number

Current Year Score: 9.0

2019

Gallup; Economist Impact calculation

3.7 TRADE AND TRAVEL RESTRICTIONS

3.7.1 Trade restrictions

3.7.1a

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

Yes = 0 , No = 1

Current Year Score: 0

There is public evidence that Nicaragua has issued a restriction, without international/bilateral support, on the export/import of medical goods (eg: medicines, oxygen, medical supplies, PPE) due to an infectious disease outbreak. In July 2020, Nicaragua announced import tariffs on ventilators, parts and surgical masks, which had previously been exempt from the value-added tax. [1] The World Trade Organization's (WTO) list of COVID-related trade measures does not include any measures taken by Nicaragua. [2] The Latin American and Caribbean Economic System's (SELA) summary of COVID-related measures does not include any trade-related measures taken by Nicaragua. [3] The websites of the Ministry of Health, the Ministry of Agriculture, Institute for Agricultural Protection and Health, and the Ministry of Development, Industry and Commerce do not contain additional information regarding a restriction, without international/bilateral support, on the export/import of medical goods due to an infectious disease outbreak. [4, 5, 6, 7] The website of the Ministry of Foreign Relations did not load as of August 2020. [8]

[1] Forbes Central America. 2020. "Nicaragua taxes importation of ventilators and masks". [https://forbescentroamerica.com/2020/07/02/nicaragua-grava-importacion-de-ventiladores-y-mascarillas-denuncia-patronal/]. Accessed 27 August 2020.
[2] World Trade Organization. 2020. "COVID Measures". [https://www.wto.org/english/tratop_e/covid19_e/covid_measures_s.pdf]. Accessed 6 August 2020.
[3] Latin American and Caribbean Economic System. 2020. "Summary of COVID-related measures". [http://www.sela.org/media/3219723/covid-19-resumen-de-las-principales-medidas-estados-miembros-sela.pdf]. Accessed 27 August 2020.

[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[6] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[7] Ministry of Development, Industry and Commerce (Ministerio de Fomento, Industria y Comercio). 2020. "MIFIC". [https://www.mific.gob.ni/]. Accessed 19 August 2020.
[8] Ministry of Foreign Relations (MInisterio de Relaciones Exteriores). 2020. "Cancilleria". [http://www.cancilleria.gob.ni/]. Accessed 27 August 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

There is no public evidence that Nicaragua has issued a restriction, without international/bilateral support, on the export/import of non-medical goods (eg: food, textiles, etc) due to an infectious disease outbreak. The World Trade Organization's (WTO) list of COVID-related trade measures does not include any measures taken by Nicaragua. [1] The Latin American and Caribbean Economic System's (SELA) summary of COVID-related measures does not include any trade-related measures taken by Nicaragua. [2] The websites of the Ministry of Health, the Ministry of Agriculture, Institute for Agricultural Protection and Health, and the Ministry of Development, Industry and Commerce do not contain additional information regarding a restriction, without international/bilateral support, on the export/import of non-medical goods due to an infectious disease outbreak. [3, 4, 5, 6] The website of the Ministry of Foreign Relations did not load as of August 2020. [7]

[1] World Trade Organization. 2020. "COVID Measures". [https://www.wto.org/english/tratop_e/covid19_e/covid_measures_s.pdf]. Accessed 6 August 2020.
[2] Latin American and Caribbean Economic System. 2020. "Summary of COVID-related measures". [http://www.sela.org/media/3219723/covid-19-resumen-de-las-principales-medidas-estados-miembros-sela.pdf]. Accessed 27 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[5] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[6] Ministry of Development, Industry and Commerce (Ministerio de Fomento, Industria y Comercio). 2020. "MIFIC". [https://www.mific.gob.ni/]. Accessed 19 August 2020.
[7] Ministry of Foreign Relations (MInisterio de Relaciones Exteriores). 2020. "Cancilleria". [http://www.cancilleria.gob.ni/]. Accessed 27 August 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 May 2020, Nicaragua banned land traffic from Costa Rica for approximately two weeks during the COVID-19 pandemic as a result of a dispute between countries on measures to mitigate infectious disease risk from cargo transport drivers. The primary border crossing between the two countries was closed on May 18th and reopened on June 1st. [1, 2] According to news reports, Nicaragua is the only country in Central America to not have closed its borders, although from July 15, 2020 it implemented restrictions on travelers to limit the possibility of travelers arriving infected with COVID-19. Travelers must present a negative COVID test within 72 hours prior to their arrival in order to be allowed to enter and flights are authorized on a case-by-case basis. [3]

[1] La Republica. 2020. "Nicaragua closes borders with Costa Rica". [https://www.larepublica.net/noticia/nicaragua-cierra-fronteras-a-costa-rica]. Accessed 27 August 2020.
[2] Deutsche Welle. 2020. "Costa Rica and Nicaragua unblock border for cargo transport". [https://www.dw.com/es/costa-rica-y-nicaragua-desbloquean-frontera-para-transporte-de-carga/a-53646648]. Accessed 27 August 2020.
[3] La Vanguardia. 2020. "Nicaragua establishes restrictions to enter its territory because of COVID-19". [https://www.lavanguardia.com/vida/20200715/482323483261/nicaragua-establece-restricciones-para-ingresar-a-su-territorio-por-covid-19.html]. Accessed 27 August 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: 97.75

2018

WHO; national sources

4.1.1b

Nurses and midwives per 100,000 people
Input number

Current Year Score: 153.34

2018

WHO; national sources

4.1.1c

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

Yes = 1 , No = 0

Current Year Score: 1

There is public evidence that Nicaragua has a public health workforce strategy in place to identify fields where there is an insufficient workforce and strategies to address these shortcomings. The strategy is contained in the Ministry of Health's (MINSA) Multi-Year Health Plan 2015-2021 (PPS), which was last updated in 2017. The PPS contains some specific actions related to a public health workforce strategy, but a more detailed Human Resources Development Plan (called for in the PPS) is not publicly available. The PPS addresses "Human Resources and Quality of Care" in its priorities through 2021. The PPS calls for MINSA to develop a "Human Resources Development Plan for healthcare professionals and technicians". [1] While the PPS is available at MINSA's website, along with a manual describing how to create a Human Resources Development Plan, an updated Human Resources Development Plan is not publicly available. [2, 3] However, the PPS lists some actions related to developing the public health workforce. It calls on MINSA to implement specialized training courses, create a Technical Institute for Health, and promote personal development among healthcare workers. Specifically, action 2.3.2 instructs MINSA to ensure healthcare education includes both technical and interpersonal skills. Action 2.3.2.1 sets a goal to maintain and increase enrolment in healthcare education. Action 2.3.2.3 deals with strengthening professors' abilities to improve educational quality in the healthcare sector. Action 3.1.1.2 tasks MINSA with constantly reviewing the human (and other) resources available in the sector versus those required. [1] In January 2020, MINSA announced its "Plan 2020", which outlined its priorities for the year. The plan itself is not publicly available online, but the minister of health's description of it outlines some actions to develop the public health workforce. [3, 4] According to MINSA one "axis" of the plan is "training for specialists and workers at healthcare facilities in the country". Specifically, MINSA planned to train 150 specialist doctors in 14 specialties, such as cardiology, advanced endoscopy, nursing and intensive care, during the year. [4] In 2012, MINSA estimated that Nicaragua had 85% progress toward achieving self-sufficiency in healthcare human resources. [5]

[1] Ministry of Health (Ministerio de Salud). 2015. "Multi-year Health Plan 2015-2021" ("Plan Plurianual de Salud 2015-2021"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Divisi%C3%B3n-General-Planificaci%C3%B3n-y-Desarrollo/Planes-Institucionales/Plan-Plurianual/Plan-Plurianual-de-Salud-2015-2021/]. Accessed 27 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2010. "Manual No. 4 Procedures for Developing Human Resources". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Divisi%C3%B3n-General-de-Recursos-Humanos/Recursos-de-Informaci%C3%B3n/Manueles-de-Procedimientos/Manual-No.4-Prodecimientos-de-Desarrollo-RRHH/]. Accessed 27 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Get to know the Ministry of Health's work plan for 2020". [http://www.minsa.gob.ni/index.php/110-noticias-2020/4941-conozca-el-plan-de-trabajo-del-ministerio-de-salud-para-el-2020]. Accessed 27 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2012. "Measurement of the Regional Goals for Healthcare Human Resources 2011-2015 in Nicaragua" ("MEDICIÓN DE LAS METAS REGIONALES DE RECURSOS HUMANOS PARA LA SALUD 2011-2015 EN NICARAGUA"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Divisi%C3%B3n-General-de-Recursos-Humanos/Metas-y-Desaf%C3%ADos/MMedici%C3%B3n-de-la-Metas-Regionales-de-Recursos-Humanos-para-la-Salud-2011--

-2015/]. Accessed 27 August 2020.

4.1.2 Facilities capacity

4.1.2a

Hospital beds per 100,000 people

Input number

Current Year Score: 93

2017

WHO/World Bank; national sources

4.1.2b

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

Yes = 1 , No = 0

Current Year Score: 1

In Nicaragua, the country has 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. In 2014, the Ministry of Health (MINSA) stated that it could isolated patients in special tent hospital. This facility does not appear to be a permanent installation. MINSA announced that a facility the government called the “Separated Hospital” with biocontainment and isolation characteristics was ready to treat any patients potentially infected with Ebola. MINSA provided very limited information regarding the installation, but it appears to be a special tent hospital with biocontainment features that could be deployed if necessary. [1] One contemporary news report noted that it was not known where the unit would be established if needed. [2] In terms of the COVID-19 pandemic a March 2020 article from local news website Confidencial, stated that "some public hospitals have already defined isolation areas for persons with symptoms of COVID-19". Neither the article nor MINSA's website contain additional details on any patient isolation units for responding to the pandemic. [3, 4] The private Vivian Pellas Hospital has patient isolation units with a negative pressure air handling system and filtering to isolate infectious patients and prevent the spread of pathogens. [5] The website of the Dr. Alejandro Dávila Bolaños Military Teaching Hospital does not provide any public information regarding patient isolation or biocontainment units. [6]

[1] Ministry of Health (Ministerio de Salud). 2014. "Conclusion of Ebola Training Course Delivered by Cuban Specialists" (“CONCLUYE CAPACITACION SOBRE EL EBOLA IMPARTIDA POR ESPECIALISTAS CUBANOS”). [http://www.minsa.gob.ni/index.php/103-noticias-2014/1391-concluye-capacitacion-sobre-el-ebola-impartida-por-especialistas-cubanos]. Accessed 27 August 2020.
[2] La Jornada. 2017. "Separated hospital announced for Ebola" (“Anuncian un Hospital separado para el ébola”). [https://www.lajornadanet.com/diario/archivo/2014/noviembre/17/1.php]. Accessed 27 August 2020.
[3] Confidencial. 2020. "State silence weakens prevention of coronavirus". [https://confidencial.com.ni/silencio-del-gobierno-debilita-prevencion-ante-coronavirus-en-nicaragua/]. Accessed 10 September 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Hospital Vivian Pellas. 2020. "Intensive Care Unit". [https://www.hospitalvivianpellas.com/unidad-de-cuidados-intensivos/]. Accessed 27 August 2020.
[6] Dr. Alejandro Dávila Bolaños Military Teaching Hospital. 2018. "Inicio". [https://www.hospitalmilitar.com.ni/]. Accessed 27

August 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 public evidence that Nicaragua 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 in response to an infectious disease outbreak. Publicly available information regarding public health emergency planning is limited in Nicaragua, and there is insufficient public evidence that Nicaragua has an overarching national public health emergency response plan in place. [1] The websites of the Ministry of Health and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding if Nicaragua 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 in response to an infectious disease outbreak. [1, 2]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.

4.2 SUPPLY CHAIN FOR HEALTH SYSTEM AND HEALTHCARE WORKERS

4.2.1 Routine health care and laboratory system supply

4.2.1a

Is there a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies (e.g. equipment, reagents and media) and medical supplies (e.g. equipment, PPE) for routine needs?
Yes for both laboratory and medical supply needs = 2, Yes, but only for one = 1, No = 0

Current Year Score: 2

Nicaragua has a national procurement protocol in place which can be utilized by the Ministries of Health and Agriculture for the acquisition of laboratory supplies (such as equipment, reagents and media) and medical supplies (equipment, PPE) for routine needs. Law No. 737 of 2010 governs public sector procurement, including the Ministries of Health and Agriculture (Article 3). Accepted procurement procedures defined in Chapter IV of the law include public tender, simplified contract, minor contracts and bids for selection of consultants. [1] Public procurement processes and information are centralized at the Nicaragua Compra web portal. [2] The portal contains evidence of Ministry of Health tenders and purchases of medicines, medical equipment, PPE, and laboratory supplies during 2020. [3, 4, 5, 6] In terms of agriculture, the portal contains evidence of Institute for Agricultural Protection and Health (IPSA) tenders and purchases of laboratory supplies and PPE during 2020.

[7, 8]

[1] President of the Republic of Nicaragua. 2010. "Law for Administrative Procurement in the Public Sector Law No. 737" ("LEY DE CONTRATACIONES ADMINISTRATIVAS DEL SECTOR PÚBLICO LEY No. 737".) [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/E57F2E97BBA45487062577F900762C46?OpenDocument]. Accessed 27 August 2020.
[2] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Nicaragua Compra". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal]. Accessed 27 August 2020.
[3] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 133/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 2020.
[4] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 19072020/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 2020.
[5] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 103250820/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 2020.
[6] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 260820/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 2020.
[7] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 61/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 2020.
[8] General Directorate of State Procurement (Dirección General de Contrataciones del Estado). 2020. "Minor Procurement No. 59/2020". [http://www.gestion.nicaraguacompra.gob.ni/siscae/portal/adquisiciones-gestion/busquedaProcedimientosVigentes/__rp0x3adquisiciones-gestion-portlet0x2busquedaProcedimientosVigentesPortlet_org.apache.myfaces.portlet.MyFacesGenericPortlet.VIEW_ID/0x3fragments0x3busqueda0x3datos0x3datosProcedimientoPublicoView0x2jsp?]. Accessed 27 August 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: 0

There is insufficient publicly available evidence that Nicaragua maintains a stockpile of medical supplies (e.g. MCMs, medicines, vaccines, medical equipment, PPE) for national use during a public health emergency. In 2019, following protests and social unrest in the country, the Army of Nicaragua stated publicly that it had acted to safeguard some 200 "strategic targets", including "reserves" of medicines and vaccines. The Army's statements did not provide any further detail regarding the existence, status or contents of these reserves. [1, 2, 3] In April 2020, the President of Nicaragua stated that the risk to the country from the COVID-19 pandemic was low due to several factors, including the "sufficient reserve of medicines". He further stated that "practically 90% of state hospitals are equipped with all the basic resources to provide care". As publicly reported, the President's comments did not provide any further detail regarding the existence, status or contents of these reserves. [4] The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua, and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding a stockpile of medical supplies for national use during a public health emergency. [5, 6, 7, 8] Nicaragua's drug regulatory agency is part of the Ministry of Health. [9]

[1] EFE Agencia. 2019. "The Army of Nicaragua denounces a brutal campaign against it in the middle of the crisis". [https://www.efe.com/efe/america/sociedad/el-ejercito-de-nicaragua-denuncia-una-campana-brutal-en-su-contra-medio-la-crisis/20000013-4030017]. Accessed 27 August 2020.
[2] Army of Nicaragua (Ejército de Nicaragua). 2019. "39th Anniversary of the Constitution of the Army of Nicaragua". [https://ejercito.mil.ni/contenido/relaciones-publicas/publicaciones/docs/sup-xxxix-aniv-metro.pdf]. Accessed 27 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2019. "39th Anniversary of the Constitution of the Army of Nicaragua". [https://www.ejercito.mil.ni/contenido/relaciones-publicas/publicaciones/docs/revista-ejercito-ee-39-aniversario.pdf]. Accessed 27 August 2020.
[4] BBC. 2020. "President Daniel Ortega reappears in public in Nicaragua after 34 days of absence and defends his questioned strategy to face the pandemic". [https://www.bbc.com/mundo/noticias-america-latina-52304009]. Accessed 27 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Governance (Ministerio de Gobernacion). 2020. "MIGOB". [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[7] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[9] Ministry of Health (Ministerio de Salud). 2020. "Directorate of Health Regulation". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/noticias-2017]. Accessed 27 August 2020.

4.2.2b

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

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

Current Year Score: 0

There is no publicly available evidence that Nicaragua maintains a stockpile of laboratory supplies (e.g. reagents, media) for national use during a public health emergency. The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua, and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional

information regarding a stockpile of laboratory supplies for national use during a public health emergency. [1, 2, 3, 4] Nicaragua's drug regulatory agency is part of the Ministry of Health. [5]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Governance (Ministerio de Gobernacion). 2020. "MIGOB". [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[4] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Directorate of Health Regulation". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/noticias-2017]. Accessed 27 August 2020.

4.2.2c

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

Yes = 1, No = 0

Current Year Score: 0

There is no public evidence that the government of Nicaragua conducts or requires an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. There is insufficient public evidence that Nicaragua has a stockpile of medical and laboratory supplies. Public statements from the government in 2019 and 2020 pointed to the existence of some reserves of medical supplies, but there is no public evidence regarding their extent or contents or an annual review of them. [1, 2, 3, 4] The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua, and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding an annual review of the national stockpile to ensure the supply is sufficient for a public health emergency. [5, 6, 7, 8] Nicaragua's drug regulatory agency is part of the Ministry of Health. [9]

[1] EFE Agencia. 2019. "The Army of Nicaragua denounces a brutal campaign against it in the middle of the crisis". [https://www.efe.com/efe/america/sociedad/el-ejercito-de-nicaragua-denuncia-una-campana-brutal-en-su-contra-medio-la-crisis/20000013-4030017]. Accessed 27 August 2020.
[2] Army of Nicaragua (Ejército de Nicaragua). 2019. "39th Anniversary of the Constitution of the Army of Nicaragua". [https://ejercito.mil.ni/contenido/relaciones-publicas/publicaciones/docs/sup-xxxix-aniv-metro.pdf]. Accessed 27 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2019. "39th Anniversary of the Constitution of the Army of Nicaragua". [https://www.ejercito.mil.ni/contenido/relaciones-publicas/publicaciones/docs/revista-ejercito-ee-39-aniversario.pdf]. Accessed 27 August 2020.
[4] BBC. 2020. "President Daniel Ortega reappears in public in Nicaragua after 34 days of absence and defends his questioned strategy to face the pandemic". [https://www.bbc.com/mundo/noticias-america-latina-52304009]. Accessed 27 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Governance (Ministerio de Gobernacion). 2020. "MIGOB". [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[7] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y

Atención de Desastres). 2020. “SINAPRED”. [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[9] Ministry of Health (Ministerio de Salud). 2020. “Directorate of Health Regulation”. [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/noticias-2017]. Accessed 27 August 2020.

4.2.3 Manufacturing and procurement for emergencies

4.2.3a

Does the country meet one of the following criteria?
- Is there evidence of a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?
- Is there evidence of a plan/mechanism to procure medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) for national use during a public health emergency?
Needs to meet at least one of the criteria to be scored a 1 on this measure., Yes for both = 1, Yes for one = 1, No for both = 0

Current Year Score: 0

There is insufficient publicly available evidence that Nicaragua has a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies (e.g. MCMs, medicines, vaccines, equipment, PPE) or a plan/mechanism to procure medical supplies for national use during a public health emergency. In August 2020, the government submitted a loan contract from the Inter-American Development Bank to the National Assembly for approval. There is no indication that the contract had been approved at the time of this research in August 2020. [1] The contract included several subcomponents (1.2, 2.2 and 3.1) for funding emergency purchases of medical supplies and PPE. However, the contract did not contain a plan for procuring these supplies. [1] In terms of PPE, the regulations for the General Health Law (Decree 001-2003) state that public or private institutions must provide PPE for workers that deal with “toxic, dangerous and other similar substances” (Article 257). Further, Article 261 tasks the Ministry of Labor with coordinating with the Ministry of Health (MINSA) in this area. [2] The 2007 National Response Plan for the Risk of Pandemic Flu and Avian Flu states that the government should prioritize the purchase of PPE in the event of an outbreak, but does not provide any more concrete plans. [3] In 2009, during the Ebola outbreak in West Africa, MINSA reported that it had 100 PPE kits available for health workers, with another 5,000 on order. [4] A 2015 academic study of 81 health workers in the country found that they reported “little availability of personal protection materials”. [5] The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) tasks the Ministry of Health (MINSA) with “guaranteeing the permanent existence of a stockpile of essential medicines, for primary use in caring for the populations affected by disasters”. [6] However, there is no public evidence of implementation of this requirement. [7, 8] From 2006-2016, Nicaragua received international assistance to upgrade its medical supply storage and distribution capability, including a new central warehouse for MINSA. [9] The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua, and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding has a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies or a plan/mechanism to procure medical supplies for national use during a public health emergency. [10, 11, 12, 13] Nicaragua’s drug regulatory agency is part of the Ministry of Health. [14]

[1] Government of National Reconciliation and Unity. 2020. “SPPN-E-20-307”. [http://legislacion.asamblea.gob.ni/SILEG/Iniciativas.nsf/7F4EDBFB09CE4D79062585C400753C4D/%24File/Iniciativa%20DL%20aprobaci%C3%B3n%20de%20Contrato%20de%20Pr%C3%A9stamo%20No.%205088%20B%20NI%20BID.pdf?Open]. Accessed 27 August 2020.
[2] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" (“REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003”).

[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[3] National System of Disaster Prevention, Mitigation and Attention (SINAPRED). 2007. “National Response Plan for the Risk of Pandemic Influenza and Avian Influenza”. [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2009. "Nicaragua Prepared in the face of WHO International Ebola Alert" (“NICARAGUA PREPARADA ANTE ALERTA INTERNACIONAL DE OMS POR EBOLA”). [http://www.minsa.gob.ni/index.php/component/content/article/103-noticias-2014/1113-nicaragua-preparada-ante-alerta-internacional-de-oms-por-ebola]. Accessed 27 August 2020.
[5] Perez Alarcon, Inés Vanessa. 2016. "Knowledge and Application of Biosafety Measures among health workers, associated with the prevention of occupational accidents, Primary Hospital Carlos Fonseca Amador, in the municipality of Mulukuku, November-December, 2015" (“Conocimiento y Aplicación de las Medidas de Bioseguridad en trabajadores de la salud, asociados a la prevención de accidentes ocupacionales , Hospital Primario Carlos Fonseca Amador, en el municipio de Mulukukú, Noviembre –Diciembre, 2015”). [http://repositorio.unan.edu.ni/2510/1/75807.pdf]. Accessed 19 August 2020.
[6] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" (“PLAN NACIONAL DE RESPUESTA DEL SINAPRED”). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. “SINAPRED”. [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[9] United States Agency for International Development (USAID). 2016. “DELIVER PROJECT Final Country Report”. [http://deliver.jsi.com/wp-content/uploads/2017/01/FinaCounRepo_NI.pdf]. Accessed 27 August 2020.
[10] Ministry of Governance (Ministerio de Gobernacion). 2020. “MIGOB”. [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[11] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" (“Ejercito de Nicaragua”). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[12] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. “SINAPRED”. [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[13] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[14] Ministry of Health (Ministerio de Salud). 2020. “Directorate of Health Regulation”. [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/noticias-2017]. Accessed 27 August 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 publicly available evidence that Nicaragua has a plan/agreement to leverage domestic manufacturing capacity to produce laboratory supplies (e.g. reagents, media) or a plan/mechanism to procure laboratory supplies for national use during a public health emergency. The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua,

and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional information regarding has a plan/agreement to leverage domestic manufacturing capacity to produce medical supplies or a plan/mechanism to procure medical supplies for national use during a public health emergency. [1, 2, 3, 4] Nicaragua's drug regulatory agency is part of the Ministry of Health. [5]

[1] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[2] Ministry of Governance (Ministerio de Gobernacion). 2020. "MIGOB". [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[3] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[4] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Directorate of Health Regulation". [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Direcci%C3%B3n-de-Farmacia/noticias-2017]. Accessed 27 August 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

In Nicaragua, there is a program for receiving and distributing emergency supplies for national use during a public health emergency; however, there is insufficient public evidence that the program also accounts for dispensing of medical countermeasures. The Ministry of Health (MINSA), the National System of Disaster Prevention, Mitigation and Attention (SINAPRED), the National Technological Institute and the Ministry of Environment and Natural Resources use the Logistics Support System (LSS) to manage warehousing and logistics for emergency supplies during disasters and emergencies. [1] Nicaragua employed the LSS system in 2007 to distribute medical and humanitarian supplies from at least six warehouses in response to Hurricane Felix. [1, 2] Nicaraguan ministries, including MINSA, have participated in trainings with the Pan American Health Organization to improve use of LSS during emergencies like the A/H1N1 flu crisis in Mexico. However, there is insufficient evidence showing plans for how these supplies are then dispensed to individual recipients. [3, 4] The websites of the Ministry of Health, the Ministry of Governance, Army of Nicaragua, and National System of Disaster Prevention, Mitigation and Attention (SINAPRED) do not contain additional public information regarding a program for dispensing medical countermeasures for national use during a public health emergency. [5, 6, 7, 8]

[1] Logistics Cluster. 2007. "Hurricane Felix 2007". [https://logcluster.org/document/lss-suma-nicaragua]. Accessed 27 August 2020.
[2] Pan American Health Organization. 2010. "Operation of LSS SUMA in Nicaragua". [https://www.paho.org/nic/index.php?option=com_docman&view=download&alias=275-operacion-de-lss-suma-en-nicaragua-apoyo-a-la-respuesta-por-el-huracan-felix&category_slug=publicaciones-anteriores&Itemid=235]. Accessed 27 August 2020.

[3] Pan American Health Organization. 2018. "PAHO carries out international workshop on Logistics Platforma and SUMA" ("OPS realiza taller internacional de Plataforma Logística y SUMA"). [https://www.paho.org/dor/index.php?option=com_content&view=article&id=921:ops-realiza-taller-internacional-plataforma-logistica-suma&Itemid=214]. Accessed 27 August 2020.
[4] Relief Web. 2011. "Training begins for comprehensive humanitarian supply management system". [https://reliefweb.int/report/nicaragua/inicia-capacitaci%C3%B3n-de-sistema-de-manejo-integral-de-suministros-humanitarios-lss-%E2%80%93]. Accessed 27 August 2020.
[5] Ministry of Governance (Ministerio de Gobernacion). 2020. "MIGOB". [https://www.migob.gob.ni/]. Accessed 27 August 2020.
[6] Army of Nicaragua (Ejército de Nicaragua). 2020. "Army of Nicaragua" ("Ejercito de Nicaragua"). [https://www.ejercito.mil.ni/]. Accessed 19 August 2020.
[7] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[8] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.

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

4.3.2a

Is there a public plan in place to receive health personnel from other countries to respond to a public health emergency?
Yes = 1 , No = 0

Current Year Score: 1

Nicaragua has a plan to receive health personnel from other countries to respond to a public health emergency, and it is contained in national disaster planning and health regulations. The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) tasks the Ministry of Health (MINSA) with "guaranteeing and coordinating the participation and support of private healthcare professionals in the event of disasters, as well as international cooperation specialized in health care and required for that end". [1] The Regulations for the General Health Law (Decree 001-2003), in Article 26 state that local health districts (SILAIS) are tasked with "authorizing the provision of services by foreign providers". [2] In addition, Articles 81-83 of the Regulations outline the process for foreign healthcare personnel to coordinate with the SILAIS in order to provide services. [2] MINSA's Regulation-069 provides further details, establishing a system to authorize and receive foreign healthcare workers as well as medical donations, but it does not specifically mention public health emergencies. The regulations require basic documentation and task the National Registry of Healthcare Professionals and Technicians with providing temporary authorization for foreign healthcare workers. [3] In June 2020, Presidential Decree No. 13-2020 authorized the "entry to the national territory of military personnel, ships, airplanes and medical teams from countries that cooperate with Nicaragua, for humanitarian purposes and attending to the health emergency, in support of the Government of the Republic of Nicaragua, from July 1st to December 31, 2020. [4]

[1] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED"). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[2] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" ("REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003"). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2011. "Regulation - 069 'Regulation for donations of medical and non-medical

supplies and foreign medical brigades'" ("Normativa - 069 'Norma de regulación para las donaciones de insumos médicos, no médicos y brigadas médicas extranjeras'"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2011/Normativa---069-Norma-de-regulaci%C3%B3n-para-las-donaciones-de-insumos-m%C3%A9dicos-no-m%C3%A9dicos-y-brigadas-m%C3%A9dicas-extranjeras/]. Accessed 27 August 2020.
[4] President of the Republic of Nicaragua. 2020. "Presidential Decree No. 13-2020". [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/8E6E3E441ECA06BA06258583007113 21?OpenDocument]. Accessed 27 August 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: 88

2012

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: 165.0

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

In Nicaragua, there is no publicly available evidence that the government has issued legislation, a policy or a public statement committing to provide prioritized health care services to healthcare workers who become sick as a result of responding to a public health emergency. The General Health Law (Law No. 423 of 2002) does not prioritize health care services for healthcare workers. The only population the law mentions prioritizing is care for mothers and children (Article 8). [1] The regulations for the General Health Law (Decree 001-2003) do not prioritize healthcare workers, instead mentioning prioritized care for mothers and children, the elderly and the disabled. [2] The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) does not discuss prioritizing care for healthcare workers. The plan prioritizes first response activities: search and rescue and providing healthcare, shelter and supplies. [3] In terms of public health emergency plans, the 2007 National Response Plan for the Risk of Pandemic Flu and Avian Flu does not discuss prioritized care for healthcare workers, although it does mention prioritizing purchases of personal protection equipment. [4] In April 2020 a medical workers association in Nicaragua urged the government to provide healthcare workers with more protection as a result of the COVID-19 pandemic. One news media report cited anonymous complaints that government authorities were prohibiting healthcare workers from wearing masks in hospitals in order to avoid creating a panic among the public. [5] The website of the Ministry of Health does not provide additional information regarding prioritized healthcare services for healthcare workers who become sick as a result of responding to a public health emergency. [6]

[1] President of the Republic of Nicaragua. 2002. "General Health Law Law No. 423" (“LEY GENERAL DE SALUD LEY No. 423”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/FF82EA58EC7C712E062570A1005810E1?OpenDocument]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 2003. "Regulations for the General Health Law Decree No. 001-2003" (“REGLAMENTO DE LA LEY GENERAL DE SALUD DECRETO No. 001-2003”). [http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/0F963CAE75EBD5DC0625715A005C0DC9]. Accessed 19 August 2020.
[3] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" (“PLAN NACIONAL DE RESPUESTA DEL SINAPRED”). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[4] National System of Disaster Prevention, Mitigation and Attention (SINAPRED). 2007. “National Response Plan for the Risk

of Pandemic Influenza and Avian Influenza".
[https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[5] Agencia EFE. 2020. "Medical association in Nicaragua calls for protective measures facing COVID-19". [https://www.msn.com/es-us/noticias/otras/gremio-m%C3%A9dico-de-nicaragua-urge-medidas-de-protecci%C3%B3n-ante-covid-19/ar-BB136wcv]. Accessed 27 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 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, in Nicaragua, the Ministry of Health (MINSA) has a system in place for public health officials and healthcare workers to communicate during a public health emergency.

MINSA Regulation-019 created the ministry's Emergency Operations Centre (COE) in 2009. The COE's principal functions are "to maintain permanent communication and information exchange with Health Authorities" and "to maintain permanent communication between the COE-MINSA Committee and the Institutions and Organizations throughout the country" to coordinate the response to a public health emergency. The COE has a communications division tasked with maintaining communication with public health workers via radio communication, telephone, fax and internet. The division also manages communications with the National System of Disaster Prevention, Mitigation and Attention and its Disaster Operations Centre (CODE). [1]

[1] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 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

In Nicaragua, there is no public evidence that the Ministry of Health's (MINSA) emergency communications system encompasses healthcare workers in both the public and private sector. MINSA Regulation-019 created the ministry's Emergency Operations Centre (COE) in 2009. The COE's principal functions are "to maintain permanent communication and information exchange with Health Authorities" and "to maintain permanent communication between the COE-MINSA Committee and the Institutions and Organizations throughout the country". Regulation-019 does not mention private sector healthcare workers or coordination with them in the event of a public health emergency. [1] The National Response Plan for the National System of Disaster Prevention, Mitigation and Attention (SINAPRED) does not mention an emergency communications system for public health authorities to communicate with public and private sector healthcare workers. The plan calls on government ministries to generally reduce their risk by establishing alternative communications mechanisms in the event of an emergency. [2] The 2007 National Response Plan for the Risk of Pandemic Flu and Avian Flu does not discuss an emergency communications system for public health authorities to communicate with public and private sector healthcare workers. [3] The websites of MINSA and SINAPRED do not contain additional public information regarding an emergency communications system that encompasses healthcare workers in both the public and private sector. [4, 5]

[1] Ministry of Health (Ministerio de Salud). 2009. "Regulation - 019 Regulations for the Operation of MINSA's Emergency Operations Centre (EOC), in the context of a National Health Emergency" ("Normativa - 019 NORMAS PARA EL FUNCIONAMIENTO DEL CENTRO DE OPERACIONES DE EMERGENCIAS (COE) DEL MINSA, EN EL CONTEXTO DE LA EMERGENCIA SANITARIA NACIONAL"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2009/Normativa---019-Normas-para-el-funcionamiento-del-centro-de-operaciones-de-emergencias-(COE)-del--MINSA-en-el-contexto-de-la-emergencia-sanitaria-nacional/]. Accessed 20 August 2020.
[2] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED"). [https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[3] National System of Disaster Prevention, Mitigation and Attention (SINAPRED). 2007. "National Response Plan for the Risk of Pandemic Influenza and Avian Influenza". [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 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

In Nicaragua, Ministry of Health (MINSA) regulations mandate that the national public health system monitor and track the number of health care associated infections (HCAI) that take place in healthcare facilities. MINSA Regulation 135 establishes the country's system to prevent, monitor and control HCAI. The regulation requires all healthcare facilities to implement an

HCAI Prevention and Control Program that includes an HCAI surveillance system. The regulation mandates that a nurse at each facility be placed in charge of surveillance activities for all HCAI. Surveillance must be integrated with the overall epidemiological surveillance system and information must be shared throughout MINSA in order to facilitate decision-making. [1] Since 2000, Nicaragua has participated in the Latin American Network of Surveillance of Antimicrobial Resistance, which includes surveillance of seven HCAI pathogens: Enterococcus spp., Klebsiella pneumoniae, Pseudomonas aeruginos a, Staphylococcus aureus, Escherichia coli, Enterobacter spp. and Acinetobacter spp. [2] In 2018, a journal article on a study of HCAI at a regional hospital in Jinotepe, Nicaragua stated that the HCAI rate during the study period was lower than the world average, and that 75% of those infected were women. [3] A 2017 study at the same hospital, published in 2019, noted that there was a lack of knowledge of HCAI among the 345 staff surveyed and that a training program was needed to reduce the rate of HCAI at the hospital. [4] In 2017, the Army of Nicaragua hosted the 2nd Symposium for the Prevention of HCAI in Critical Areas, with participants from the public and private healthcare systems. [5]

[1] Ministry of Health (Ministerio de Salud). 2015. "Regulation 135- Regulation to guarantee the prevention, surveillance and control of health care associated infections" ("Normativa 135- Norma para la garantía de la prevención, vigilancia y control de infecciones Asociadas a la atención de salud"). [http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Normas-Protocolos-y-Manuales/Normas-2015/Normativa-135--%E2%80%9CNorma-para-la-garant%C3%ADa-de-la-prevenci%C3%B3n-vigilancia-y-control-de-infecciones-Asociadas-a-la-atenci%C3%B3n-de-salud%E2%80%9D/]. Accessed 27 August 2020.
[2] Technical Commission for Health Surveillance and Information Systems of Central America and the Dominican Republic (COMISIÓN TÉCNICA DE VIGILANCIA EN SALUD Y SISTEMAS DE INFORMACIÓN DE CENTROAMERICA Y REPÚBLICA DOMINICANA). 2012. "Health Care Associated Infections" ("Infecciones Asociadas a la Atencion en Salud"). [http://comisca.net/sites/default/files/6Infecciones%20asociadas%20a%20la%20atencion%20en%20salud%2006-2012.pdf]. Accessed 27 August 2020.
[3] Hernández Faure, Carlos, Sánchez Fernández, Gustavo, Reyes Matos, Idania, Gutiérrez Sanchez, Iván, & Heredia Conde, Gretell. 2018. "Infecciones asociadas a la atención en salud del Hospital Santiago de Jinotepe, Nicaragua". [http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1028-99332018000400755&lng=es&nrm=iso&tlng=es]. Accessed 27 August 2020.
[4] Hernández FC, González TA, González RI, et al. 2019. "Conocimientos, actitudes y prácticas relacionadas con las infecciones intrahospitalarias en Nicaragua". [https://www.medigraphic.com/cgi-bin/new/resumen.cgi?IDARTICULO=86224]. Accessed 27 August 2020.
[5] Army of Nicaragua. 2017. "Symposium on intra-hospital infections". [https://www.hospitalmilitar.com.ni/simposio-infecciones-intrahospitalarias/]. Accessed 27 August 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

Nicaragua has a national requirement for ethical review before beginning a clinical trial. Decree No. 6-99 provides the regulations for the Medicines and Pharmacies Law (Law No. 292 of 1998). Article 28 states that all clinical trials must be reviewed by a Clinical Research Ethics Committee that has been accredited by the Ministry of Health (MINSA). The Clinical Research Ethics Committee must be made up of a multi-disciplinary group of professionals, including doctors, pharmacists, nurses and a legal expert. [1] The committee is tasked with reviewing the "methodological and ethical aspects of the proposed clinical trial Protocol, as well as the evaluation of the risk and benefit derived from the trial". [1] According to an academic study in 2008, there were two university-based bioethics committees operating in Nicaragua, as well as an "ad hoc committee" created by MINSA's Directorate of Health Regulation, which functions as the medical countermeasure regulator, and the Directorate of Teaching and Research. The latter committee was created to review research protocols from foreign institutions and pharmaceutical firms. [2]

[1] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" "(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 29 August 2020.
[2] Gonzálezy, Armando Ulloa, and Melba de la Cruz Barrantes Monge. 2008. "BIOETICA EN NICARAGUA". [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2845460/]. Accessed 29 August 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 publicly available evidence that Nicaragua has an expedited process for approving clinical trials for unregistered medical countermeasures to treat ongoing pandemics. Decree No. 6-99 provides the regulations for the Medicines and Pharmacies Law (Law No. 292 of 1998). Article 28 states that all clinical trials must be reviewed by a Clinical Research Ethics Committee that has been accredited by the Ministry of Health (MINSA). The regulations do not include any provisions for expedited clinical trials, under any circumstances. [1] Technical Regulation No. NTON 19 011-19, "Medicines for Human Use. Vaccines. Requirements for Sanitary Registration", was issued in October 2019 and covers the registration requirements for vaccines. The regulation describes requirements for presentation of results of clinical trials for registration but does not mention any provisions for an expedited process. [2] The websites of the Ministry of Health and the Nicaraguan Council of Science and Technology do not contain additional information regarding expedited clinical trials. [3, 4]

[1] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" "(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99"). [http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 29 August 2020.
[2] Ministry of Development, Industry and Commerce (Ministerio de Fomento, Industria y Comercio). 2019. "Technical Regulation No. NTON 19 011-19, Medicines for Human Use. Vaccines. Requirements for Sanitary Registration". [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/C0075D2792873AB0062570A100579971?OpenDocument]. Accessed 29 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[4] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. "conicyt.gob.ni". [http://conicyt.gob.ni/]. Accessed 19 August 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

In Nicaragua, there is a government agency responsible for approving new medical countermeasures (MCM) for humans. Article 4 of the Medicines and Pharmacies Law (Law No. 292 of 1998) states that the government shall create a National Commission for the Evaluation and Registration of pharmaceutical products. [1] Decree No. 6-99 provides the regulations for the Medicines and Pharmacies Law. Chapter II of the regulations outline the makeup and operations of the National Commission for the Evaluation and Registration of pharmaceutical products, which belongs to the Pharmacy Division of the General Directorate of Health Regulation (DGRS) of the Ministry of Health (MINSA). Article 6 states that the function of the Commission is to "pharmaceutically, pharmacologically and legally evaluate all pharmaceutical products to be sold in the country". [2] According to MINSA, since 2014, the DGRS is also responsible for approving medical devices. [3] According to the World Health Organization (WHO), the DGRS is the "national regulatory authority" in Nicaragua. [4]

[1] President of the Republic of Nicaragua. 1998. "Law for Medicines and Pharmacies Law No. 292" ("LEY DE MEDICAMENTOS Y FARMACIAS LEY No. 292").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/10B9BC0F73CCA7FD062570A10057793D?OpenDocument]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" "(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99").
[http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 29 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2018. "Medical Devices" ("Dispositivos Médicos").
[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Dispositivos-M%C3%A9dicos/orderby,6/]. Accessed 29 August 2020.
[4] World Health Organization (WHO). 2016. "Medical devices regulatory systems at country level".
[https://www.who.int/medical_devices/countries/regulations/nic.pdf?ua=1]. Accessed 29 August 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

In Nicaragua, there is insufficient public evidence of an expedited process for approving medical countermeasures for human use during public health emergencies, contained in the country's technical regulations for registration of pharmaceutical products. Article 4 of the Medicines and Pharmacies Law (Law No. 292 of 1998) states that the government will create a National Commission for the Evaluation and Registration of pharmaceutical products. [1] Decree No. 6-99 provides the regulations for the Medicines and Pharmacies Law. Chapter II of the regulations outline the makeup and operations of the National Commission for the Evaluation and Registration of pharmaceutical products, which belongs to the Pharmacy Division of the General Directorate of Health Regulation (DGRS) of the Ministry of Health (MINSA). Article 6 states that the function of the Commission is to "pharmaceutically, pharmacologically and legally evaluate all pharmaceutical products to be sold in the country". [2] In 2014, MINSA adopted Central American Technical Regulation RTCA 11. 03.59: 11 as Technical Regulation

NTON 19 008-11 “Pharmaceutical Products. Medicines for Human Use. Requirements for Sanitary Registration”. Section 13 of the regulations provide for “Exceptions to Sanitary Registration”, including article 13.2 “Officially declared national emergencies and public necessity”. Other exceptions include “donations”, “orphan medicines from State Parties”, “medicines used in clinical trials with approved protocols”, “cases of medical justification”, “samples for carrying out registration”, and “medicines purchased via the Pan American Health Organization’s revolving fund”. [3] The Medicines and Pharmacies Law does not mention any special provisions for approval during public health emergencies. [1] Decree No. 6-99 only mentions public health emergencies in the context of providing an exception for NGOs to receive donations of medical supplies without being in partnership with the public health system “in cases of disasters or national emergency” (Article 9). The decree does not mention any special provisions for pharmaceutical product approval during public health emergencies. [2] The Ministry of Health's General Directorate of Health Regulation (DGRS) has been responsible for approving medical devices since 2014. Its regulations do not contain any provisions for an expedited approval process. [4] The websites of the Ministry of Health and the Nicaraguan Council of Science and Technology do not contain additional information regarding an expedited process for approving medical countermeasures for human use during public health emergencies. [5, 6]

[1] President of the Republic of Nicaragua. 1998. "Law for Medicines and Pharmacies Law No. 292" ("LEY DE MEDICAMENTOS Y FARMACIAS LEY No. 292").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/10B9BC0F73CCA7FD062570A10057793D?OpenDocument]. Accessed 19 August 2020.
[2] President of the Republic of Nicaragua. 1999. "Regulations for Law No. 292, Medicines and Pharmacies Law Decree No. 6-99" “(REGLAMENTO DE LA LEY No.292, LEY DE MEDICAMENTOS Y FARMACIAS DECRETO No. 6–99”).
[http://legislacion.asamblea.gob.ni/normaweb.nsf/3133c0d121ea3897062568a1005e0f89/2bbd6963b51aaa7b062572130058f5d6?OpenDocument]. Accessed 29 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2018. "Medical Devices" ("Dispositivos Médicos").
[http://www.minsa.gob.ni/index.php/repository/Descargas-MINSA/Direcci%C3%B3n-General-de-Regulaci%C3%B3n-Sanitaria/Dispositivos-M%C3%A9dicos/orderby,6/]. Accessed 29 August 2020.
[4] National Assembly. 2014. “Technical Regulation NTON 19 008-11 Pharmaceutical Products. Medicines for Human Use. Requirements for Sanitary Registration”.
[http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/37E58C5BC73181AD06257D9C0054002B?OpenDocument]. Accessed 29 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 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

Nicaragua's National Risk Management Plan 2010-2015 does not integrate pandemics and there is not a standalone national disaster risk reduction strategy for pandemics. There is no public evidence of a more recent national risk reduction strategy. [1] The 2010-2015 Plan does not mention pandemics and mentions epidemics just once in the context of increased risk of epidemics during the flood season due to inadequate potable water and sanitation services in rural areas of the country. [2] Decree No. 98-2000, which assigns functions to individual ministries as part of the National System of Disaster Prevention, Mitigation and Attention's (SINAPRED) states that the Ministry of Health should carry out activities to prevent, control and follow up on epidemics. [3] Law No. 337 of 2000, which set up the SINAPRED, states that the Ministry of Health is responsible for declaring health emergencies in the country. [4] The SINAPRED's National Response Plan mentions pandemics twice, calling on the Ministry of Health and the Ministry of Agriculture to "establish special measures for the prevention, attention and control of potential transmissible diseases that could cause epidemics and/or pandemics". [5] The websites of the Ministry of Health and SINAPRED do not contain additional information regarding pandemics and national risk reduction strategies. [1, 6]

[1] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2020. "SINAPRED". [http://www.sinapred.gob.ni/]. Accessed 24 August 2020.
[2] Executive Secretariat of the National System of Disaster Prevention, Mitigation and Attention (SECRETARÍA EJECUTIVA SISTEMA NACIONAL PARA LA PREVENCIÓN, MITIGACIÓN Y ATENCIÓN DE DESASTRES. 2010. "National Risk Management Plan" ("Plan Nacional de Gestión del Riesgo").

[https://www.preventionweb.net/files/49652_49649sesinapredpngr20102015.pdf]. Accessed 29 August 2020.
[3] President of the Republic of Nicaragua. 2000. "Decree No. 98-2000 Regulations to Assign Functions of the National System of Disaster Prevention, Mitigation and Attention to State Institutions" ("DECRETO No. 98-2000 REGLAMENTO DE ASIGNACION DE FUNCIONES DEL SISTEMA NACIONAL PARA LA PREVENCION, MITIGACION Y ATENCION DE DESASTRES A LAS INSTITUCIONES DEL ESTADO"). [http://www.ifrc.org/Docs/idrl/110ES.pdf]. Accessed 29 August 2020.
[4] President of the Republic of Nicaragua. 2000. "Law to Create the National System of Disaster Prevention, Mitigation and Attention Law No. 337" ("LEY CREADORA DEL SISTEMA NACIONAL PARA LA PREVENCION, MITIGACION Y ATENCION DE DESASTRES LEY No. 337").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/297E6E70F4940832062572020059E4CD?OpenDocument]. Accessed 20 August 2020.
[5] National System of Disaster Prevention, Mitigation and Attention (Sistema Nacional para la Prevención, Mitigación y Atención de Desastres). 2008. "SINAPRED National Response Plan" ("PLAN NACIONAL DE RESPUESTA DEL SINAPRED").
[https://www.preventionweb.net/files/15491_planacionalresp.pdf]. Accessed 24 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 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

Nicaragua has cross-border agreements as part of a regional group with regards to public health emergencies. Nicaragua participates in the Technical Commission for Risk Management in Health (CTEGERS), which is part of the System of Central American Integration (SICA). SICA members include Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, and Dominican Republic. CTEGERS exists to coordinate efforts among Central American public health authorities to strengthen their response to disaster and public health emergencies. It is supported by the regional health agenda put forth by the Council of Health Ministers of Central America (COMISCA). [1] Nicaragua also participates in the SICA-organized Regional Mechanism for Mutual Assistance during Disasters (MecReg). The SICA member countries listed above are also members of MecReg. MecReg's goal is to "coordinate international humanitarian help and assistance within the framework of the System of Central American Integration". Specific actions promoted by MecReg related to public health emergencies include the creation of fast response health teams that participating countries can deploy to assist other countries, the creation of a regional list of medical supplies required based on the type of emergency or disaster and the operation of specialized groups to evaluate health problems and needs in emergencies. [2] Additionally, since July 2017, MecReg member countries adopted expedited procedures to ship humanitarian aid across their borders. [3] In terms of implementation, in March 2020 Nicaraguan and Costa Rican authorities met as part of SICA's efforts to support coordination of the response to the COVID-19 pandemic among Central American partners. The countries agreed to cooperate on health checks at border crossings and to share information related to the pandemic between their ministries of health. [4]

[1] COMISCA Executive Secretariat (Secretaria Ejecutiva COMISCA). 2018. "Technical Commission for Risk Management in Health" ("Comisión Técnica para la Gestión del Riesgo en Salud (CTEGERS)").
[https://www.sica.int/consulta/documentos.aspx?ident=1488&IdCat=&IdMod=3&IdEntStyle=143]. Accessed 29 August 2020.

[2] System of Central American Integration (Sistema de la Integración Centroamericana). 2012. "Manual for the Coordination of International Help and Assistance for the System of Central American Integration, SICA" ("MANUAL PARA LA COORDINACIÓN DE LA AYUDA Y ASISTENCIA HUMANITARIA INTERNACIONAL DEL SISTEMA DE LA INTEGRACIÓN CENTROAMERICANA, SICA". [https://www.ifrc.org/docs/IDRL/Mec%20Reg%20SICA%202012.pdf]. Accessed 29 August 2020.
[3] ReliefWeb. 2017. "Central America Adopts New Procedure for the Transit of Humanitarian Relief Items". [https://reliefweb.int/report/nicaragua/central-america-adopts-new-procedure-transit-humanitarian-relief-items]. Accessed 29 August 2020.
[4] System of Central American Integration (Sistema de la Integración Centroamericana). 2020. "Costa Rica and Nicaragua reinforce actions at border crossings to face coronavirus". [https://www.sica.int/consulta/Noticia.aspx?Idn=121479&idm=1]. Accessed 29 August 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: 0

There is insufficient evidence that Nicaragua has cross-border agreements as part of a regional group with regards to animal health emergencies.

Nicaragua is a member of the Regional International Organization for Agricultural Health (OIRSA). Mexico, Guatemala, Belize, El Salvador, Honduras, Costa Rica, Panama and the Dominican Republic are also members of OIRSA. [1] OIRSA's objective is to "support the efforts of the member States to achieve the development of their animal and plant health plans and the strengthening of their quarantine systems". One of OIRSA's specific activities is to "promote the adoption of common Animal Health policies" among member countries. [2] OIRSA implements the Regional Cross-Border Illness Program, which supports member countries in the eradication of threats to animal health. In addition, the program is developing regional Good Emergency Management Practice manuals and a cross-border protocol for sales of livestock. [3] In Nicaragua, OIRSA has supported the country to prevent and control brucellosis, bovine tuberculosis, poultry diseases and other livestock diseases via disease-specific support programs as well as activities such as strengthening quarantine inspections and improving checkpoints and providing quality training for the country's veterinary laboratory services. [4] OIRSA has also supported Nicaragua by financing testing supplies to detect prohibited proteins in livestock feed and strengthening the country's national epidemiological surveillance program for bovine paralytic rabies. [5] In terms of implementation, in March 2020, Nicaraguan authorities received training to improve quarantine treatment practices for animals from OIRSA. [6] However, there is no evidence the membership in OIRSA includes agreements to with other countries in the region to aid in response to animal public health emergencies.

[1] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria). 2018. "Representaciones". [https://www.oirsa.org/informacion.aspx?id=16]. Accessed 29 August 2020.
[2] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria). 2018. "Objetivo del OIRSA". [https://www.oirsa.org/informacion.aspx?id=8]. Accessed 29 August 2020.
[3] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria). 2018. "Regional Program for Cross-border Illnesses" ("Programa Regional de Enfermedades Transfronterizas"). [https://www.oirsa.org/noticia-detalle.aspx?id=7685]. Accessed 29 August 2020.
[4] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria). 2018. "Nicaragua y el OIRSA". [https://www.oirsa.org/informacion.aspx?id=52]. Accessed 29 August 2020.
[5] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria).

2018. "Regional Program for Bovine Health" ("Programa Regional de Sanidad Bovina"). [https://www.oirsa.org/noticia-detalle.aspx?id=7668]. Accessed 29 August 2020.
[6] Regional International Organization for Agricultural Health (Organismo Internacional Regional de Sanidad Agropecuaria). 2020. "Nicaragua: course for auditing fumigation according to Australian regulations". [https://www.oirsa.org/noticia-detalle.aspx?id=7912]. Accessed 29 August 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: 2

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: 0

2021

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

5.4.1b

Has the country completed and published, within the last five years, either a National Action Plan for Health Security (NAPHS) to address gaps identified through the Joint External Evaluation (JEE) assessment or a national GHSA roadmap that sets milestones for achieving each of the GHSA targets?

Yes = 1 , No = 0

Current Year Score: 0

2021

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

5.4.2 Completion and publication of a Performance of Veterinary Services (PVS) assessment and gap analysis

5.4.2a

Has the country completed and published a Performance of Veterinary Services (PVS) assessment in the last five years?

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.4.2b

Has the country completed and published a Performance of Veterinary Services (PVS) gap analysis in the last five years?

Yes = 1 , No = 0

Current Year Score: 0

2021

OIE PVS assessments

5.5 FINANCING

5.5.1 National financing for epidemic preparedness

5.5.1a

Is there evidence that the country has allocated national funds to improve capacity to address epidemic threats within the past three years?

Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Nicaragua has allocated national funds to improve capacity to address epidemic threats within the past three years. In July 2020, the president of Nicaragua delivered a speech on the state of the healthcare system. In the speech, he mentioned two investments that could address epidemic threats. First, he stated that the government was constructing a "regional epidemiological laboratory". The speech did not provide details about the functions, cost or progress of construction of the laboratory. [1] Second, the president stated that the government had engaged in "the anti-epidemic struggle" with the fumigation of 414,398 homes and control of vectors of zoonotic diseases. The speech did not provide details about the cost or timing of these investments. [1] The website of the Ministry of Health (MINSA) does not contain budgets or financial reports more recent than 2016. [2] The websites of the MINSA, Ministry of Agriculture, and the Institute

for Agricultural Protection and Health (IPSA) do not contain additional information regarding the allocation of national funds to improve capacity to address epidemic threats within the past three years. [2, 3, 4] The website of the Presidency of the Republic of Nicaragua was not loading as of September 2020. [5, 6]

[1] Ministry of Health (Ministerio de Salud). 2020. "Nicaragua continues investing millions in healthcare". [http://webcache.googleusercontent.com/search?q=cache:kfFHzytIOuQJ:www.minsa.gob.ni/index.php/110-noticias-2020/5449-nicaragua-continua-millonaria-inversion-en-infraestructura-para-la-salud+&cd=1&hl=es-419&ct=clnk&gl=mx&client=firefox-b-d]. Accessed 30 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[3] Ministry of Agriculture (Ministerio Agropecuario). 2020. "Inicio". [https://mag.gob.ni/]. Accessed 16 August 2020.
[4] Institute for Agricultural Protection and Health (Instituto de Proteccion y Sanidad Agropecuaria). 2020. "Inicio". [https://www.ipsa.gob.ni/]. Accessed 18 August 2020.
[5] Presidency of the Republic of Nicaragua. 2020. "Presidencia". [http://www.presidencia.gob.ni/]. Accessed 14 September 2020.
[6] Embassy of the United States of America in Nicaragua. 2020. "Government Offices". [https://ni.usembassy.gov/es/u-s-citizen-services-es/local-resources-of-u-s-citizens-es/nicaraguan-government-offices-es/]. Accessed 14 September 2020.

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

5.5.2a

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

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

Current Year Score: 0

2021

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

5.5.2b

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

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

Current Year Score: 0

2021

OIE PVS assessments

5.5.3 Financing for emergency response

5.5.3a

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

Yes = 1 , No = 0

Current Year Score: 1

In Nicaragua, there is a publicly identified special emergency public financing mechanism and funds which the country can access in the face of a public health emergency through a dedicated national reserve fund, the National Disaster Fund. [1] Additionally, Nicaragua qualifies for credits from the World Bank's International Development Association and thus has access to the Bank's Pandemic Emergency Financing Facility (PEF). [2, 3] Nicaragua's National Disaster Fund was created by Law No. 337 of 2000, which set up the National System of Disaster Prevention, Mitigation and Attention's (SINAPRED). Article 12 of the law created the Fund and authorized it to fund the SINAPRED to "act in the face of imminent risks or disaster situations". The law does not specifically mention public health emergencies, but they are implicitly included in its definition of a disaster: "any situation that causes intense alterations to the social, physical, ecological, economic and cultural components of a society, putting human life and individual property in immediate danger". The law further distinguishes between "disasters" and "natural disasters"; the latter include specific natural phenomena as well as epizootic outbreaks and agricultural plagues. Article 30 of Law No. 337 authorizes the Ministry of Health to declare public health emergencies under the law, allowing access to funds from the National Disaster Fund. [1] Decree 53-2000 states that the Executive Secretariat of SINAPRED will propose the Fund's Annual Budget to the Ministry of the Treasury for inclusion in the national budget. [4] Decree 88-2007 regulates the operations of the Fund, but does not mention public health emergencies specifically, referring instead to "imminent risks and disaster situations". [5]

[1] President of the Republic of Nicaragua. 2000. "Law to Create the National System of Disaster Prevention, Mitigation and Attention Law No. 337" ("LEY CREADORA DEL SISTEMA NACIONAL PARA LA PREVENCION, MITIGACION Y ATENCION DE DESASTRES LEY No. 337").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/($All)/297E6E70F4940832062572020059E4CD?OpenDocument]. Accessed 30 August 2020.
[2] World Bank Group. 2018. "What is IDA? Borrowing Countries". [http://ida.worldbank.org/about/borrowing-countries]. Accessed 28 November 2018.
[3] Pandemic Emergency Financing Facility (PEF). 2017. "Operational Brief for Eligible Countries".
[http://pubdocs.worldbank.org/en/119961516647620597/PEF-Operational-Brief-Dec-2017.pdf]. Accessed 30 August 2020.
[4] President of the Republic of Nicaragua. 2000. "Regulations for Law Number 337, Law to Create the National System of Disaster Prevention, Mitigation and Attention Decree No. 53-2000" ("REGLAMENTO DE LA LEY NÚMERO 337, LEY CREADORA DEL SISTEMA NACIONAL PARA LA PREVENCIÓN, MITIGACIÓN Y ATENCIÓN DE DESASTRES DECRETO No. 53-2000").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/b92aaea87dac762406257265005d21f7/fa4ec05489cc13260625723c006686b5?OpenDocument]. Accessed 30 August 2020.
[5] President of the Republic of Nicaragua. 2007. "Regulations of the Structure and Operations of the National Fund for Disasters Decree No. 88-2007" ("REGLAMENTO DE ESTRUCTURA Y FUNCIONAMIENTO DEL FONDO NACIONAL PARA DESASTRES DECRETO No 88-2007").
[http://legislacion.asamblea.gob.ni/Normaweb.nsf/fb812bd5a06244ba062568a30051ce81/2436a8e1d0fdd1b60625736e0061389e?OpenDocument]. Accessed 30 August 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: 1

In Nicaragua, there is publicly available evidence that senior leaders have made a public commitment to improve domestic capacity to address epidemic threats by expanding financing or requesting support to improve capacity in the past three years. However,there is no publicly available evidence that senior leaders have made a public commitment to support other countries to improve capacity to address epidemic threats by providing financing or support. In terms of domestic capacity, in July 2020, the president of Nicaragua delivered a speech on the state of the healthcare system. In the speech, he mentioned two investments to address epidemic threats. First, he stated that the government was constructing a "regional epidemiological laboratory". The speech did not provide details about the functions, cost or progress of construction of the laboratory. [1] Second, the president stated that the government had engaged in "the anti-epidemic struggle" with the fumigation of 414,398 homes and control of vectors of zoonotic diseases. The speech did not provide details about the cost or timing of these investments. [1] According to a press report, the Ministry of Health's (MINSA) 2020 budget included increased funding for vector control to deal with the epidemic threat from zoonotic diseases. [2] In terms of support to other countries, in June 2020, Presidential Decree No. 13-2020 authorized the government to send troops on humanitarian missions to Guatemala, El Salvador, Honduras, Dominican Republic, Venezuela, Cuba, Mexico and other countries during the second half of 2020. There is no public evidence that troops have been sent on such missions. [3] The Global Health Security Funding Tracking Dashboard does not list Nicaragua as a funder for any projects in other countries. [4] The websites of the Ministry of Health, Ministry of Foreign Relations, the United Nations, and the World Health Organisation (WHO) do not contain additional information regarding public commitments to support other countries to improve capacity to address epidemic threats by providing financing or support. [5, 6, 7, 8]

[1] Ministry of Health (Ministerio de Salud). 2020. "Nicaragua continues investing millions in healthcare". [http://webcache.googleusercontent.com/search?q=cache:kfFHzytIOuQJ:www.minsa.gob.ni/index.php/110-noticias-2020/5449-nicaragua-continua-millonaria-inversion-en-infraestructura-para-la-salud+&cd=1&hl=es-419&ct=clnk&gl=mx&client=firefox-b-d]. Accessed 30 August 2020.
[2] La Prensa. 2020. "MINSA has more funds to fight epidemic illnesses according to the national budget". [https://www.laprensa.com.ni/2020/01/07/nacionales/2627196-el-minsa-con-mas-fondos-para-la-lucha-de-enfermedades-epidemicas-segun-el-presupuesto-de-la-republica]. Accessed 30 August 2020.
[3] President of the Republic of Nicaragua. 2020. "Presidential Decree No. 13-2020". [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/8E6E3E441ECA06BA06258583007113 21?OpenDocument]. Accessed 27 August 2020.
[4] GHS Tracking Dashboard. 2020. "Nicaragua Funder Profile". [https://tracking.ghscosting.org/details/167/funder]. Accessed 30 August 2020.
[5] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[6] Ministry of Foreign Relations (Ministerio de Relaciones Exteriores). 2020. "Cancilleria". [http://www.cancilleria.gob.ni/]. Accessed 27 August 2020.
[7] World Health Organization. 2020. "Search results".

[https://www.who.int/home/search?query=nicaragua%20funding%20epidemic&page=1&pagesize=10&sort=relevance&sortdir=desc&cname=highlight-en&cname=emronew&cname=who&cname=euro&cname=afro&cname=amro&cname=pmnch&cname=searo&cname=workforcealliance&cname=wpro&default=AND&f.Countries.size=100&f.Lang.filter=en&f.RegionalSites.filter=Global&f.RegionalSites.size=100&f.Topics.size=100&f.contenttype.filter=html&f.contenttype.size=100&f.doctype.size=101&facet.field=RegionalSites&facet.field=Topics&facet.field=doctype&facet.field=Countries&facet.field=contenttype&facet.field=Lang&tune=true&tune.0=3&tune.1=2&tune.2=2&tune.3=3&tune.4=180&tune.5=75]. Accessed 30 August 2020.
[8] United Nations News. 2020. "Search Results >> Nicaragua". [https://news.un.org/en/search/Nicaragua]. Accessed 30 August 2020.

5.5.4b

Is there evidence that the country has, in the past three years, either:
- Provided other countries with financing or technical support to improve capacity to address epidemic threats?
- Requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats?

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

Current Year Score: 1

First, there is no public evidence that Nicaragua has invested finances (from donors or national budget) or provided technical support to support other countries to improve capacity to address epidemic threats. Second, there is public evidence that Nicaragua has requested financing or technical support from donors to improve the country's domestic capacity to address epidemic threats. In terms of support to other countries, the Global Health Security (GHS) Funding Tracking Dashboard does not list Nicaragua as a funder for any projects in other countries. [1] In June 2020, Presidential Decree No. 13-2020 authorized the government to send troops on humanitarian missions to Guatemala, El Salvador, Honduras, Dominican Republic, Venezuela, Cuba, Mexico and other countries during the second half of 2020. There is no public evidence that troops have been sent on such missions. [2] In terms of funding requested from donors, the GHS Tracker lists US$65.7m disbursed and US$23.25m committed for 2019 and US$84.7m disbursed and US$57.88m committed for 2020. [3] Disbursed funds include US$23.84m for "D.2 Real Time Surveillance", US$6.33m for "D.1 National Laboratory System", US$3.22m for "R.2 Emergency Response Operations", and US$696,550 for "D.3 Reporting". [3] The websites of the Ministry of Health, Ministry of Foreign Relations, the United Nations, and the WHO do not contain additional information regarding funding to support other countries to improve capacity to address epidemic threats by providing financing or support. [4, 5, 6, 7]

[1] Georgetown Infectious Disease Atlas (GIDA) Global Health Security Tracker. 2020. "Nicaragua Funder Profile". [https://tracking.ghscosting.org/details/1011/funder]. Accessed 30 August 2020.
[2] President of the Republic of Nicaragua. 2020. "Presidential Decree No. 13-2020". [http://legislacion.asamblea.gob.ni/normaweb.nsf/($All)/8E6E3E441ECA06BA0625858300711321?OpenDocument]. Accessed 27 August 2020.
[3] Georgetown Infectious Disease Atlas (GIDA) Global Health Security Tracker. 2020. "Nicaragua Recipient Profile". [https://tracking.ghscosting.org/details/1011/recipient]. Accessed 30 August 2020.
[4] Ministry of Health (Ministerio de Salud). 2020. "Inicio". [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[5] Ministry of Foreign Relations (Ministerio de Relaciones Exteriores). 2020. "Cancilleria". [http://www.cancilleria.gob.ni/]. Accessed 27 August 2020.
[6] World Health Organization. 2020. "Search results". [https://www.who.int/home/search?query=nicaragua%20funding%20epidemic&page=1&pagesize=10&sort=relevance&sortdir=desc&cname=highlight-en&cname=emronew&cname=who&cname=euro&cname=afro&cname=amro&cname=pmnch&cname=searo&cname=work

forcealliance&cname=wpro&default=AND&f.Countries.size=100&f.Lang.filter=en&f.RegionalSites.filter=Global&f.RegionalSites.size=100&f.Topics.size=100&f.contenttype.filter=html&f.contenttype.size=100&f.doctype.size=101&facet.field=RegionalSites&facet.field=Topics&facet.field=doctype&facet.field=Countries&facet.field=contenttype&facet.field=Lang&tune=true&tune.0=3&tune.1=2&tune.2=2&tune.3=3&tune.4=180&tune.5=75]. Accessed 30 August 2020.
[7] United Nations News. 2020. "Search Results >> Nicaragua". [https://news.un.org/en/search/Nicaragua]. Accessed 30 August 2020.

5.5.4c

Is there evidence that the country has fulfilled its full contribution to the WHO within the past two years?
Yes = 1 , No = 0

Current Year Score: 1

2021

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

5.6 COMMITMENT TO SHARING OF GENETIC AND BIOLOGICAL DATA AND SPECIMENS

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

5.6.1a

Is there a publicly available plan or policy for sharing genetic data, clinical specimens, and/or isolated specimens (biological materials) along with the associated epidemiological data with international organizations and/or other countries that goes beyond influenza?
Yes = 1 , No = 0

Current Year Score: 0

There is insufficient evidence that Nicaragua has 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. In terms of epidemiological data, in 2020, the Pan American Health Organization sent a letter to Nicaragua faulting the national contact point for the International Health Regulations for presenting the required information for reporting on the COVID-19 pandemic in an "irregular manner". [1] The Ministry of Health's (MINSA) 2006 Inter-Ministerial Agreement on Avian Influenza commits the government "to immediately share epidemiological data and samples" with the WHO, OIE and international community (Article 5). [2] Nicaragua has participated in regional epidemiological surveillance networks, sharing data and results, since at least 2008. [3] Currently, Nicaragua participates in the Technical Commission for Health Surveillance and Information Systems (COTEVISI) under the auspices of the Council of Health Ministers of Central America (COMISCA). [4] Nicaragua reports that it has shared epidemiological surveillance data for influenza and dengue via COTEVISI. [5] The websites of the Ministry of Health, Ministry of Agriculture, and Nicaraguan Council of Science and Technology do not contain additional information regarding 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. [6, 7, 8]

[1] La Prensa. 2020. “State does not comply with international health regulations according to ex-minister”. [https://www.laprensa.com.ni/2020/06/02/nacionales/2680557-estado-no-cumple-reglas-sanitarias-internacionales-segun-exministra-de-salud-margarita-gurdian]. Accessed 30 August 2020.
[2] Ministry of Health (Ministerio de Salud). 2006. “Inter-Ministerial Agreement”. [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Avicola/Acuerdo%20Interministerial%20MAGFOR-MINSA%20-%20Comisi%C3%B3n%20T%C3%A9cnica%20para%20mantener%20el%20pa%C3%ADs%20libre%20de%20la%20IA.pdf]. Accessed 30 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2016. "Evaluation of the National HIV Surveillance System" (“EVALUACIÓN DEL SISTEMA NACIONAL DE VIGILANCIA EPIDEMIOLÓGICA DE VIH”). [http://comisca.net/sites/default/files/Informe%20Nicaragua%20Vigilancia%20%20%20%20Epidemiologica%20VIH%20final.pdf]. Accessed 30 August 2020.
[4] COMISCA Executive Secretariat (Secretaria Ejecutiva COMISCA). 2018. "Technical Commission for Health Surveillance and Information Systems (COTEVISI)" (“Comisión Técnica de Vigilancia en Salud y Sistemas de Información (COTEVISI)”). [https://www.sica.int/consulta/documentos.aspx?ident=1486&IdCat=&IdMod=3&IdEntStyle=143]. Accessed 30 August 2020.
[5] Pan American Health Organization. 2012. "ACUERDOS XXVIII RESSCAD". [https://www.paho.org/resscad/images/stories/GUATEMALA/descargas/nicaragua/seguiacuerdosnicaragua.pdf?ua=1]. Accessed 30 August 2020.
[6] Ministry of Health (Ministerio de Salud). 2020. “Inicio”. [http://www.minsa.gob.ni/]. Accessed 16 August 2020.
[7] Ministry of Agriculture (Ministerio Agropecuario). 2020. “Inicio”. [https://mag.gob.ni/]. Accessed 16 August 2020.
[8] Nicaraguan Council of Science and Technology (Consejo Nicaragüense de Ciencia y Tecnología). 2020. “conicyt.gob.ni”. [http://conicyt.gob.ni/]. Accessed 19 August 2020.

5.6.1b

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

Yes = 0 , No = 1

Current Year Score: 1

There is no public evidence that Nicaragua has not shared samples in accordance with the PIP framework in the past two years. Evidence indicates Nicaragua participates in sharing flu data and samples. The 2007 National Response Plan for the Risk of Pandemic Flu and Avian Flu commits Nicaragua to "transparency in reporting influenza cases" in order to improve preparedness and rapid response to potential pandemic outbreaks. In addition, the Plan states Nicaragua will "immediately share epidemiological data and samples with the World Health Organization and the World Animal Health Organization". [1] In 2018, Nicaraguan public health workers participated in a training session in Mexico to improve detection and identification of flu viruses via PCR in order to share higher quality information with neighboring countries and international organizations. [2] The Ministry of Health’s (MINSA) 2006 Inter-Ministerial Agreement on Avian Influenza commits the government “to immediately share epidemiological data and samples” with the WHO, OIE and international community (Article 5). [3] Local and international media do not contain reports of non-sharing.

[1] National System of Disaster Prevention, Mitigation and Attention (SINAPRED). 2007. “National Response Plan for the Risk of Pandemic Influenza and Avian Influenza”. [https://www.paho.org/hq/images/stories/AD/HSD/CD/INFLUENZA/nicaragua_nipp%20sinapred%20nic%20170407.pdf?ua=1]. Accessed 20 August 2020.
[2] Pan American Health Organization. 2018. "Improving the detection of the influenza virus in Latin America and the Caribbean" (“Mejorando la detección de los virus de la influenza en América Latina y el Caribe”).

[https://www.paho.org/hq/index.php?option=com_content&view=article&id=14556:mejorando-la-deteccion-de-los-virus-de-la-influenza-en-america-latina-y-el-caribe&Itemid=135&lang=pt]. Accessed 30 August 2020.
[3] Ministry of Health (Ministerio de Salud). 2006. “Inter-Ministerial Agreement”. [https://www.ipsa.gob.ni/Portals/0/3%20Salud%20Animal/Vigilancia%20Epidemiologica/Area%20Avicola/Acuerdo%20Interministerial%20MAGFOR-MINSA%20-%20Comisi%C3%B3n%20T%C3%A9cnica%20para%20mantener%20el%20pa%C3%ADs%20libre%20de%20la%20IA.pdf]. Accessed 30 August 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 publicly available evidence that Nicaragua has not shared pandemic pathogen samples during an outbreak in the past two years. The World Health Organisation (WHO)'s website does not contain additional public evidence regarding non-sharing of pandemic pathogen samples from Nicaragua. [1,2] In May 2020, the Pan American Health Organization stated that Nicaragua was not sharing data regarding its COVID-19 cases as required by the International Health Regulations. Reports did not mention non-sharing of samples. [3, 4] Local and international media do not contain reports of non-sharing of pandemic pathogen samples during an outbreak in the past two years in Nicaragua.

[1] World Health Organization. 2020. "Nicaragua". [https://www.who.int/countries/nic/en/]. Accessed 25 August 2020.
[2] World Health Organization. 2020. "WHO". [https://www.who.int/]. Accessed 10 September 2020.
[3] Tico Times. 2020. "Nicaragua breaches obligation to report coronavirus cases and deaths, PAHO says". [https://ticotimes.net/2020/05/20/nicaragua-breaches-obligation-to-report-coronavirus-cases-and-deaths-paho-says]. Accessed 10 September 2020.
[4] La Prensa. 2020. "State not complying with International Health Regulations according to ex-Minister of Health". [https://www.laprensa.com.ni/2020/06/02/nacionales/2680557-estado-no-cumple-reglas-sanitarias-internacionales-segun-exministra-de-salud-margarita-gurdian]. Accessed 10 September 2020.

Category 6: Overall risk environment and vulnerability to biological threats

6.1 POLITICAL AND SECURITY RISK

6.1.1 Government effectiveness

6.1.1a

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

Input number

Current Year Score: 2

2020

Economist Intelligence

6.1.1b

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

Input number

Current Year Score: 1

2020

Economist Intelligence

6.1.1c

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1d

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1e

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

Input number

Current Year Score: 22

2020

Transparency International

6.1.1f

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

Input number

Current Year Score: 0

2020

Economist Intelligence

6.1.1g

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

Input number

Current Year Score: 0

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: 0

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: 1

2021

Economist Intelligence

6.1.4 Illicit activities by non-state actors

6.1.4a

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

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

Current Year Score: 3

2021

Economist Intelligence

6.1.4b

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

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

Current Year Score: 4

2020

UN Office of Drugs and Crime (UNODC)

6.1.4c

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

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

Current Year Score: 2

2021

Economist Intelligence

6.1.5 Armed conflict

6.1.5a

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

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

Current Year Score: 2

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: 0

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: 82.61

2015

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: 0.54

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: 0.8

2014

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: 2

According to the World Bank data website, using data from the International Labour Organization's ILOSTAT database, in 2012 Nicaragua's informal employment as a percentage of total non-agricultural employment was 74.9%. [1] The ILOSTAT database does not have a more recent figure. [1] In a 2020 speech, the president of Nicaragua stated that 80% of urban workers were in the informal sector. [2]

[1] World Bank. 2020. "Informal employment (% of total non-agricultural employment) - Ecuador". [https://data.worldbank.org/indicator/SL.ISV.IFRM.ZS?locations=NI]. Accessed 8 August 2020.
[2] BBC Mundo. 2020. "Government of Nicaragua is trying to hide the dead". [https://www.bbc.com/mundo/noticias-america-latina-52716064]. Accessed 30 August 2020.

6.2.3c

Coverage of social insurance programs (% of population)

Scored in quartiles (0-3, where 3=best)

Current Year Score: 1

2016, or latest available

World Bank; Economist Impact calculations

6.2.4 Public confidence in government

6.2.4a

Level of confidence in public institutions

Input number

Current Year Score: 0

2021

Economist Intelligence Democracy Index

6.2.5 Local media and reporting

6.2.5a

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

Input number

Current Year Score: 0

2021

Economist Intelligence Democracy Index

6.2.6 Inequality

6.2.6a

Gini coefficient

Scored 0-1, where 0=best

Current Year Score: 0.46

Latest available.

World Bank; Economist Impact calculations

6.3 INFRASTRUCTURE ADEQUACY

6.3.1 Adequacy of road network

6.3.1a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.3.2 Adequacy of airports

6.3.2a

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

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

Current Year Score: 1

2021

Economist Intelligence

6.3.3 Adequacy of power network

6.3.3a

What is the risk that power shortages could be disruptive?

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

Current Year Score: 2

2021

Economist Intelligence

6.4 ENVIRONMENTAL RISKS

6.4.1 Urbanization

6.4.1a

Urban population (% of total population)

Input number

Current Year Score: 58.76

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: -6.84

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: 1

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: 74.28

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: 546.8

2019

WHO

6.5.1c

Population ages 65 and above (% of total population)

Input number

Current Year Score: 5.46

2019

World Bank

6.5.1d

Prevalence of current tobacco use (% of adults)

Input number

Current Year Score: 14.78

2018

World Bank

6.5.1e

Prevalence of obesity among adults

Input number

Current Year Score: 23.7

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: 81.52

2017

UNICEF; Economist Impact

6.5.2b

Percentage of homes with access to at least basic sanitation facilities

Input number

Current Year Score: 74.43

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: 283.47

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