Regional Workshop Strengthening the Detection and Reporting of Zoonotic Disease Outbreaks: Tabletop Exercise and Recommendations

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Workshop Report

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I. Glossary of Acronyms

ACTO - Organização do Tratado de Cooperação Amazônica
ANLIS Malbrán - Administración Nacional de Laboratorios e Institutos de Salud "Dr. Carlos G. Malbrán"
CDC - Centers for Disease Control and Prevention
CDC Perú - Centro Nacional de Epidemiología, Prevención y Control de Enfermedades del MINSA
CCZ - Centro de Controle de Zoonoses
CeNDIE - Centro Nacional de Diagnóstico e Investigación en Endemias
CENAP - Centro Nacional de Pesquisa e Conservação de Mamíferos Carnívoros
CEPLAN - Centro Nacional de Planeamiento Estratégico
CIEVS - Centro de Informações Estratégicas em Vigilância em Saúde
CVP - Comité Veterinario Permanente del Cono Sur
DIRESA - Dirección Regional de Salud (Perú)
EESS - Establecimientos de Salud
ENAP - Escuela Nacional de Administración Pública
FAO - Food and Agriculture Organization
Fiocruz - Fundação Oswaldo Cruz
FOPECAP - Formación y Capacitación Profesional en la Administración Pública
GERESA - Gerencia Regional de Salud (Perú)
HSP - Health Security Partners
ICMBio - Instituto Chico Mendes de Conservação da Biodiversidade
INAP - Instituto Nacional de la Administración Pública
INS - Instituto Nacional de Salud
LFDA - Laboratório Federal de Defesa Agropecuária
MAPA - Ministério da Agricultura
MCTI - Ministério da Ciência, Tecnologia e Inovação
MEC - Ministério da Educação
MEF - Ministerio de Economía y Finanzas
MERCOSUR - Mercado Común del Sur
MIDAGRI - Ministerio de Desarrollo Agrario y Riego
MINAM - Ministerio del Ambiente
MINEDU - Ministerio de Educación
MINEM - Ministerio de Energía y Minas
MINSA - Ministerio de Salud
MMA - Ministério do Meio Ambiente
MS - Ministério da Saúde
NOTI-Web - Sistema de Reporte de Enfermedades Notificables vía Web
ORAS-CONHU - Organismo Andino de Salud – Convenio Hipólito Unanue
PAHO - Pan American Health Organization
PANAFTOSA - Centro Panamericano de Fiebre Aftosa
PCM - Presidencia del Consejo de Ministros
PRODUCE - Ministerio de la Producción
RREE - Ministerio de Relaciones Exteriores
SENASA - Servicio Nacional de Sanidad y Calidad Agroalimentaria
SERNANP - Servicio Nacional de Áreas Naturales Protegidas
SERFOR - Servicio Nacional Forestal y de Fauna Silvestre
SIGCED - Sistema Integrado Gestión de Centros de Diagnóstico

SIGSA - Sistema de Información de Gestión Sanitaria Agropecuaria
SIGSA - Sistema de Integrado de Gestión de Sanidad Animal
SIEpi-Brotes - Sistema de Vigilancia Epidemiológica de Brotes
SINAGIR - Sistema Nacional de Gestión Integral del Riesgo
SINAN - Sistema de Informação de Agravos de Notificação
SISS-GEO - Sistema de Informação de Vigilância Sanitária em Saúde Ambiental
SIVEP-Gripe - Sistema de Informação de Vigilância Epidemiológica da Gripe
SNVS - Sistema Nacional de Vigilancia de la Salud
UVZ - Unidade de Vigilância de Zoonoses
WAHIS - Sistema Mundial de Información de Sanidad Animal
WHO - World Health Organization
WOAH (OMSA) - World Organisation for Animal Health

II. Executive Summary

The Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks, held in Paracas, Peru, from July 2-5, 2024, was a collaborative effort aimed at enhancing the capacities of Argentina, Brazil, and Peru to detect and report zoonotic disease outbreaks. Organized by Health Security Partners (HSP) and regional partners, the workshop brought together 45 experts from human, animal, wildlife, and environmental health sectors to evaluate existing mechanisms and develop comprehensive recommendations to improve national and international responses to zoonotic disease outbreaks.

The workshop employed dynamic group discussions and tabletop exercises that simulated zoonotic disease outbreak scenarios. These exercises highlighted the critical importance of advancing the One Health approach, which integrates efforts across sectors for a more cohesive and coordinated response. Participants actively identified challenges and formulated actionable recommendations for strengthening early detection, reporting mechanisms, diagnostic capacities, and communication strategies.

Key recommendations developed during the workshop included:

- **Enhancing Early Warning Systems**: Strengthening national early warning systems through improved training, stakeholder engagement, and intersectoral collaboration. Recommendations focused on promoting the One Health approach, improving data-sharing systems, and integrating various sectors (public health, animal health, and environmental health) into the detection and reporting processes.
- **Bolstering Diagnostic Capacities**: Expanding diagnostic networks, especially in under-resourced areas, and integrating laboratory networks to support rapid detection and response to zoonotic diseases. Strengthening capacity through continuous training and the provision of adequate resources for laboratories across sectors was a priority.
- **Updating Training Programs**: Recommendations called for updating and expanding training programs to incorporate One Health principles, ensuring that professionals in all relevant sectors are prepared to handle zoonotic outbreaks effectively. Joint simulations and interdisciplinary training programs were identified as critical methods for preparedness.
- **Strengthening Communication and Coordination Mechanisms**: Improving intersectoral communication and coordination at local, national, and international levels was seen as key to a timely and effective response. Establishing clear communication channels and enhancing the interoperability of information systems were emphasized to ensure swift coordination in outbreak responses.

The workshop methodology fostered an open dialogue and collaborative environment, allowing participants to present findings and develop these actionable recommendations. Although several limitations, such as resource constraints, communication challenges, and the need for sustained engagement, were identified, the workshop successfully laid a foundation for ongoing collaboration. The adoption of a unified One Health approach and the implementation of these recommendations can significantly enhance the capacities of Argentina, Brazil, and Peru to manage and respond to zoonotic disease outbreaks, thereby contributing to global health security.

III. Acknowledgements

Health Security Partners (HSP) is a nonprofit organization based in Washington DC, U.S. that is dedicated to building local capacity to improve public health through education, collaboration, and stewardship. HSP works with partners globally to develop and deliver programs that advance individuals' careers, institutions' capacities, and societies' ability to prevent, detect, and respond to infectious diseases, with the mission of realizing a better health security future for all. In late 2022, HSP received US Government funding to work with partners in Argentina, Brazil and Peru to strengthen regional detection and reporting of zoonotic disease outbreaks. This project was designed to begin to address gaps exposed by the pandemic by enhancing public health and veterinary molecular diagnostics, molecular analytics, and bioinformatic analysis capabilities and by strengthening existing national and regional zoonotic disease reporting. The *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks: Tabletop Exercise and Recommendations* represents the final stage of this project.

Through global engagements and with a shared goal of preventing, detecting and responding to infectious disease threats, HSP is honored to collaborate with diverse partners, including Ministries of Health, Agriculture, Environment, Foreign Affairs, and Security; Biosafety and Biosecurity Societies; international organizations; academic and private institutions; and public health and veterinary diagnostic facilities. HSP is grateful to all multisectoral participants who joined this event, contributing their experiences and ideas to imagine a future where strong One Health networks can efficiently and effectively address zoonotic disease outbreaks of pandemic potential. Key stakeholders, representatives from government, international cooperation and academic animal and human health organizations engaged in disease surveillance, molecular diagnosis and bioinformatics in Argentina, Brazil and Peru were actively involved in the event. Specifically, representatives from the following organizations contributed to this effort:

Organizers
Health Security Partners – HSP (USA)
Universidad Peruana Cayetano Heredia – UPCH (Peru)
Brazilian Society for Biosafety and Biosecurity – SB3 (Brazil)
National Center for Epidemiology, Prevention, and Control of Diseases – CDC Peru (Peru)
National Administration of Laboratories and Health Institutes, "Dr. Carlos G. Malbrán" – ANLIS (Argentina)

International Organizations
Food and Agriculture Organization (FAO)
World Organization for Animal Health - Regional Representation for the Americas
Pan-American Health Organization (PAHO/WHO)
Centro Panamericano de Fiebre Aftosa y Salud Pública Veterinaria -PANAFTOSA/SPV – (PAHO/WHO)
Organismo Andino de Salud – Convenio Hipólito Unanue (ORAS-CONHU)
United States Agency for International Development (USAID) in Peru

National-Level Institutions
Directorate of Animal Health - General Coordination of Territorial Control - SENASA (Argentina)
Evandro Chagas Institute / SVSA / MS (Brazil)
General Coordination of Public Health Laboratories / Ministry of Health (Brazil)
General Coordination of Surveillance of Zoonoses and Vector-Borne Diseases, Department of Communicable Diseases, Health Surveillance Secretariat, Ministry of Health (CGZV / DEDT / SVSA / MS) (Brazil)
ILMD / Fiocruz Amazonia (Brazil)
Ministry of Agriculture and Livestock (Brazil)
Ministry of Foreign Affairs (Peru)

Ministry of Health (Brazil)
Ministry of Health of Province of Córdoba (Argentina)
Ministry of Health (Peru)
National Ministry of Health (Argentina)
Ministry of Health, ANLIS Dr. CG Malbrán, National Institute of Tropical Medicine (Argentina)
Ministry of Health - Regional Health Management of Loreto (Peru)
Ministry of Health of the Province of Jujuy, General Directorate of Epidemiology (Argentina)
Ministry of Health, National Center for Diagnosis and Research in Endemic Epidemics (CeNDIE-ANLIS Malbrán) (Argentina)
National Center for Research and Conservation of Wild Birds of the Chico Mendes Institute for Biodiversity Conservation (an agency of the Ministry of the Environment) (Brazil)
National Civil Defense (Brazil)
National Forest and Wildlife Service - SERFOR (Peru)
National Institute of Health – INS (Peru)
National Institute of Health, National Center for Public Health (Peru)
Oswaldo Cruz Foundation, Presidency, (Brazil)
Sociedad Peruana de Enfermedades Infecciosas y Tropicales – SPEIT (Peru)
Secretariat of Health, Province of Chubut (Argentina)
Servicio Nacional de Sanidad Agraria del Perú -SENASA (Peru)
Directorate of Animal Health - General Coordination of Territorial Control - SENASA (Argentina)
Evandro Chagas Institute / SVSA / MS (Brazil)
General Coordination of Public Health Laboratories / Ministry of Health (Brazil)
General Coordination of Surveillance of Zoonoses and Vector-Borne Diseases, Department of Communicable Diseases, Health Surveillance Secretariat, Ministry of Health (CGZV / DEDT / SVSA / MS) (Brazil)
Instituto Leônidas e Maria Deane ILMD /Fiocruz Amazônia (Brazil)
Gerencia Regional de Salud de Loreto (Peru)

HSP would also like to acknowledge the contributions of the many subject matter experts from human, animal and environmental health who contributed critical information about current zoonotic disease detection and reporting practices in the region and supported the design of the tabletop exercise scenario. Specifically, HSP would like to thank Dr. Natalia Casas and Dr. Diego Riva (Argentina); Dr. Marco Vigilato, Dr. Marcos Vinícius Santana de Leandro Junior, and Dr. Francisco Edilson Ferreira de Lima Júnior (Brazil); Dr. Jorge Pastor, Dr. César Munayco, Dr. Iván Vargas, Dr. Jesús Lescano, Dr. Eglington Villacaqui, Dr. Fabiola Caruajulca, Dr. Kely Meza, Dr. Paola Martínez (Peru); Dr. Luciana Kohatsu and Dr. Roberto Esteves (US-CDC South America Office); Grace Goryoka (US-CDC One Health Office); Dr. Alexander Travis, Dr. Daryl Van Nydam, and Dr. Caroline Yancy (Cornell University College of Veterinary Medicine, Department of Public and Ecosystem Health); Dr. Alfonso Gushiken, Dr. Ruth Iguiñiz, Dr. Carlos Zamudio, Dr. Luis Beingolea, Dr. Óscar Escalante, Dr. Carlos Padilla, Dr. Beatriz Chirinos, Dr. Jorge Mantilla, Dr. Mercedes Flores, Dr. Maureen Birmingham, Dr. Manuel Loayza, and Dr. Jaime Chang.

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IV. Workshop Overview

Workshop Introduction

The COVID-19 pandemic and recent highly pathogenic avian influenza outbreak in the Region of the Americas has demonstrated the importance of strengthening national, regional and global capacities for zoonotic disease detection, reporting and response. To begin to address this need, HSP collaborated with regional partners in the organization of a series of activities, the last one being the *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks: Tabletop Exercise and Recommendations*, from July 2-5, 2024, organized with the support from the Universidad Peruana Cayetano Heredia, the Brazilian Biosafety and Biosecurity Society, ANLIS Malbrán and CDC-Perú. At this workshop, HSP and regional partners worked to bring together 45 zoonotic disease surveillance experts from Argentina, Brazil and Peru to discuss existing practices of zoonotic disease reporting within the region and to identify the best methods for strengthening capacities to detect and report outbreaks. Workshop participants performed a tabletop exercise to simulate zoonotic disease outbreak detection and response scenarios. Participants then worked together to formulate recommendations to improve regional detection and reporting of zoonotic diseases.

HSP invited zoonotic disease reporting experts and stakeholders at governmental and non-governmental institutions to bring expertise and influence on this event and to guide the decision-making process to strengthen reporting methods across the region.

Workshop Purpose

The purpose of the *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks* was to bring together representatives from human, animal, wildlife and environmental health sectors from Argentina, Brazil and Peru to do the following:

1. Assess existing formal and informal zoonotic disease outbreak detection and reporting mechanisms in each country and in the region, across sectors
2. Make recommendations to strengthen and/or develop new formal policies and procedures for efficient and effective coordinated One Health response to zoonotic disease outbreak events

Desired Workshop Outcomes

The following were the desired outcomes of the *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks*:

- Areas of improvement for national and regional One Health detection and reporting are identified and prioritized
- Recommendations for improving One Health outbreak detection and reporting across each country and the region are developed

As a result, regional stakeholders might utilize the recommendations to mobilize toward increasing national and regional coordination and capability to identify novel transboundary outbreaks.

V. Workshop Methodology

The *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks* aimed to create an atmosphere for open dialogue about the challenges surrounding outbreak detection and reporting across sectors within a country's respective borders, as well as data sharing and reporting with other countries within the region. The workshop was conducted under the Chatham House Rule, which was designed to foster a trusted environment for discussing and resolving complex issues. This rule allowed participants to use the information shared during the meeting but prohibited the disclosure of the identity or affiliation of any speaker or participant. The essence of the Chatham House Rule was to enable open and candid exchanges while maintaining confidentiality of participants.

HSP and regional partners carefully selected participants from each country and from across sectors who were directly involved in executing existing disease outbreak detection and reporting mechanisms. Specific participant selection criteria were developed in collaboration with local and international subject matter experts and is outlined in Appendix A. HSP chose a workshop venue that brought participants together in a serene setting far from the hustle of a big city, but close to a small village and with all necessary facilities to encourage participants to remain focused on the workshop content and to build relationships with each other. Prior to the arrival in Paracas, Peru, participants responded to a survey collecting information about participants' backgrounds and familiarity with One Health, as well as their expectations for the workshop. HSP developed a workshop agenda that was designed to foster dialogue and sharing of common goals across sectors and countries. On Day 0, the workshop opened with a ceremony outlining the objectives and an icebreaker session to foster dialogue and sharing of common goals. On Day 1, HSP facilitators used a Tabletop Exercise (TTX) as a method to encourage discussion. The scenario was hypothetical and was designed to facilitate discussion based on participants' own knowledge and experience. On Day 2 and Day 3, HSP facilitators guided participants to work in small groups to identify areas for improvement and to develop recommendations for challenges and lessons learned from both the TTX and real-world experiences. Participants were provided with templates to share their outcomes at the plenary sessions. The last session of the workshop included a discussion about the results, follow-up activities by the participants, and suggestions for the design of this workshop report. Following closing remarks from the organizers, the participants completed a post-workshop survey to share feedback on the workshop.

The agenda for each day was executed as follows:

Opening Evening Ceremony:

Before starting the workshop activities, the participants were gathered for an opening ceremony for formal introductions from the workshop organizers and to have an overview of the workshop format and intended objectives. Following this, workshop organizers led participants in an icebreaker exercise to encourage participants from different countries and sectors to get to know each other and their aspirations for the workshop. This exercise was intended to ensure the participants felt comfortable greeting and working with participants from other countries and sectors during the workshop.

Day 1: Tabletop Exercise

The workshop commenced with a plenary session dedicated to a detailed review of the TTX format. Following this, participants were divided into breakout rooms by country, where each group was assigned a country-specific module from the zoonotic disease outbreak scenario. In these groups, players discussed the module, noting any challenges encountered. Each group then developed a presentation using a provided PowerPoint template to outline major discussion points and the challenges identified during the exercise. Afterwards, participants reconvened in a plenary session to present their findings. This process was repeated for Modules 2 and 3. The TTX participants had specific roles: Players, who were

representatives from the human, animal, and environmental sectors, engaged with each module based on their existing understanding of detection and reporting procedures in their respective countries, offered insights based on real-world experiences similar to the exercise scenarios, and developed and delivered presentations about their discussions. Each group designated a "Presenter," a "Note Taker," and a "Presentation Maker" for each module. Observers, who were representatives from international organizations, recorded key discussion items and challenges, while Facilitators ensured the TTX ran smoothly, provided technology support, and guided Players through the modules.

Days 2 and 3: Analysis and Recommendations Development

The second and third days started with a plenary session that offered guidance on analyzing the challenges identified on Day 1. Participants used either a root cause analysis, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis or guided discussion to determine challenges to determine their root causes and to develop recommendations to address these challenges for their own country and the region. Following this, participants were divided into breakout rooms again for a series of three working sessions focused on developing recommendations to strengthen specific aspects of zoonotic disease detection and reporting: Detection (Day 2 morning), National Reporting (Day 2 afternoon), and Regional/International Reporting (Day 3). During each session, participants summarized the challenges, determined their root causes, and made recommendations for addressing them. They used the provided PowerPoint template to prepare their presentations. The workshop concluded with a plenary session where participants presented their findings. The breakout rooms were organized by country on Day 2 to discuss challenges and recommendations to strengthen detection and national reporting, and were mixed on Day 3 to discuss international reporting.

VI. TableTop Exercise (TTX): Group Discussion of Activities Conducted in Response to an Evolving Zoonotic Disease Outbreak and Initial Identification of Challenges to Detection and Reporting

Overview

The TTX was based on a hypothetical disease outbreak scenario with three modules that encouraged participants to discuss existing policies and procedures related to detection and reporting of zoonotic diseases. The exercise was designed to be realistic but contained some unlikely details, which participants were asked to disregard. The exercise was not intended to test the identification of a specific pathogen but to stimulate discussion among workshop participants from the human, animal, wildlife, and environmental sectors. On Day 1, the goal was to outline and discuss detection and reporting activities relevant to the scenarios presented, examine existing policies and procedures, and identify challenges and potential improvements to strengthen a coordinated One Health response.

For the purpose of this exercise, players were requested to discuss and develop presentations about specific activities related to detection and reporting in each module. Although detection and reporting typically occur in parallel, the workshop discussion was structured as follows:

Module 1: Detection at the Local Level
The focus was on initial outbreak detection within the country's borders and near neighboring countries, across various sectors. Emphasis was placed on immediate response actions, including quarantine measures and initial reporting procedures, across sectors. Preliminary challenges associated with initial detection and response activities were meant to be identified.

Module 2: National Reporting
The discussion centered on the escalation of the outbreak and the implementation of national reporting procedures, across sectors. Coordination between local and national authorities, including data sharing within the country, was highlighted. Preliminary challenges associated with disease escalation and national reporting procedures were meant to be identified.

Module 3: International Reporting
The focus was on international reporting and coordination efforts, across sectors. Emphasis was placed on cross-border communication and collaborative efforts to control the outbreak. Preliminary challenges associated with international coordination and control measures were meant to be identified.

These initial discussions and presentations given in the plenary session would be important for setting the stage for the group work to be conducted on Days 2 and 3. The content of each group presentation is summarized in the following sections VI.i - VI.iii. Detailed outlines of the presentations can be found in Appendix B.

VI.i. Group Discussion of Activities Conducted in Response to an Evolving Zoonotic Disease Outbreak and Initial Identification of Challenges: Argentina

Module 1: Discussion of Detection at the Local Level

Key Detection Activities: In Argentina, key detection activities for zoonotic diseases are categorized by sector. In the animal sector, if animals are sent from one country to another, detection involves quarantining animals at their destination and sending samples back to their country of origin. Alternatively, and depending on the severity of symptoms and cases, samples are taken and sent to local laboratories. Animals are released if test results are negative; if results are positive, a suspicion protocol is activated. In the human, wildlife, and environmental sectors, detection activities commence when a disease is identified in animals. This includes epidemiological and clinical surveillance of humans who had contact with the sick animals and alerting wildlife and environmental authorities to monitor wild animals.

Relevant Policies and Procedures: Detection of sick animals is formally communicated by private veterinarians to local SENASA (National Service for Agri-Food Health and Quality) offices, which then inform SENASA central. There is also informal communication between veterinarians, typically via WhatsApp, especially in the case of the CVP (Permanent Veterinary Committee of the Southern Cone). Formal and informal notifications are made to other sectors (e.g., Ministry of Health, National Parks, Wildlife) but only after SENASA identifies the etiology.

Areas for Strengthening Coordination for Detection: Several areas require improvement to enhance coordination in detection. Immediate alerts for suspected sick animals are necessary to implement preventive measures for human health, with a streamlined and formalized flow of information. Currently, local health authorities do not receive immediate information about suspected animal diseases or sample submissions. Additionally, notification systems are not interoperable; while SENASA has access to the National Health Surveillance System (SNVS), human health authorities do not have access to the production animal health system. Companion animals are managed by the health sector.

Module 2: Discussion of National Reporting

Key Reporting Activities: National reporting activities in Argentina involve several steps and coordination among various authorities. Local SENASA offices notify the National Health Information System (SIGSA), which then informs the national level of SENASA. SENASA formally communicates with the Ministry of Health and other relevant authorities, declaring a health emergency and involving different sectors, including health, environment, national parks, and the private sector. The Ministry of Health informs jurisdictional health ministries, coordinating responses to suspected human cases. Health and SENASA issue an epidemiological alert with case definitions, sampling protocols, and prevention and control measures. Jurisdictions report outbreaks through the National Health Surveillance System (SNVS), managing the suspicion, confirmation, updating, and closure of outbreaks. New events are created within SNVS for official notification and epidemiological surveillance of human cases. Risk communication is managed through social media and other communication channels.

Relevant Policies and Procedures: Key policies and procedures guiding national reporting include the National Law 15.464 on mandatory disease notification, SENASA Resolution N°153/2021 on mandatory disease declaration, and National Law N°3959 on health policing. The National System for Comprehensive Risk Management (SINAGIR), established by National Law 27.287 in 2016, and SENASA Resolution 779/1999 on health emergencies and contingency plans are also crucial. The Ministry of Health's Resolution 3846/2023 outlines a preparedness and response plan for public health events of national or international importance with epidemic or pandemic potential. Situation rooms coordinated by the Ministry of Health involve all sectors in response to human cases, although there is no formal protocol for this coordination, relying instead on established practices.

Areas for Strengthening Coordination for National Reporting: Several areas have been identified for strengthening national reporting. Improving the timeliness of national alerts and recommendations to jurisdictions is crucial. Some jurisdictions do not consistently report to the system despite legal requirements. Elevating ministerial resolutions to laws to enforce protocols involving all relevant areas at national and jurisdictional levels is needed. Within the environmental sector, it is essential to incorporate a conservationist vision and One Health approach. Coordination with the Ministry of Education to modify curricula to include One Health concepts or train educators to integrate these topics themselves is also necessary. Ensuring interoperable reports among sectors and improving coordination among all components within the Ministry of Health will further enhance the reporting system.

Module 3: Discussion of International Reporting

Key Reporting Activities: In Argentina, international reporting activities involve mandatory notifications by SENASA to the World Organisation for Animal Health (OMSA), as well as to trade partners and the CVP, although the latter two are not mandatory. For human health, the International Health Regulations (IHR) guide the process, with the National Focal Point notifying PAHO/WHO and involved countries. The National Directorates of International Relations in the relevant ministries maintain contact with other countries. Both formal and informal reports are exchanged among technical area representatives, such as those handling zoonoses in SENASA.

Relevant Policies and Procedures: Key policies and procedures include coordination with the Ministry of Foreign Affairs to enhance surveillance with external funding for border events. Being a member of PAHO/WHO and OMSA necessitates certain notifications. MERCOSUR facilitates communication between member countries. However, each country independently notifies its respective international organizations, without a unified intersectoral report.

Areas for Strengthening Coordination for International Reporting: Several areas need improvement to strengthen international reporting. It is essential to involve actors beyond the health sector, such as Foreign Affairs, Security, Tourism, and Economy. International documents related to One Health, produced by global organizations, should be utilized by countries at national and local levels, ideally translated into each country's language. Facilitating the dissemination of international documents through a formal circuit will enhance the reporting process.

VI.ii. Group Discussion of Activities Conducted in Response to an Evolving Zoonotic Disease Outbreak and Initial Identification of Challenges: Brazil

Module 1: Discussion of Detection at the Local Level

Key Detection Activities: In the animal sector, key detection activities begin at the local level, with producers reporting to local veterinarians or farm veterinarians. If a disease is suspected, the case is escalated to the Official Veterinary Service for suspicion evaluation, followed by sampling and laboratory diagnostics at the LFDA, which can take around 10 days for diseases like neurological conditions such as rabies and BSE. Depending on the diagnosis, further actions are determined; if the disease is not part of an existing program or considered exotic, the responsibility falls on the producer to manage it. The Ministry of the Environment (MMA) might involve CENAP – ICMBio/MMA if requested by state agricultural defenses, though this is rare. For specific species like capybaras, entities such as UVZ or CCZ can be activated via the SISS-GEO system managed by Fiocruz/MS. Additionally, CIEVS monitors rumors and reports on animal deaths across different species, prompting the Ministry of Health (MS) to seek information from MAPA and/or MMA. There is also an evaluation of the need to establish an inter institutional COE for better coordination.

Relevant Policies and Procedures: Brazil adheres to the policies and procedures outlined in regulations, norms, and ordinances as a signatory of OMSA and WHO. Depending on the pathogen, Brazil follows the principle of transparency by notifying OMSA and may suspend exports according to IN n°50 of 24/09/2013 and decree n°24.548 of 1934 concerning Animal Health Defense. These regulations ensure that Brazil maintains international standards for disease notification and control, promoting timely and accurate reporting.

Areas for Strengthening Coordination for Detection: Several areas have been identified for strengthening coordination in the detection of zoonotic diseases. Integrated training for the One Health approach is essential to ensure that professionals across human, animal, and environmental health sectors are well-prepared to manage and respond to zoonotic diseases effectively. Enhancing the systems for alert and data traceability is crucial for comprehensive monitoring, prompt action, and improved transparency of data across different health sectors. Strengthening communication channels with neighboring countries is essential for facilitating cross-border disease detection and reporting, which helps manage zoonotic diseases that can easily spread across borders. Lastly, fortifying diagnostic networks with integrated information sharing is vital for enhancing the accuracy and speed of disease detection and response, ensuring that all relevant sectors can access and share crucial information promptly.

Module 2: Discussion of National Reporting

Key Reporting Activities: National reporting activities in Brazil's health surveillance system involve multiple layers and sectors. These activities include the use of SINAN, InfoGripe, and SIVEP-Gripe for respiratory virus surveillance through notification forms. Sentinel surveillance for respiratory viruses and hospital surveillance via patient records are critical components. Municipal epidemiological surveillance, occupational health surveillance, and environmental health surveillance also play significant roles. Laboratory networks conduct laboratory surveillance, while CIEVS facilitates communication and response coordination. Animal health surveillance includes email notifications among different sectors to ensure comprehensive reporting.

Relevant Policies and Procedures: Brazil's reporting system is guided by a list of notifiable diseases across human and animal health sectors. Information systems from different ministries (MS, MMA, MAPA) are currently not integrated, which is a challenge. The International Health Regulations (IHR) provide a decision algorithm for declaring public health events of international concern. Policies include training and simulated emergency response exercises, the field epidemiology program applied to SUS, and public

health emergency training programs. Interministerial guides for disease surveillance (e.g., rabies, glanders, bovine brucellosis, avian influenza, West Nile virus, EEEV) and contingency plans are in place to support coordinated response efforts.

Areas for Strengthening Coordination for Reporting: To enhance national reporting, several areas require improvement. Integrated training for a One Health approach is necessary to increase sensitivity to various health threats. Efforts to increase the sensitivity of the surveillance system and integrate rumor reporting are crucial. Harmonizing notification systems and generating georeferenced data will aid in predicting the spread of diseases affecting both human and wildlife health. Encouraging the integration of civil defense with health across all levels, strengthening the genomic laboratory surveillance network, and expanding contingency plans are also vital steps for improving coordination and response.

Module 3: Discussion of International Reporting

Key Reporting Activities: International reporting activities in Brazil encompass both animal and human health sectors. For animal health, Brazil utilizes the World Animal Health Information System (WAHIS) of the World Organisation for Animal Health (OMSA), and reports to PANAFTOSA/PAHO. Additionally, notifications are sent to the animal health authorities of trading partner countries. In human health, the International Health Regulations (IHR) guide reporting to PAHO and WHO. Information sharing and requests are also made to neighboring countries to ensure comprehensive disease monitoring and response.

Relevant Policies and Procedures: The framework for international reporting is supported by several key policies and agreements. The International Health Regulations (IHR) provide a foundation for global health security, while bilateral agreements facilitate direct communication between countries. Regional agreements such as the Amazon Cooperation Treaty Organization (OTCA) and Mercosur, along with the Quadripartite Alliance, support regional cooperation. The Convention on Biological Diversity (CDB) and the Nagoya Protocol focus on sharing information and benefits. Other relevant agreements include the WTO's SPS Agreement on sanitary and phytosanitary measures, CITES for endangered species trade, the UN's Chemical and Biological Weapons Conventions, and the Cartagena Protocol on biosafety. Brazil's leadership in the G20 and initiatives like the "Mission of 100 Days" aim to enhance global pandemic preparedness and response.

Areas for Strengthening Coordination for International Reporting: While current mechanisms are effective in disseminating information among countries, there is room for improvement in response times and system interoperability. Developing standardized data and metadata parameters will facilitate better integration of reporting systems. Enhancing these areas will ensure quicker and more coordinated international responses to health threats.

VI.iii. Group Discussion of Activities Conducted in Response to an Evolving Zoonotic Disease Outbreak and Initial Identification of Challenges: Peru

Module 1: Discussion of Detection at the Local Level

Key Detection Activities: In the animal sector, key detection activities included health checks for livestock at entry points, ensuring import certificates ruled out notifiable diseases. Biological samples were taken based on a risk assessment of the country from which the cattle were being imported. When the number of animals is small, all of them could be sampled (i.e., 100 animals). If any animals appeared sick, they were quarantined, and further samples were taken for detailed etiological studies. However, not all farmers or veterinarians reported sick animals. SENASA's surveillance was triggered only by formal notifications, often made via phone or WhatsApp. For wild animals, communication was extended to park rangers and wildlife authorities to monitor unusual health events.

Relevant Policies and Procedures: The monitoring of notifiable diseases in animals was regulated by SENASA, which included a list of notifiable diseases, mandatory reporting, surveillance and control plans, periodic inspections, and certified diagnostic laboratories. Veterinarians, producers, and anyone suspecting or confirming a notifiable disease were required to report it immediately to SENASA. Regular inspections were conducted in farms, slaughterhouses, markets, and other critical points to detect diseases.

Areas for Strengthening Coordination for Detection: Several areas required improvement to strengthen detection coordination. Communication to the Ministry of Health (MINSA) about animal diseases needed enhancement. Diagnostic limitations existed due to the lack of kits for all diseases. Informal farming and trading complicated tracking sick animals, and there was no compensation for animal losses. Centralized laboratories for diagnosing diseases in production and companion animals have been identified as a weakness, SENASA has only one laboratory in Lima, there are small private laboratories in main cities. Another significant weakness is the lack of laboratories dedicated to wildlife analysis. Policies promoted coordination through tools like notification apps and social media, fostering a One Health approach that encouraged collaboration across human, animal, and environmental health sectors. However, there was a need for greater dissemination and utilization of these tools to improve the system's overall effectiveness.

Module 2: Discussion of National Reporting

Key Reporting Activities: In the animal sector, decentralized SENASA offices issued notifications through the SICSA notification system. Laboratory analysis followed and was communicated via SIGSE, SERNANP, and SERFOR through their internal procedures. The Central Directorate of SENASA, SERFOR, and SERNANP reported events to senior management and the Ministry of Health (MINSA) via email. If animals died with negative results for notifiable diseases, they were immobilized, and samples were sent to specialized partner or academic laboratories, coordinated with the INS. In the human sector, notifiable diseases or unusual outbreaks were reported through the SIEpi-Brotes and NOTI-Web systems from health facilities. Local laboratories could diagnose notifiable human diseases, but for more specialized studies (e.g., metagenomic sequencing), samples were sent to the national level (INS).

Relevant Policies and Procedures: Relevant policies and procedures for animal and human health included the issuance of local alerts and the activation of specific committees. For animal health, this involved the Multisectoral Committee for the Prevention and Control of Zoonoses. For human health, the policies involved the GERESA and DIRESA Technical Committee and the Multisectoral Committee for the Prevention and Control of Zoonoses, along with investigation and intervention activities. While there was an integrated work guide for avian influenza, promoting some level of coordination, and there is a list of priority zoonotic diseases approved by the technical teams, the lack of approved inter-ministerial

normative documents, technical documents for other significant zoonotic diseases, and a national One Health policy, alongside the absence of a Multisectoral Strategic Plan, hindered broader coordination efforts.

Areas for Strengthening Coordination for Reporting: Initial areas for strengthening national reporting included bolstering the capacities of animal health laboratories.

Module 3: Discussion of International Reporting

Key International Reporting Activities: In the animal sector, zoonotic events with public health impacts were reported by SENASA to the World Organisation for Animal Health (OMSA). In the human sector, such events were reported by the National Liaison Center, managed by the National Center for Epidemiology, Prevention and Control of Diseases (CDC) to the Pan American Health Organization (PAHO) and the World Health Organization (WHO). Communication was also established with liaison centers of neighboring countries experiencing similar situations. Biological samples were sent to specialized regional or national laboratories for analysis, and if necessary, an aliquot was sent to international reference centers directly or via organizations like PAHO.

Relevant Policies and Procedures: Relevant policies and procedures regulated the international notification of zoonotic diseases in Peru to ensure a rapid and coordinated response to outbreaks affecting both animal and human health. Key policies included the International Health Regulations (IHR 2005), the General Health Law (Law No. 26842) which established responsibilities for the Ministry of Health (MINSA) and other entities in disease surveillance and control, the Animal Health Law (Law No. 30597) which defined SENASA's responsibilities in animal disease surveillance and control, and the Law Strengthening MINSA in Epidemiological Surveillance (Law No. 31961). Coordination was promoted through formal procedures, including international cooperation agreements and the Multisectoral Commission for the Prevention and Control of Zoonoses, which facilitated the development of guides and procedures for certain zoonoses like avian influenza and yellow fever. Challenges were addressed mainly through informal communications with different sectors, including the Ministry of Foreign Affairs and international experts, and direct communication between local health authorities in border regions.

Areas for Strengthening Coordination for International Reporting: To strengthen coordination for international reporting, several areas need to be addressed. Developing a national multisectoral One Health policy is essential. Establishing official intersectoral communication channels that include all relevant sectors will enhance information sharing and coordination. Mandating the National Liaison Center to consolidate surveillance across different sectors will ensure a more integrated approach. Additionally, standardizing protocols for the international submission of samples will streamline processes and improve efficiency in reporting.

VII. Group Work Findings: Discussion of Challenges and Recommendations to Strengthen National Detection of Zoonotic Disease Outbreaks

Overview

On Days 2 and 3, the focus shifted to identifying priority challenges and developing recommendations to strengthen formal and informal detection and reporting mechanisms and proposing strategies to enhance cross-sector cooperation and a unified One Health approach. Participants were divided into groups for three working sessions: Detection (Day 2 morning, divided into groups by country, with at least two international organization representatives), National Reporting (Day 2 afternoon, divided into groups by country, with at least two international organization representatives), and Regional/International Reporting (Day 3, divided into three mixed groups across countries and sectors). In each session, participants were asked to use a provided PowerPoint template to develop presentations addressing the top challenges to a strong One Health response, develop recommendations to overcome these challenges, and a complete table outlining the intended activities, stakeholders, and outcomes for each recommendation.

To begin analyzing challenges and developing recommendations, HSP facilitators recommended starting with the initial challenges identified during the scenario module presentations. Two methodologies were suggested to guide the challenge identification process: SWOT Analysis (Strengths, Weaknesses, Opportunities and Threats) for situational awareness and Root Cause Analysis for refining the challenge identified. Participants were encouraged to draw on their own and their colleagues' expertise and to consult existing One Health framework documents as needed. Additionally, they were advised to use the provided discussion questions to support their analysis, though it was not necessary to answer all questions. Participants were provided PowerPoint presentations templates to create their presentations before delivering them to the group in plenary session. The following sections outline the discussions of priority challenges and opportunities to strengthen detection of zoonotic diseases at the national level, including a summary of shared priorities. Sections VIII and IX will include discussion of priority challenges and opportunities to strengthen zoonotic disease reporting at the national and international levels. Detailed content of the PowerPoint presentations can be found in Appendix C - Detection, Appendix D - National Reporting, Appendix E, International Reporting.

VII.i. Opportunities to Improve Country-Level Detection of Zoonotic Disease Outbreaks: Argentina

To strengthen the detection of zoonotic diseases in Argentina, the recommendations emphasize adopting a comprehensive One Health approach, focusing on early warning and effective communication.

Early Warning: Emphasizing the One Health approach, the recommendations call for raising awareness and educating stakeholders across diverse sectors. This includes public and private institutions, ministries of health, agriculture, and environment, along with producers, laboratories, veterinary colleges, and universities. The goal is to ensure that all stakeholders are well-trained to provide early warnings and immediate reporting of suspicious cases, integrating efforts across human, animal, and environmental health. Articulating and establishing agreements between the public and private sectors will enhance collaboration in areas such as tourism, agricultural federations, and universities. Reviewing and unifying reporting systems from a One Health perspective is crucial for integrated detection and reporting. Simplifying reporting through mobile applications and promoting environmental monitoring, like surveillance of agents in wastewater, are key activities. Promoting professional ethics and legal responsibilities among producers and laboratories will improve reporting, while incorporating professionals into record systems will expand the detection network and ensure a holistic surveillance approach.

Communication: Effective communication is vital for timely reporting and response to suspected zoonotic diseases. Mapping actors involved in outbreak reporting at local and jurisdictional levels ensures real-time information flow, crucial for taking appropriate measures. Creating a network of actors for reporting suspected cases and integrating existing systems with decision algorithms will enable all levels to access the same information simultaneously. Establishing high-surveillance inter-country and inter-provincial border health zones based on epidemiological risk scenarios will provide early warnings for potential zoonotic events. Finally, designing a strategy to strengthen the IT area across all ministries involved in the One Health approach will ensure sustainable and sovereign operating systems, fostering coordinated actions across human, animal, and environmental health sectors.

These recommendations underscore the importance of a unified One Health approach in Argentina, enhancing collaboration and coordination among diverse stakeholders to ensure robust and effective detection and response to zoonotic disease outbreaks.

VII.ii. Opportunities to Improve Country-Level Detection of Zoonotic Disease Outbreaks: Brazil

The recommendations focus on enhancing the detection and response to zoonotic diseases in Brazil through a comprehensive One Health approach, emphasizing collaborative actions across various institutions and sectors:

Joint Mapping of Surveillance Actions: This recommendation involves creating an integrated mapping of current surveillance activities to understand better and address potential interactions, needs, and resistances. A National Action Plan should be developed and implemented in collaboration with key institutions like MAPA, MMA, and MS. This plan should be presented to the presidency to secure necessary resources, ensuring robust implementation within the Public Action Plan (PPA).

Integrated Training Programs: The strengthening of detection capabilities also includes updating and surveying existing training programs to integrate the One Health approach effectively. This involves developing specialized training for professionals and incorporating One Health principles into both basic and higher education curricula to increase public awareness and preparedness. Joint simulations are also recommended to train professionals for emergency situations, involving institutions such as MS, MAPA, MMA, MEC, MCTI, and Civil Defense.

Integration of Information Systems and Diagnostic Networks: Another crucial recommendation is the enhancement of interoperability among various information and alert systems to promote the transparency and timely dissemination of data. This involves integrating health surveillance actions and alert communication strategies across human, animal, plant, and environmental health sectors, ensuring prompt decision-making during emergencies. The integration of laboratory networks, including those within Brazilian universities, is essential for sharing critical information efficiently.

These strategies aim to fortify the infrastructure for a unified and effective response to public health threats, specifically zoonotic diseases, through improved coordination and collaboration among diverse stakeholders.

VII.iii. Opportunities to Improve Country-Level Detection of Zoonotic Disease Outbreaks: Peru

The recommendations for improving zoonotic disease detection in Peru emphasize a comprehensive One Health approach, focusing on enhancing diagnostic capacities and human resources:

Strengthening Diagnostic Capacities: The primary recommendation is to develop a multisectoral national health policy and a Multisectoral Strategic Plan for integrated surveillance. This involves implementing a national network of animal health laboratories, which will be crucial in increasing diagnostic capacity for zoonotic diseases within the animal sector. Key stakeholders such as PCM, MEF, MIDAGRI, MINAM,

MINSA, and PRODUCE, alongside academia and the private sector, are instrumental in executing these activities. The goal is to establish a robust animal health surveillance network that includes both wildlife and production animals, ensuring early detection and swift response to zoonotic disease outbreaks.

Enhancing Human Resource Training: Another critical recommendation is to address the gaps in trained human resources capable of detecting zoonotic diseases. This involves conducting a thorough gap analysis to identify current deficiencies in training and resources across relevant sectors. Subsequent actions include promoting continuous education and training for professionals and technicians under the One Health framework, integrating these training components into sectoral strategic plans. Stakeholders such as MIDAGRI, MINSA, MINAM, PRODUCE, MINEDU, and various educational institutions are key to implementing these strategies.

Overall, these recommendations aim to significantly improve the capacity and coordination for detecting and managing zoonotic diseases in Peru, ensuring that professionals are well-equipped and systems are in place for effective surveillance and response under the One Health framework.

VII.iv. Shared Priorities for Strengthening Disease Detection in Argentina, Brazil, and Peru

According to the group work presented by the workshop participants, Argentina, Brazil, and Peru share several overlapping priorities for improving the detection of zoonotic disease outbreaks. These priorities focus on the integration and coordination of efforts across various sectors to enhance early warning systems, diagnostic capacities, training programs, and communication mechanisms.

1. One Health Approach: All three countries emphasize the importance of a One Health approach, which integrates human, animal, and environmental health sectors. This approach aims to ensure cohesive and comprehensive strategies for detecting zoonotic diseases.

2. Early Warning Systems: Enhancing early warning systems is a key priority. Each country highlights the need to raise awareness and educate stakeholders across diverse sectors, including public and private institutions, ministries, producers, laboratories, and universities. This ensures that all relevant parties are trained to provide early warnings and immediate reporting of suspicious cases.

3. Integrated Training Programs: Updating and integrating training programs to incorporate One Health principles is crucial. This involves developing specialized training for professionals, incorporating One Health into basic and higher education curricula, and conducting joint simulations to prepare for emergency situations. Continuous education and training for professionals and technicians are also prioritized.

4. Diagnostic Capacities: Strengthening diagnostic capacities is essential for early detection. Each country recommends developing and implementing national networks of health laboratories, integrating efforts across human, animal, and environmental health sectors. This includes enhancing laboratory networks and ensuring efficient sharing of critical information.

5. Communication and Coordination: Effective communication and coordination mechanisms are vital for timely reporting and response. Recommendations for improvement include mapping actors involved in outbreak reporting, establishing networks for reporting suspected cases, and integrating existing systems with decision algorithms. Ensuring interoperability of information systems and diagnostic networks promotes transparency and timely dissemination of data.

By focusing on these shared priorities—adopting a One Health approach, enhancing early warning systems, updating training programs, strengthening diagnostic capacities, and improving communication and coordination—Argentina, Brazil, and Peru have the opportunity to significantly improve their ability

to detect and manage zoonotic disease outbreaks. These integrated efforts underscore the importance of collaboration among diverse stakeholders to ensure robust and effective public health responses.

VIII. Group Work Findings: Discussion of Challenges and Recommendations to Strengthen National of Zoonotic Disease Outbreaks

Following the group discussions by country to prioritize challenges and develop recommendations to strengthen detection of zoonotic diseases, groups came back together to focus on best methods for increasing capacities for national-level reporting. The following sections outline the discussions of priority challenges and opportunities to strengthen reporting of zoonotic diseases at the national level, including a summary of shared priorities. Detailed findings of these discussions can be found in Appendix D.

VIII.i. Opportunities to Improve Country-Level Reporting of Zoonotic Disease Outbreaks: Argentina

The recommendations for strengthening the reporting of zoonotic diseases in Argentina emphasize a One Health approach and focus on enhancing the regulatory framework and improving coordination with educational institutions.

Regulatory Framework: The primary recommendation is to escalate ministerial resolutions into laws that implement protocols integrating relevant areas at national and jurisdictional levels. Activities include integrating existing reporting systems with decision algorithms into the national emergency monitoring system (SINAME) of the National System for Comprehensive Risk Management (SINAGIR). Stakeholders such as the Ministries of Health, Agriculture, Environment, Security, and the Cabinet of Ministers will work to create an integrated system for predicting, detecting, and reporting zoonotic events. Raising awareness among authorities and congressional committees, drafting amendments to law 27287 (SINAGIR), and socializing this law at all jurisdictional levels are crucial steps. Developing specific protocols for health emergencies under the One Health approach will ensure all relevant ministries have a unified response plan.

Coordination with Education: To address the lack of coordination, it is recommended to work with the Ministry of Education to modify curricula to include the One Health concept and train teachers to incorporate it into their lectures. This involves incorporating One Health into university curricula and conducting multidisciplinary simulations in faculties such as medicine, veterinary science, biology, law, and agricultural schools. Creating postgraduate programs that focus on One Health will develop specialized professionals. Communication and dissemination of the One Health concept, identifying "champions" in various sectors, and promoting the approach as an overarching framework for interdisciplinary work are key activities. Training public administration officers through existing platforms like INAP and FOPECAP will strengthen capacities across jurisdictions working within the One Health framework.

These recommendations highlight the importance of a cohesive One Health approach, integrating legal, educational, and procedural aspects to enhance the detection and reporting of zoonotic diseases in Argentina.

VIII.ii. Opportunities to Improve Country-Level Reporting of Zoonotic Disease Outbreaks: Brazil

The recommendations for improving the detection and reporting of zoonotic diseases in Brazil focus on three key areas:

Joint Mapping of Surveillance Actions Under the One Health Approach: This recommendation emphasizes the need for a comprehensive mapping of surveillance actions under the One Health approach. The implementation plan involves mapping work processes to identify potential interactions, needs, and resistances, and developing an integrated National Action Plan. This plan aims to consolidate surveillance actions across various sectors and ensure resource allocation from the presidency. The goal is to enhance collaboration among stakeholders such as MAPA, MMA, MS, and other institutions, resulting in more coordinated and effective disease surveillance and response.

Survey and Update Existing Training Programs to Include the One Health Approach: This recommendation highlights the importance of integrated training programs that incorporate the One Health approach. By surveying and updating existing training programs, professionals across human, animal, and environmental health sectors can be better equipped to manage and implement One Health actions. The plan includes developing comprehensive training programs for multipliers, integrating One Health into basic and higher education curricula, and conducting joint simulations for emergency preparedness. This initiative, involving ministries like MS, MAPA, MMA, MEC, and MCTI, aims to increase public awareness and ensure that professionals are well-prepared for emergencies.

Identify Systems and Functionalities for Interoperability: This recommendation addresses the need for interoperability between various data systems to ensure transparent and timely sharing of information. It includes identifying systems and functionalities for integration, conducting integrated health surveillance actions, and coordinating alert communications among different sectors. The plan emphasizes integrating laboratory networks across human, animal, plant, and environmental health to enhance the efficiency and responsiveness of health surveillance systems. Involvement of stakeholders such as MS, MAPA, MMA, MCTI, Civil Defense, and Brazilian universities ensures effective information sharing during emergencies.

Overall, these recommendations aim to enhance collaboration and coordination among various stakeholders, ensuring a robust and unified response to zoonotic disease outbreaks through a One Health approach. By focusing on joint mapping of surveillance actions, integrated training programs, and interoperability of data systems, Brazil can significantly improve its disease detection, reporting, and response capabilities. This integrated strategy strengthens the overall health system's capacity to effectively manage public health emergencies.

VIII.iii. Opportunities to Improve Country-Level Reporting of Zoonotic Disease Outbreaks: Peru

The recommendations for enhancing the reporting of zoonotic diseases in Peru emphasize a strategic integration of surveillance and communication mechanisms across various sectors using a One Health approach:

Strengthening Coordination of Surveillance Systems: This recommendation centers on conducting a comprehensive situational diagnosis of existing surveillance and detection systems for zoonotic diseases across the health, agriculture, environment, and production sectors. Key stakeholders including MINSA, MIDAGRI, MINAM, and PRODUCE, supported by international cooperation, are tasked with establishing robust coordination mechanisms and procedures. The expected outcome is a coordinated system that ensures efficient and timely notification of zoonotic diseases, enhancing the overall effectiveness of national health surveillance.

Developing Communication Mechanisms: The focus here is on improving intra- and intersectoral communication flows to bolster detection and reporting capabilities. Activities include analyzing current communication processes, identifying and establishing focal points across relevant ministries, and conducting periodic simulations and drills to test the response systems for zoonotic disease outbreaks. Furthermore, the development of a regulatory and normative framework specifically tailored for the detection and reporting of prioritized zoonotic diseases is recommended. These steps are designed to establish a comprehensive directory for institutional contacts, ensuring timely communication and a strengthened response capacity underpinned by a legally binding instrument with a One Health approach.

Overall, these structured recommendations aim to build a more effective and coordinated framework for detecting and reporting zoonotic diseases in Peru, ensuring all relevant stakeholders are well-prepared and aligned in their efforts to manage health risks associated with zoonoses efficiently.

VIII.iv. Shared Priorities for Strengthening Disease Reporting in Argentina, Brazil, and Peru

According to the group work presented by the workshop participants, Argentina, Brazil, and Peru share several critical priorities in enhancing their national-level reporting of zoonotic disease outbreaks. These priorities emphasize a unified approach across sectors to improve regulatory frameworks, training programs, system interoperability, and communication mechanisms.

1. *One Health Approach:* All three countries prioritize adopting a One Health approach, integrating human, animal, and environmental health sectors. This approach is fundamental in creating a cohesive strategy for predicting, detecting, and reporting zoonotic diseases.
2. *Strengthening Regulatory Frameworks:* Enhancing and unifying regulatory frameworks is essential. Recommendations include escalating ministerial resolutions into laws, integrating existing systems with national emergency monitoring frameworks, and developing specific protocols for health emergencies. These recommendations aim to ensure all relevant sectors are aligned and prepared for effective responses.
3. *Coordination and Training Programs:* Improving coordination among various sectors and updating training programs to incorporate One Health principles are crucial. This involves modifying educational curricula to include One Health, conducting multidisciplinary simulations, and developing postgraduate programs. Training public administration officers and professionals across sectors ensures a well-prepared workforce.
4. *Interoperability of Data Systems:* Achieving interoperability between different data systems is vital for transparent and timely information sharing. Each country focuses on integrating health surveillance and laboratory networks, ensuring efficient data flow and coordinated responses during emergencies.
5. *Enhancing Communication Mechanisms:* Developing and strengthening communication mechanisms within and between sectors is a shared priority. This includes mapping actors involved in outbreak reporting, establishing networks for reporting suspected cases, and creating comprehensive directories for institutional contacts. Conducting periodic simulations and drills ensures that communication systems are effective and that stakeholders are well-prepared.

By focusing on these overlapping priorities—adopting a One Health approach, strengthening regulatory frameworks, enhancing coordination and training programs, improving data system interoperability, and developing robust communication mechanisms—Argentina, Brazil, and Peru have the opportunity to significantly enhance their national-level reporting of zoonotic disease outbreaks. These integrated efforts underscore the importance of collaboration among diverse stakeholders, ensuring a robust and unified response to public health threats.

IX. Group Work Findings: Discussion of Challenges and Recommendations to International Reporting of Zoonotic Disease Outbreaks

Following the group discussions by country to prioritize challenges and develop recommendations to strengthen detection and reporting of zoonotic diseases at the national level, participants were divided into three groups with mixed representation by country and sector to focus on best methods for increasing capacities for reporting of outbreaks at the international level. This section outlines the discussions of priority challenges and opportunities to strengthen reporting of zoonotic diseases at the international level. Detailed findings of these discussions can be found in Appendix E.

The recommendations to strengthen international reporting of zoonotic diseases through a One Health approach focus on enhancing detection, investigation services, and intersectoral communication. The main challenges identified and their corresponding recommendations include:

Strengthening Local Surveillance and Resources

To address the challenge of limited access to detection and investigation services for small family agriculture producers, companion animals, aquatic animals, and wildlife, particularly in border areas, it is recommended to strengthen local surveillance teams and resources. This includes integrating wildlife veterinary services with primary health care through One Health teams. Additionally, expanding the capacities and speed of information transmission at national, regional, and international levels is crucial. To support this, community training programs on One Health topics should be developed, and local infrastructure should be enhanced by identifying weaknesses in communication programs.

The implementation plan for this recommendation involves evaluating local infrastructure and communication programs to identify weaknesses, developing community training programs on One Health topics, and expanding local surveillance capacities and resources by integrating them with primary health care. These actions, involving stakeholders from all countries, aim to promote and incorporate a One Health vision at the local level, ultimately strengthening local surveillance and resources.

Establishing Crisis Management Committees

To improve the management of health crises, it is recommended to establish a national crisis committee that includes international experts. This committee should form a permanent intersectoral technical team for crisis management, involving representatives from health, agriculture, and environmental sectors. Additionally, creating a formal communication commission to produce consensus-based pieces with international health organizations is necessary.

The implementation plan includes convening existing focal points to align recommendations from international organizations with national interests in each matter. Nomination of crisis communication experts from each country is also essential. Establishing a centralized communication platform for information sharing between agencies and international partners will ensure improved intersectoral and international communication. These actions, involving international health organizations and ministries of health, will provide a national discussion platform for recommendations during emergencies and improve communication processes.

Implementing One Health Risk Analyses (ARUS)

To address the deficit in health risk analyses for large infrastructure projects, it is recommended to implement mandatory One Health Risk Analyses (ARUS) at all stages, from conception to operation and subsequent monitoring. Developing technical guidelines and specific standards for ARUS in infrastructure works is also crucial. Training professionals in relevant fields on ARUS and One Health principles will ensure comprehensive risk assessments with an environmental impact perspective.

The implementation plan includes developing a Reference Guide for ARUS in infrastructure projects and including experts in risk assessments. Informing and training local response teams in affected communities will further enhance preparedness and response capabilities. These actions will result in comprehensive risk assessments with a One Health approach and well-trained local response teams.

Promoting One Health Approach

Raising awareness and disseminating the One Health approach among stakeholders, including ministers and technical teams, is essential. Integrating the One Health approach into subregional mechanisms and international agreements will promote a unified strategy for health security. Highlighting the One Health approach at high-level meetings, such as the Andean Health Ministers meeting (REMSAA), will further emphasize its importance.

The implementation plan involves raising awareness and disseminating One Health concepts among stakeholders, implementing transboundary sanitary zones in border areas, and establishing a work plan for key issues and agreements between countries. These actions, involving ministers and technical teams from various sectors, will promote regional detection and reports from a One Health perspective and ensure universal access to health systems.

Improving Intersectoral and International Communication

To enhance communication and collaboration, it is recommended to map actors and institutions involved in One Health, along with flowcharts and legislation. Stratifying events according to risk levels will ensure appropriate responses. Establishing political agreements between countries to share real-time data and metadata and articulating the functioning of relevant actors for One Health, will improve communication and collaboration.

The implementation plan includes mapping actors and institutions involved in One Health, stratifying events according to risk levels, establishing political agreements between countries, and articulating the functioning of relevant actors. These actions, involving various sectors and decision-making areas, will improve intersectoral and international communication, ensuring timely and effective responses.

Enhancing Data Sharing and Transparency

Standardizing data collection methods across sectors and countries is crucial for consistent and reliable data. Promoting transparency in reporting health incidents and outbreaks will foster trust and collaboration. Regular data sharing and joint initiatives will further enhance collaboration and transparency.

The implementation plan involves developing standardized data collection templates and guidelines, establishing transparent reporting protocols for health incidents, and organizing regular data sharing meetings and workshops. These actions, involving all sectors and international organizations, will result in consistent and reliable data collection, improved transparency, and enhanced trust and collaboration.

Ensuring Adequate Funding and Training

To ensure adequate funding for health security initiatives, it is recommended to advocate for increased budget allocations. Providing regular training and capacity building for health workers and emergency responders will maintain preparedness. Developing a resource-sharing mechanism for crisis situations will ensure efficient use of resources.

The implementation plan includes advocating for increased budget allocations for health security, conducting regular training sessions and simulations for health workers, and establishing resource-sharing agreements for emergencies. These actions, involving ministries of health, finance, and international

organizations, will ensure adequate funding, well-trained health workers, and efficient resource use during crises.

By implementing these recommendations and their corresponding action plans, countries can strengthen their health security frameworks, improve surveillance and response capabilities, and promote a unified One Health approach to address zoonotic disease outbreaks and other health threats.

X. Results and Analysis

The workshop was meticulously structured to enable participants to evaluate existing formal and informal mechanisms for zoonotic disease outbreak detection and reporting within each country and the broader region. The primary aim was to formulate recommendations for strengthening or establishing new formal policies and procedures to ensure an efficient and coordinated One Health response to zoonotic disease outbreak events.

Participants presented their findings from small group discussions to the larger assembly in plenary sessions. This format facilitated feedback, discussion, and the further development of collaborative solutions. The discussions focused on identifying opportunities for continued collaboration, even in the absence of significant funding options. The content of this report reflects the discussions and presentations made during the workshop, demonstrating that the workshop's objectives were achieved. Participants were highly engaged, actively contributing to the discussions and committed to developing actionable recommendations.

Despite all groups using the same guiding documents and receiving the same instructions, the results varied, reflecting the diverse experiences and perspectives of the countries and organizations involved. This divergence was viewed positively, as it enriched the pool of proposals and recommendations.

At the conclusion of the workshop, the preparation of this report was communicated to participants for their input and feedback on the structure and audience. Participants recognized the report's utility as a tool to present to their authorities, encouraging the implementation of proposed improvement measures and recommendations. The participants hoped that the findings presented in the report could provide unique perspectives on how to increase One Health capacities at national and regional levels for coordinated and effective detection and reporting of zoonotic disease outbreaks.

Due to the workshop's design and methodology, participants shared that they were able to successfully build collaborative relationships across sectors and countries. This collaboration was key to developing the desired One Health recommendations to strengthen national and regional detection and reporting of zoonotic disease outbreaks. The discussions were extremely productive, and participants left the workshop with concrete plans to begin work to address the identified challenges and maintain ongoing communication and collaboration.

Despite the workshop's successes, several limitations were identified:

1. *Variation in Group Results*: Although the diverse results were beneficial for creating a broad spectrum of recommendations, they also highlighted the variability in the current capabilities and approaches of different countries and organizations. This variability could pose challenges in implementing standardized regional policies and procedures.
2. *Resource Constraints:* Many recommendations require significant resources, including funding, trained personnel, and infrastructure improvements. Securing these resources could be challenging, particularly in countries with limited financial capabilities.
3. *Communication and Coordination:* While the workshop emphasized the importance of effective communication and coordination, existing communication channels sometimes hindered the timely sharing of critical information. Developing formalized, reliable communication mechanisms across sectors and countries remains a critical challenge.
4. *Policy and Regulatory Frameworks*: The lack of unified policy and regulatory frameworks across the region is a significant barrier. Differences in national policies and regulations can impede the implementation of a coordinated regional response to zoonotic disease outbreaks.

5. *Sustaining Engagement and Collaboration:* Maintaining the high level of engagement and collaboration seen during the workshop over the long term is challenging. Continuous efforts and follow-up activities are essential to sustain the momentum and ensure the implementation of the recommendations.
6. *Training and Capacity Building:* While training programs and capacity-building initiatives were prioritized, current training programs' effectiveness varied across countries. Ensuring consistent, high-quality training that incorporates One Health principles is essential but challenging.

Addressing these limitations will require sustained effort, investment, and collaboration among all stakeholders involved. The workshop's outcomes provide a strong foundation, but continuous engagement and resource mobilization are crucial to achieving the long-term goals of strengthening zoonotic disease detection and reporting capabilities in the region.

XI. Conclusions and Recommendations

The *Regional Workshop to Strengthen the Detection and Reporting of Zoonotic Disease Outbreaks*, held in Paracas, Peru, from July 2-5, 2024, marked a pivotal moment in the collaborative efforts of participants from Argentina, Brazil, and Peru to develop recommendations to strengthen their capacities to detect and report zoonotic disease outbreaks. Organized by Health Security Partners (HSP) with crucial support from regional partners, the workshop convened experts from human, animal, wildlife, and environmental health sectors, providing a platform to assess existing detection and reporting mechanisms and to formulate comprehensive recommendations for improvement.

Participants engaged in a dynamic series of group discussions and tabletop exercises, simulating various zoonotic disease outbreak scenarios. These exercises underscored the critical importance of implementation of the One Health approach, which integrates efforts across sectors to ensure a cohesive and coordinated response to zoonotic disease outbreaks. The workshop yielded several key recommendations aimed at bolstering early warning systems, enhancing diagnostic capacities, updating training programs, and strengthening communication and coordination mechanisms.

Conclusions

The workshop succeeded in fostering a collaborative environment where participants could share their experiences, discuss challenges, and develop actionable recommendations to strengthen national and regional detection and reporting of zoonotic disease outbreaks. The active engagement and commitment of participants throughout the workshop underscored the collective dedication to improving public health responses to zoonotic disease threats.

Discussions were highly productive, with participants demonstrating a strong commitment to the utility of implementing the proposed recommendations. The divergent results from group discussions, reflecting the unique experiences and perspectives of each country, was viewed positively as they enriched the assembly of proposals and recommendations.

Participants left the workshop with a hope that the recommendations they had developed might provide useful points of reference to policymakers and stakeholders hoping to build on existing strengths to improve countries' capacities to detect and report zoonotic diseases. Collaborative relationships, such as those built during the workshop across sectors, and countries will be instrumental in addressing the identified challenges and implementing the recommendations. Of highest importance is a commitment to ongoing collaboration and the adoption of a One Health approach highlights the collective resolve to improve public health infrastructure and response mechanisms.

By focusing on these shared priorities and taking note of the workshop's recommendations, stakeholders in Argentina, Brazil, and Peru are well-positioned to enhance their abilities to detect, manage, and respond to zoonotic disease outbreaks effectively. The hope is that together, we can work to ensure a robust and unified response to public health threats, contributing to the global effort to mitigate the impact of zoonotic diseases and improve health security for all.

Recommendations

The following recommendations have been developed based on the detailed discussions and group work carried out during the workshop. These recommendations aim to address the challenges and gaps identified in the detection, reporting, and response to zoonotic disease outbreaks across Argentina, Brazil, and Peru. By adopting a collaborative and integrated One Health approach, these recommendations seek to strengthen national systems and foster better coordination between sectors and countries to ensure a more robust response to zoonotic disease threats.

1. *One Health Approach:* The emphasis on the integration of human, animal, and environmental health sectors is foundational to a robust response to zoonotic diseases. All three countries recognized the necessity of a unified strategy for predicting, detecting, and reporting zoonotic diseases, fostering collaboration among diverse stakeholders. This approach should be formalized by each country's government authorities through regulations and norms that will facilitate intersectoral collaboration and implementation of shared policies, strategies and interventions.
2. *Early Warning Systems:* Enhancing early warning systems emerged as a critical priority. Raising awareness and educating stakeholders across various sectors are essential steps to ensure prompt and accurate reporting of suspicious cases, thereby enabling timely interventions to prevent the spread of diseases.
3. *Integrated Training Programs:* The need to update and integrate training programs to incorporate One Health principles was highlighted. This includes developing specialized training for professionals, integrating One Health concepts into educational curricula, and conducting joint simulations to prepare for emergency situations. Continuous education and training for professionals and technicians are crucial to maintaining a high level of preparedness.
4. *Diagnostic Capacities:* Strengthening diagnostic capacities is paramount for early detection and response. Recommendations include developing and implementing national networks of health laboratories, integrating efforts across human, animal, and environmental health sectors, and ensuring efficient sharing of critical information to facilitate coordinated responses.
5. *Communication and Coordination:* Effective communication and coordination mechanisms are vital for timely and accurate reporting and response. Mapping actors involved in outbreak reporting, establishing networks for reporting suspected cases, and integrating existing systems with decision algorithms are key activities. Ensuring interoperability of information systems and diagnostic networks promotes transparency and timely dissemination of data. There is need to go from informal communications to formal and sustainable mechanisms across sectors and countries. Risk communication is another important topic to be addressed to receive information from and to provide timely and trustable feedback to the community.

In summary, the recommendations outlined above emphasize the need for enhanced collaboration across human, animal, and environmental health sectors, improved communication and coordination mechanisms, and the strengthening of early warning and diagnostic systems. By implementing these recommendations, countries in the region can better prepare for and respond to zoonotic disease outbreaks, contributing to stronger national and regional health security. It is crucial that these actions are taken forward with sustained commitment and resources to build resilient systems capable of addressing future public health challenges.

Appendix A: Ideal Workshop Participant Profiles

The player profile for the Tabletop Exercise was someone directly involved in executing existing disease outbreak detection and reporting mechanisms. Since this exercise is supposed to assess existing plans, policies, and procedures for outbreak detection and reporting, it is suggested that the personnel selected to play in the exercise be of operational level, with specific knowledge of how outbreak detection and reporting is supposed to work. Ideally, players would be of middle management to senior level personnel who not only know how the plan is supposed to work, but also an idea of the bigger picture of Ministry operations, as well as operations of partner organizations and/Ministries.

Detection can be defined as combining specific areas of public health to "detect" when something is happening that may require action. Looking at how surveillance data, laboratory reporting, and other information is analyzed can show us that a potential outbreak may be happening. Detection is reliant upon trained epidemiologists and integrated data systems. Detection is key, but so is notifying the correct authorities for investigation. Reporting requires clear reporting structures and data systems for reporting from clinical and laboratory facilities to public health authorities and their partners, especially in a potential zoonotic disease outbreak.

It is suggested that the follow staff positions within the attending countries be players in the TTX:

1. IHR Focal Point
2. Surveillance of Zoonotic Diseases Lead – Ministry of Health and Agriculture
3. Laboratory Lead (Human Health and Animal) – Director of National Reference Lab or close subordinate
4. Emergency Operations Lead (Ministry of Health for floods/disasters/outbreaks, and Agriculture, if present)
5. Veterinary Epidemiologist – Ministry of Environment and/or Agriculture focusing on zoonotic diseases
6. Public Health Epidemiologist – Decision maker in public health, for example, head of CDC
7. Head of Zoonotic Diseases in Human and Animal Health (public health, health management)
8. Ministry of Foreign Affairs rep that supports international coordination/cooperation for health and medical
9. Ministry of Environment rep that supports potential animal and human health outbreak response.

Personnel selected should be of senior level enough to understand what happens during the detection and reporting of an outbreak, but also understand the bigger picture of how the rest of their organization would operate according to existing plans, policies, and procedures.

Appendix B. Detailed Findings of TTX Discussions Regarding Activities Conducted in Response to an Evolving Zoonotic Disease Outbreak and Initial Identification of Challenges to Detection and Reporting

The following tables outline in detail the group discussions, by country, regarding the detection and reporting activities that might be taken at local, national and international levels to address an evolving zoonotic disease outbreak scenario.

Argentina

Discussion of Detection Activities

Discussion Area	*Key Points*
Key Detection Activities	- Animal sector: Quarantine at the destination, sample sending, interdiction of establishment, and protocol activation based on results.
	- Human, wildlife, and environmental sector: Detection activities in humans after animal disease detection, epidemiological and clinical surveillance, wildlife monitoring.
Relevant Policies and Procedures	- Formal communication: Sick animal detection by private veterinarians to local and central SENASA.
	- Informal communication: Among veterinarians (e.g., via WhatsApp).
	- Notification of other sectors by SENASA upon etiological detection.
Policies' Promotion of Coordination	- Policies and procedures do not use a One Health approach.
Areas for Strengthening Coordination	- Alert local health authorities about suspected sick animals for preventive health measures, improve cross-sectoral information flow.
	- Local health authorities do not immediately learn about suspected animal diseases or sample shipments.
	- Notification systems are not interoperable: SENASA can access SNVS, but human health cannot access the animal production system.

Discussion of National Reporting Activities

Discussion Area	*Key Points*
Key National Reporting Activities	- SENASA local notifies SIGSA, which communicates to national SENASA. SENASA declares health emergency and coordinates with Health, Environment, National Parks, and private sectors.
	- Health informs jurisdictional Ministries of Health, coordinates work methods for suspected human cases.
	- Health and SENASA issue epidemiological alerts, case definitions, sample collection, and prevention/control measures.
	- Jurisdictional notification via outbreak report form and SNVS (suspicion, confirmation, update, and closure).

	- New events are created in SNVS for official notification and epidemiological surveillance of human cases.
	- Risk communication through social media and other media outlets.
Relevant Policies and Procedures	- National Law 15.464 for mandatory disease notification.
	- SENASA Resolution 153/2021 for mandatory disease notification and National Law 3959 for health police.
	- National System for Comprehensive Risk Management (SINAGIR), National Law 27.287 of 2016.
	- SENASA Resolution 779/1999 for health emergencies and contingency plans.
	- Ministerial Resolution 3846/2023 for preparation and response to public health events of national or international importance with epidemic/pandemic potential.
	- Situation room coordinated by Health, involving all sectors for human cases, with jurisdictional authorities participating.
Policies' Promotion of Coordination	- Intersectoral work becomes more concrete during health emergencies, mainly between Health and SENASA.
	- The environmental sector is the most challenging to involve.
	- One Health approach is not standardized (informal mechanism exists for AMR).
Initial Areas to Strengthen National Reporting	- Improve national alert times and recommendations for jurisdictions.
	- Some jurisdictions do not notify the system beyond the legal framework (federal country).
	- Upgrade ministerial resolutions to laws to implement protocols involving relevant national and jurisdictional areas.
	- Define missions and functions within the environmental sector: incorporate a conservationist vision and One Health approach.
	- Coordinate with the Ministry of Education to modify degree programs to include One Health concept or train teachers to incorporate it themselves.
	- Ensure interoperable reports between sectors.
	- Improve coordination among all components within the Ministry of Health.

Discussion of International Reporting Activities

Discussion Area	*Key Points*
Key International Reporting Activities	- SENASA notifies the World Organization for Animal Health (WOAH), commercial partners, and CVP Cono Sur (latter two are not mandatory).
	- International Health Regulations.
	- National Focal Point notifies PAHO/WHO and involved countries.
	- National Directorates of International Relations in Ministries contact other countries.

	- Informal and formal reporting among technical area representatives (e.g., zoonoses, SENASA).
Relevant Policies and Procedures	- Coordination with the Ministry of Foreign Affairs for enhanced surveillance with external funds at border events.
	- Notification due to membership in PAHO/WHO and WOAH.
	- MERCOSUR.
	- Communication between countries.
Policies' Promotion of Coordination	- Each country notifies its international organizations independently. No unified intersectoral reporting exists.
Initial Areas to Strengthen International Reporting	- Involve other sectors beyond Health, such as Foreign Affairs, Security, Tourism, and Economy.
	- International One Health documents should be used by countries at national and local levels and ideally be available in each country's language.
	- Facilitate international documents and disseminate them to countries through a formal circuit.

Brazil

Discussion of Detection Activities

Discussion Area	*Key Points*
Key Detection Activities	- Producer -> Local Veterinarian/Farm -> Official Veterinary Service (assesses suspicion) -> Sampling -> LFDA (neurological disease - Rabies, TSE ~10 days).
	- Any other action depends on the diagnosis; if not a program or exotic disease, the producer is responsible.
	- MMA may call CENAP - ICMBio/MMA if requested by state agricultural defenses, rarely by environmental secretariats.
	- UVZ or CCZ may be activated by SISS-GEO (Fiocruz/MS).
	- Monitoring of rumors by CIEVS can raise the number of deaths of different animal species and generate a demand for information by MS to MAPA and/or MMA.
	- Evaluate the possibility/need to establish an interinstitutional COE.
Relevant Policies and Procedures	- Brazil, as a signatory of WOAH and WHO, follows policies and procedures published in regulations, standards, and ordinances.
	- Depending on the pathogen, Brazil notifies WOAH and may suspend exports (see IN No. 50 of 24/09/2013 - MAPA and Decree No. 24.548 of 1934 - Animal Health Defense).

Policies' Promotion of Coordination	- Coordination depends on the pathogen, emergency, and risk to human and animal health. Sensitivity for non-directly linked wildlife is fragile.
	- GT-One Health was created in 2019 at MS; in 2024, the Interinstitutional Technical Committee of One Health was established, coordinated by MS with 20 institutions involved.
	- Reliance on pre-existing algorithms limits diagnostic expansion (sample type and preservation).
	- High cost of inputs.
	- Lack of an integrated information platform.
Initial Areas to Strengthen Detection Coordination	- Integrated training for One Health approach.
	- Integration of alert and data traceability systems.
	- Communication with neighboring countries.
	- Strengthening diagnostic networks with integrated information.

Discussion of National Reporting Activities

Discussion Area	*Key Points*
Key National Reporting Activities	- Health Surveillance: SINAN, InfoGripe, SIVEP-Gripe (notification forms), SIS-Geo
	- Sentinel surveillance for respiratory viruses
	- Hospital surveillance (medical records)
	- Municipal epidemiological surveillance
	- Worker Health Surveillance
	- Laboratory surveillance network
	- Environmental Health Surveillance
	- CIEVS: communication and response coordination
	- Animal Health Surveillance
	- Email notifications between different sectors
Relevant Policies and Procedures	- List of notifiable diseases for animal and human health sectors
	- Ministry information systems (MS, MMA, MAPA) not integrated
	- International Health Regulations (IHR) decision algorithm for declaring public health events of international concern
	- Policy for training and simulated emergency health drills
	- Field epidemiology program applied to SUS
	- Public health emergency training program

	- Interministerial health surveillance guides for diseases (Rabies, Glanders, Bovine Brucellosis, Avian Influenza, West Nile, EEEV)
	- Contingency plans
Policies' Promotion of Coordination	- Policies promote coordination within thematic areas of the same institution, but not between different ministries
	- Activities restricted among peers
	- Lack of data integration
	- Interinstitutional Technical Committee of One Health, coordinated by MS with 20 institutions, aims to foster integration
Initial Areas to Strengthen National Reporting	- Integrated training for the One Health approach to detect unusual events and various health conditions
	- Increase sensitivity of surveillance system and disease suspicion
	- Integrated rumor notifications
	- Effort to harmonize notification systems
	- Generate georeferenced data to predict the spread of health conditions in humans and wildlife
	- Integrate civil defense with health across all three government levels
	- Strengthen laboratory surveillance network (genomics)
	- Expand contingency plans

Discussion of International Reporting Activities

Discussion Area	*Key Points*
Key International Reporting Areas	- Animal Health: WAHIS - WOAH, PANAFTOSA/PAHO, animal health authority of trading partner countries
	- Human Health: International Health Regulations, PAHO - WHO, sharing and requesting information from neighboring countries
Relevant Policies and Procedures	- International Health Regulations
	- Bilateral agreements
	- Amazon Cooperation Treaty Organization (ACTO)
	- Mercosur
	- Quadripartite Alliance
	- Convention on Biological Diversity (CBD) Agreement
	- Nagoya Protocol - sharing information and benefits
	- SPS Agreement on Sanitary and Phytosanitary Measures - WTO

	- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
	- UN Convention on Chemical and Biological Weapons (CPAB)
	- Cartagena Protocol - protecting biodiversity from GMOs
	- Brazil's G20 Presidency (One Health, Long Covid, Global Medicine Alliance)
	- 100-Day Mission - medical measures for pandemics
Policies' Promotion of Coordination	- Pandemic/epidemic treaty did not advance due to lack of mutual benefits and conflicts of interest
Initial Areas to Strengthen International Reporting	- Current mechanisms are believed to support information dissemination among countries
	- Response time needs improvement; lack of data and metadata standards for system interoperability

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Peru

Discussion of Detection Activities

Discussion Area	*Key Points*
Key Detection Activities	- Health control of livestock for human consumption at entry points.
	- Health status and exclusion of notifiable diseases checked in import certificates.
	- 100% biological sampling of livestock for screening of notifiable animal diseases.
	- Quarantine and additional biological sampling for sick animals to expand etiological studies.
	- Not all livestock owners or veterinarians report sick animals.
	- SENASA surveillance is conducted only upon formal notification of sick animals via phone, APP, WhatsApp.
	- For wildlife, communication with park rangers and regional forestry and wildlife authorities to enhance surveillance of unusual sick animal events.
Areas to Strengthen Coordination for Detection	- Communicate disease occurrences in animals to MINSA.
	- Limited disease diagnostics; lack of kits for all diseases.
	- Informal breeding and trading complicate tracking sick animals.
	- No compensation for loss of sick animals.

	- Centralized laboratories; lack of wildlife analysis labs.
Relevant Policies and Procedures	- SENASA regulates surveillance of notifiable diseases in livestock for consumption:
	1. List of Notifiable Diseases: Includes diseases of interest for both animal and public health.
	2. Mandatory Notification: Veterinarians, producers, and anyone who suspects or confirms a notifiable disease must report it immediately to SENASA.
	3. Surveillance and Control Plans.
	4. Inspections and Monitoring: SENASA conducts periodic inspections at farms, slaughterhouses, markets, and other critical points.
	5. Diagnostic Laboratories: SENASA has certified labs for diagnosing notifiable diseases.
Policies' Promotion of Coordination	- Greater socialization of notification tools like APP and social media (WhatsApp).
	- One Health approach promoting collaboration across human health, animal health, and environmental sectors for optimal public health outcomes.
	- Multisectoral Committees.
	- Notification and Surveillance System between SENASA and MINSA.

Discussion of National Reporting Activities

Discussion Area	*Key Points*
Key National Reporting Activities	- Animal Sector: SENASA offices issue notifications via the SICSA system. Laboratory analysis follows, with reports through SIGSE, SERNANP, and SERFOR internal procedures.
	- SENASA Central Directorate, SERFOR, and SERNANP report the event to senior management and MINSA via email.
	- In cases of animal deaths with negative results for notifiable diseases, animals are immobilized and samples sent to specialized labs or academia under coordination with INS.
	- Human Sector: Notifiable diseases or unusual diseases and epizootics in humans are reported via SIEpi-Brotes and NOTI-Web from healthcare establishments (EESS).
	- Local labs can diagnose human notifiable diseases; specialized studies (metagenomic sequencing) are referred to the National Level (INS).
Relevant Policies and Procedures	- Animal Health: Issuance of local alerts/communications, activation of the Multisectoral Committee for Zoonosis Prevention and Control.

	- Human Health: Issuance of local alerts, activation of the GERESA Technical Committee with involved components, investigation and intervention activities, activation of the Multisectoral Committee for Zoonosis Prevention and Control.
Policies' Promotion of Coordination	- Yes: Comprehensive guide for avian influenza response (technical document).
	- No: Lack of approved interministerial normative documents, technical documents for other zoonotic diseases with public health importance, national One Health policy, and a Multisectoral Strategic Plan.
Initial Areas to Strengthen National Reporting	- Strengthen the capacities of Animal Health laboratories.

Discussion of International Reporting Activities

Discussion Area	*Key Points*
Key International Reporting Activities	- Animal Health: SENASA notifies WOAH of zoonotic events impacting public health.
	- Human Health: The National Epidemiology Center, acting as the Peru Liaison Center, notifies PAHO/WHO under IHR.
	- Communication is established with Liaison Centers of neighboring countries with similar situations.
	- Biological samples are sent to specialized regional or national labs for analysis, with aliquots sent to International Reference Centers directly or via PAHO.
Relevant Policies and Procedures	- International notification of zoonotic diseases in Peru is regulated to ensure a rapid and coordinated response to outbreaks affecting animal and human health.
	- Regulatory Framework:
	- International Health Regulations (IHR 2005).
	- General Health Law (Law No. 26842): Defines responsibilities of MINSA and other entities in disease surveillance and control.
	- Animal Health Law (Law No. 30597): Defines SENASA's responsibilities in animal disease surveillance and control, including zoonotic diseases.
	- Law Strengthening MINSA in Epidemiological Surveillance (Law No. 31961).
	- Involved Entities: Ministry of Health (MINSA), National Agrarian Health Service (SENASA), and National Institute of Health (INS).
Policies' Promotion of Coordination	- Formal Procedures: International cooperation agreements, Multisectoral Commission on Zoonosis Prevention and Control working on guides and procedures for some zoonoses (avian influenza and yellow fever).

	- Informal Procedures: Internal communications with various sectors such as the Ministry of Foreign Affairs and international experts.
	- In border regions, there is direct communication between local health authorities of neighboring countries.
Initial Areas to Strengthen International Reporting	- Develop a national multisectoral One Health policy.
	- Establish official intersectoral communication channels that include all relevant sectors.
	- Establish the mandate of the National Epidemiology Center (CNE) for consolidating surveillance across different sectors.
	- Standardize protocols for the international referral of samples.

Appendix C. Detailed Findings of the Group Discussions of Challenges and Recommendations to Strengthen National Detection of Zoonotic Disease Outbreaks

The following tables outline in detail the group discussions, by country, regarding the priority challenges and corresponding recommendations identified to strengthen detection of zoonotic disease outbreaks at the country level. This table format organizes the activities, stakeholders, and outcomes clearly for each challenge and recommendation.

Argentina

Challenge and Recommendation 1
Challenge: Early warning system for sick animals
Recommendation: Formalize and streamline information flow to local health authorities for early preventive measures
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Raise awareness and train stakeholders	Public and private institutions, ministries of health, agriculture, and environment, producers, laboratories, veterinary colleges, tourism chambers, universities	Increased awareness and immediate reporting
Coordinate between public and private sectors	Public and private institutions, ministries of health, agriculture, and environment, producers, laboratories, veterinary colleges, tourism chambers	Agreements and coordination between sectors
Review and integrate reporting systems	Technical areas of ministries of health, agriculture, and environment at all levels	Integrated detection and reporting systems
Simplify reporting with a One Health perspective	Ministries of health, agriculture, and environment, external advisors	Developed and strengthened mobile applications
Strengthen environmental surveillance	Public and private institutions, ministries of health, environment, science and technology, and water providers	Early warnings of agents present in the environment
Promote professional ethics and legal responsibilities	Producers, laboratories, veterinary colleges, private clinics, professional associations, tourism chambers	Improved reporting of suspected cases
Incorporate One Health professionals into registration systems	Veterinarians, wildlife agents, veterinary and environmental laboratories, environmental workers	Expanded detection network and improved notification

Challenge and Recommendation 2
Challenge: Immediate notification to local health authorities
Recommendation: Ensure real-time communication of suspected animal diseases to take appropriate measures
Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Map local and jurisdictional actors involved in outbreak reports	Identified actors from mapping	Real-time information for local levels
Create a network for reporting suspected cases	Identified actors from previous step	
Communicate cases from local networks to provincial and national levels	Municipalities, jurisdictions, and nation	Bidirectional communication between local, provincial, and national levels
Integrate existing systems with decision-making algorithms	Ministries of health, agriculture, and environment at national and jurisdictional levels	Unified access to information across all levels
Establish high-surveillance zones at borders	Public and private sector institutions in strategic areas	Early warning and detection of events and possible entry into jurisdictions
Strengthen IT infrastructure	All One Health ministries	Sustainable and sovereign operating systems

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Brazil

Challenge and Recommendation 1
Challenge: Analysis of work processes and mapping of assignments for a One Health approach
Recommendation: Joint mapping of surveillance actions performed in One Health
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Map work processes	MAPA, MMA, MS, and other institutions	Identification of potential interactions, needs, and resistances
Develop an integrated work plan (National Action Plan)	MAPA, MMA, MS, and other institutions	Integrated actions implemented
Submit the plan to the presidency	MS	Ensure resources for the implementation of the National Action Plan in the PPA

Challenge and Recommendation 2
Challenge: Integrated training for a One Health approach
Recommendation: Survey existing training programs among institutions to include the One Health approach
Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Survey existing training programs among institutions	MS, MAPA, MMA, and other institutions	Inclusion of the One Health approach in existing training programs
Develop integrated training programs for multipliers	MS, MAPA, MMA, MEC, MCTI, and other institutions	Professionals trained for management and application of One Health actions
Insert the One Health approach in basic and higher education curricula	MEC	Increase public awareness
Develop joint simulations	MS, MAPA, MMA, Civil Defense, and other institutions	Professionals trained for emergency situations

Challenge and Recommendation 3
Challenge: Integration of information/alert systems and diagnostic networks
Recommendation: Identify various systems, functionalities, and data distribution for interoperability
Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Identify various systems, functionalities, and data distribution	MS, MAPA, MMA, MCTI, and other institutions	Integration and transparency of data
Conduct integrated health surveillance actions in human, animal, plant, and environmental health	MS, MAPA, MMA, and other institutions	Actions developed in territories in a timely manner
Integrate alert communication actions (climatic, public health, and others) among involved teams	Civil Defense, Vigidesastres network (DEMSP/SVSA/MS), MAPA	Ensure timely alerts for decision making
Integrate human, animal, plant, and environmental laboratory networks	Laboratory networks and Brazilian universities	Sharing of emergency information

Peru

Challenge and Recommendation 1
Challenge: Limited diagnostic capacity for the detection of zoonotic diseases in the animal health sector
Recommendation: Develop a national multisectoral health policy with a One Health approach and a Multisectoral Strategic Plan for integrated surveillance with a One Health focus. Strengthen the diagnostic capacity for zoonotic diseases in animal health.
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Implement a national network of animal health laboratories	PCM, MEF, MIDAGRI, MINAM, MINSA, PRODUCE, health commission of Congress, private sector, academia	Proposal for a National Animal Health Laboratory Network
Strengthen the national animal health surveillance network	MIDAGRI, MINAM, MINSA, PRODUCE, private sector, academia	Implement the wildlife animal health surveillance network
Develop the national multisectoral health policy with a One Health approach	PCM, MEF, MIDAGRI, MINAM, MINSA, MRE, MINEM, PRODUCE, health commission of Congress, private sector, academia, cooperatives	Draft of the national multisectoral policy with a One Health focus
Develop a Multisectoral Strategic Plan for integrated surveillance with a One Health focus	PCM, CEPLAN, MEF, MIDAGRI, MINAM, MINSA, PRODUCE, health commission of Congress, private sector, academia	Draft of a Multisectoral Strategic Plan with a One Health focus

Challenge and Recommendation 2
Challenge: Insufficient trained human resources for the detection of zoonotic diseases
Recommendation: Analyze the gaps in trained resources for the detection of zoonotic diseases. Promote continuous education and training of professionals and technicians within the One Health framework. Include these elements in sectoral strategic plans under the One Health approach.
Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Analyze the gaps in trained resources for the detection of zoonotic diseases	MIDAGRI, MINSA, MINAM, PRODUCE	Diagnosis of gaps in trained resources for zoonotic disease detection
Promote continuous education and training of professionals and technicians within the One Health framework	MIDAGRI, MINSA, MINAM, PRODUCE, MINEDU, public and private academia, ENAP, professional colleges	Professionals and technicians trained for zoonotic disease detection with a One Health focus
Incorporate the One Health approach in sectoral strategic plans	MIDAGRI, MINSA, MINAM, PRODUCE, MEF, CEPLAN	Sectoral strategic plans with a One Health focus

Challenge and Recommendation 3
Challenge: Limited integration of information/alert systems and diagnostic networks
Recommendation: Identify various systems, functionalities, and data distribution for interoperability.
Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Identify various systems, functionalities, and data distribution	MS, MAPA, MMA, MCTI, and other institutions	Integration and transparency of data
Conduct integrated health surveillance actions in human, animal, plant, and environmental health	MS, MAPA, MMA, and other institutions	Actions developed in territories in a timely manner
Integrate alert communication actions (climatic, public health, and others) among involved teams	Civil Defense, Vigidesastres network (DEMSP/SVSA/MS), MAPA	Ensure timely alerts for decision-making
Integrate human, animal, plant, and environmental laboratory networks	Laboratory networks and Brazilian universities	Sharing of emergency information

Appendix D. Detailed Findings of the Group Discussions of Challenges and Recommendations to Strengthen National Reporting of Zoonotic Disease Outbreaks

The following tables outline in detail the group discussions, by country, regarding the priority challenges and corresponding recommendations identified to strengthen reporting of zoonotic disease outbreaks at the country level. This table format organizes the activities, stakeholders, and outcomes clearly for each challenge and recommendation.

Argentina

Challenge and Recommendation 1
Challenge: Scale legal framework from ministerial resolutions to laws to implement protocols involving competent areas at the national and jurisdictional levels.
Recommendation: TTX Detection and reporting of regional zoonotic diseases
Recommendation 1 Implementation Plan

Activities	*Stakeholders*	*Outcomes*
Integrate existing reporting systems including decision algorithms into the National Emergency Monitoring System (SINAME) of the National Integrated Risk Management System (SINAGIR)	Ministries of Health, Agriculture, Environment, Security, Chief of Cabinet of Ministers	Integrated system to predict, detect, and report zoonotic events
Raise awareness among authorities and relevant committees of National Congress	National Congress officials	Officials trained and aware of reporting and detection mechanisms under the One Health approach
Draft the project to modify Law 27287 (SINAGIR)	Health Commission of Congress (technical team), inspired by ministerial resolution	Incorporate Health into monitoring, surveillance, and response procedures
Socialize Law 27287 (SINAGIR) at all jurisdictional levels	One Health officials at all levels	Officials trained and aware of reporting and detection mechanisms under the One Health approach
Develop specific protocols for declaring health emergencies	Technical teams of ministries involved in One Health	Have a protocol for emergencies under the One Health approach

Challenge and Recommendation 2
Challenge: Coordinate with the Ministry of Education to modify curricula to include the One Health concept and train teachers to incorporate it themselves.
Recommendation: TTX Detection and reporting of regional zoonotic diseases

Recommendation 2 Implementation Plan

Activities	*Stakeholders*	*Outcomes*
Include One Health in the curriculum. Conduct multidisciplinary simulations at universities	Faculties of Medicine, Veterinary, Communication, Biology, Biochemistry, Law, Economics, Sociology, Anthropology, etc.	New professionals with a One Health perspective applying the approach in daily work
Create postgraduate courses with the One Health approach	Master's, Diploma, Specialization programs	Professionals specialized in One Health
Communication and dissemination of the One Health concept. "Champions" from the sectors	Sectors and areas to be sensitized that are not yet familiar with the One Health concept	Promote and advocate the One Health perspective as superior for the disciplines involved
Train the National Public Administration through existing platforms (INAP FOPECAP)	All National Public Administration agents	Strengthened capacities in common among jurisdictions working within the One Health scope

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Brazil

Challenge and Recommendation 1
Challenge: Analysis of work processes and mapping of assignments for a One Health approach
Recommendation: Joint mapping of surveillance actions performed in One Health
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Map work processes	MAPA, MMA, MS, and other institutions	Identification of potential interactions, needs, and resistances
Develop an integrated work plan (National Action Plan)	MAPA, MMA, MS, and other institutions	Integrated actions implemented
Submit the plan to the presidency	MS	Ensure resources for the implementation of the National Action Plan in the PPA

Challenge and Recommendation 2
Challenge: Integrated training for a One Health approach
Recommendation: Survey existing training programs among institutions to include the One Health approach
Recommendation 2 Implementation Plan

Activities	*Stakeholders*	*Outcomes*
Survey existing training programs among institutions	MS, MAPA, MMA, and other institutions	Inclusion of the One Health approach in existing training programs

Develop integrated training programs for multipliers	MS, MAPA, MMA, MEC, MCTI, and other institutions	Professionals trained for management and application of One Health actions
Insert the One Health approach in basic and higher education curricula	MEC	Increase public awareness
Develop joint simulations	MS, MAPA, MMA, Civil Defense, and other institutions	Professionals trained for emergency situations

Challenge and Recommendation 3
Challenge: Integration of information/alert systems and diagnostic networks
Recommendation: Identify various systems, functionalities, and data distribution for interoperability
Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Identify various systems, functionalities, and data distribution	MS, MAPA, MMA, MCTI, and other institutions	Integration and transparency of data
Conduct integrated health surveillance actions in human, animal, plant, and environmental health	MS, MAPA, MMA, and other institutions	Actions developed in territories in a timely manner
Integrate alert communication actions (climatic, public health, and others) among involved teams	Civil Defense, Vigidesastres network (DEMSP/SVSA/MS), MAPA	Ensure timely alerts for decision making
Integrate human, animal, plant, and environmental laboratory networks	Laboratory networks and Brazilian universities	Sharing of emergency information

Peru

Challenge and Recommendation 1
Challenge: Strengthening the articulation of surveillance and detection systems for zoonotic diseases under the One Health approach.
Recommendation: Conduct a situational diagnosis of the surveillance and detection systems for zoonotic diseases in the involved sectors. Establish coordination mechanisms and procedures for the notification of zoonotic diseases.
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Conduct a situational diagnosis of the surveillance and detection systems for zoonotic diseases in the involved sectors	MINSA, MIDAGRI, MINAM, PRODUCE, international cooperation	Situational diagnosis of surveillance and detection systems

Establish coordination mechanisms and procedures for the notification of zoonotic diseases	MINSA, MIDAGRI, MINAM, PRODUCE	Coordinated system for the notification of zoonotic diseases

Challenge and Recommendation 2

Challenge: Developing intra- and intersectoral communication mechanisms for the detection and reporting of zoonotic diseases.

Recommendation: Identify and establish focal points in the involved sectors. Analyze current communication flows at intra- and intersectoral levels. Establish periodic simulations and drills for response to zoonotic diseases. Develop a regulatory and normative framework for the detection and reporting of prioritized zoonotic diseases under the One Health approach.

Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Analyze current communication flows at intra- and intersectoral levels	MINSA, MIDAGRI, MINAM, PRODUCE, cooperatives	Diagnosis of current communication flows for process improvement
Identify and establish focal points in the involved sectors	MINSA, MIDAGRI, MINAM, PRODUCE	Timely communication through an institutional contact directory
Establish periodic simulations and drills for response to zoonotic diseases	MINSA, MIDAGRI, MINAM, PRODUCE, MRE, PCM, MEF, MINCETUR, cooperatives, and other involved actors	Strengthened capacity for detection, reporting, and response to zoonotic diseases with a One Health focus
Develop a regulatory and normative framework for the detection and reporting of prioritized zoonotic diseases under the One Health approach	MINSA, MIDAGRI, MINAM, PRODUCE	Binding legal instrument with a One Health focus

Appendix E. Detailed Findings of the Group Discussions of Challenges and Recommendations to Strengthen National Detection and Reporting of Zoonotic Disease Outbreaks

The following tables outline in detail the group discussions, in three groups with mixed representation across countries and sectors, regarding the priority challenges and corresponding recommendations identified to strengthen reporting of zoonotic disease outbreaks at the international level. This table format organizes the activities, stakeholders, and outcomes clearly for each challenge and recommendation.

Group 1

Challenge and Recommendation 1
Challenge: Lack of integrated processes that allow timely sharing of surveillance information between countries.
Recommendation: Identify mechanisms to share information generated in existing surveillance systems in each country. Create an international mechanism for integrated surveillance information across different sectors globally. Regionalize risk assessments and data sharing regarding risks. Ensure mechanisms for reporting surveillance of emerging and re-emerging zoonotic diseases in wildlife.
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Incorporate the topic in the Inter-American Ministerial Meeting on Health and Agriculture (RIMSA) and involve the environmental sector	PAHO/WHO, Ministries of Health, Agriculture, and Environment of the countries	Sensitize decision-makers on the importance of sharing information between countries
Mapping of existing tools and processes by country to share surveillance information	All sectors of the countries and international organizations	Complete mapping of existing tools and processes
Create an integrated regional and global observatory under the quadripartite (WHO, OIE, FAO, UNEP)	Country representatives and the quadripartite (WHO, OIE, FAO, UNEP)	Identify risks according to diseases of international interest
Create a list of common events regarding zoonotic diseases between countries (protocol for prioritizing zoonoses under the One Health strategy)	All sectors of the countries	List of zoonotic diseases to be monitored globally
Coordinate focal points (human health, animal health, and environment) and a communication channel through international organizations that centralize surveillance information under the One Health approach	Focal points of the countries and international organizations	Established communication channels

Challenge and Recommendation 2
Challenge: Lack of formal and timely communication between entities of countries on each side of the border.
Recommendation: Sensitize political decision-makers on the importance of timely formal border communication. Strengthen and coordinate international reporting and control capacities for coordination between entities in border areas. Create and strengthen formal and timely communication mechanisms.
Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Generate national guidelines under the One Health approach for communication of information from different actors at the borders	All sectors of the countries and international organizations	Protocol for formal communication
Identify the actors on each side of the border involved in communication	All sectors of the countries: health, agriculture, environment, foreign affairs, tourism, local authorities	List of actors for border communication coordination
Conduct simulations with the quadripartite	All sectors of the countries and international organizations	Strengthened communication processes

Challenge and Recommendation 3
Challenge: Lack of communication of unusual events under the One Health approach.
Recommendation: Create a decision tool for evaluating and notifying unusual zoonotic events under the One Health approach. Define criteria for identifying unusual and new events with zoonotic and/or pandemic potential with a One Health approach.
Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Create a consultation space between countries under the quadripartite to establish the decision tool for notification	Quadripartite, all sectors of the countries: health, agriculture, environment, foreign affairs, tourism, local authorities	Developed tool for integrated zoonotic risk assessment

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<u>Group 2</u>

Challenge and Recommendation 1
Challenge: Intersectoral communication to improve international reporting.
Recommendation: Raise awareness and disseminate the One Health approach. Implement health zones (especially in border areas) according to their priorities and interests. Establish an agenda and work plan on key issues for agreements between countries. Establish the One Health approach in subregional mechanisms. Highlight the One Health approach at the Andean Health Ministers Meeting (REMSAA) in November 2024.

Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Raise awareness and disseminate the One Health concept. Create international agreements including a regional One Health committee	Ministers of the involved sectors and technical teams	Regional detection and reports from a One Health perspective
Implement cross-border health zones according to their priorities and interests	Ministers of the involved sectors and technical teams at local and regional levels	Cross-border territorial interventions. Universal access to health systems
Establish an agenda and work plan on key issues for agreements between countries	Joint work between Mercosur, Andean Organization, OTCA: periodic meetings with agreements	Subregional integration agreement on One Health issues
Establish the One Health approach in subregional mechanisms	Ministers of the involved sectors and technical teams, Mercosur, Andean Organization, OTCA	Policies, plans, and strategies for control and prevention with a One Health approach
Highlight the One Health approach at the Andean Health Ministers Meeting (REMSAA)	Peru presents as REMSA, Brazil and Argentina invited as MERCOSUR	Commitment of the Health Ministries of the three countries

Challenge and Recommendation 2

Challenge: One Health vision at the local level.

Recommendation: Analyze Brazil's experience from the decree creating the One Health technical committee. Map actors and institutions as well as flowcharts and legislation (local and regional). Stratify events by risk levels.

Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Analyze Brazil's experience from the decree creating the One Health technical committee	Ministries of Health, Environment, and Agriculture of the three countries	Drafts of One Health Law in Peru and Brazil
Map actors and institutions as well as flowcharts and legislation (local and regional)	Health, Environment, and Agriculture sectors. Integrate other areas like industry, mining, tourism, customs	Identify actors and relationships involved in the One Health vision
Stratify events by risk levels	Ministries of Health, Environment, and Agriculture of the three countries	Dimension responses in terms of actors, communication, and involved institutions

Challenge and Recommendation 3
Challenge: Establish a formal mechanism and strengthen informal communication channels at the international level.
Recommendation: Map formal and informal information sources and mechanisms at borders. Establish political agreements (via resolution or similar) between countries to share data and metadata in real time and multilayer (regional reporting dashboard). Coordinate the functioning of relevant actors for One Health. Disseminate rumor surveillance strategies in border areas with community participation.
Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Map formal and informal information sources and mechanisms at borders	Ministries of Health, Environment, and Agriculture of the three countries	Understand and optimize information sources (infodemia) and mechanisms
Establish political agreements (via resolution or similar) between countries to share data and metadata in real time and multilayer (regional reporting dashboard)	Decision-making areas of the countries in the region	Establish how and what data and information will be shared between countries
Coordinate the functioning of relevant actors for One Health	Ministers of the involved sectors and technical teams	Communication and joint work at the national and international levels
Strengthen culturally relevant outbreak communication systems with community participation	National Epidemiology Centers of the countries	Reduce response times
Disseminate rumor surveillance strategies in border areas with community participation	Ministries of Health, Environment, and Agriculture	Timely detection of events of regional, subregional, and local importance

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Group 3

Challenge and Recommendation 1
Challenge: Lack of access to detection and investigation services covering surveillance in animals of small family agriculture producers, companion animals, aquatic animals, and wildlife (especially in border areas) to achieve timely international notification.
Recommendation: Strengthen local surveillance and action teams and provide physical and economic resources for wildlife veterinary services, integrating them with primary health care (One Health teams). Expand capabilities and speed of information transmission at national, regional, and international levels.
Recommendation 1 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Evaluate local infrastructure between countries and identify weaknesses	All countries	Expansion of local infrastructures

within communication programs (using available tools)		
Develop training for local teams on One Health topics	All countries	Promote and incorporate One Health vision at the local level

Challenge and Recommendation 2

Challenge: At times, international organizations provide recommendations on outbreak management in human health without consultation or coordination with the countries involved in the outbreak.

Recommendation: Create a national crisis committee that includes international experts. Establish a formal communication commission that produces consensus communication pieces with international health organizations and defines the dissemination procedure.

Recommendation 2 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Convene existing focal points in countries to align recommendations from international organizations with national interests in each matter	International Health Organizations, Ministries of Health of each country	During a new emergency, provide a national discussion platform so that recommendations arise from each country and are then disseminated through the international organization
Appoint focal points who are experts in crisis communication with a One Health perspective from each country to produce necessary communication pieces jointly with international health organizations' communication experts	International Health Organizations, Ministries of Health of each country	Communication pieces with recommendations for human health with a One Health perspective, agreed upon by each country and the involved international organization

Challenge and Recommendation 3

Challenge: There is a deficit in health risk analysis that considers impacts across the entire territorial extension in infrastructure projects (interoceanic highways, international ports, airports, etc.). There is no continuity in the focal points between those who should develop and monitor these risk analyses, and those who exist are sometimes not trained with a One Health perspective.

Recommendation: Implement the requirement for One Health Risk Analyses (ARUS) in infrastructure projects, making it mandatory at all stages from conception to operation and subsequent monitoring. Establish specific technical guidelines and standards for ARUS in infrastructure projects, defining methodologies, indicators, and evaluation criteria. Develop training programs for professionals in infrastructure, engineering, public health, environment, and focal points on ARUS in infrastructure projects.

Recommendation 3 Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Develop a Reference Guide for ARUS in Infrastructure Projects		Reference Guide for ARUS in Infrastructure Projects

Include experts in risk assessments with an environmental impact perspective and a One Health approach		Comprehensive risk assessments with a One Health approach
Develop risk analyses and a protocol for emergency situations for large regional development projects. Prepared by a technical team with One Health components from all countries, and signed by the highest authorities of each country		Risk analyses and emergency protocols for regional development projects
Inform and train One Health response teams at the local level in affected and involved communities where regional infrastructure projects are carried out to prevent impacts		Local One Health response teams trained and informed

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Summary of Group Recommendations

The combined recommendations from Group 1, Group 2, and Group 3 focus on addressing significant challenges in international reporting and communication of zoonotic diseases. The main challenges include limited access to detection services for small farmers, uncoordinated recommendations from international organizations, deficits in health risk analysis for large infrastructure projects, intersectoral communication issues, and the need for a One Health vision at local and regional levels.

To overcome these challenges, the groups recommend strengthening local surveillance teams and resources, establishing national crisis committees, implementing mandatory One Health Risk Analyses (ARUS) in infrastructure projects, raising awareness of the One Health approach, and establishing formal communication mechanisms. Additionally, the recommendations include creating a permanent intersectoral technical committee, standardizing data collection methods, ensuring adequate funding for health security initiatives, and developing regular training programs for health workers and emergency responders.

These actions aim to enhance international reporting, improve coordination and communication between agencies, promote transparency in data sharing, and foster a collaborative approach to managing health risks at the local, regional, and international levels.

Summary of All Group Recommendations and Implementation Plans for Strengthening International Reporting of Zoonotic Disease Outbreaks

Strengthening Local Surveillance and Resources

Recommendation: Strengthen local surveillance teams and resources for wildlife veterinary services, integrating them with primary health care (One Health teams). Expand the capacities and speed of information transmission at national, regional, and international levels. Develop training with communities for local teams on One Health topics. Enhance local infrastructure and identify weaknesses in communication programs.

Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Evaluate local infrastructure and communication programs to identify weaknesses	All countries	Expansion of local infrastructures
Develop community training programs on One Health topics	All countries	Promote and incorporate One Health vision at the local level
Expand local surveillance capacities and resources, integrating them with primary health care	All countries	Strengthened local surveillance and resources

Establishing Crisis Management Committees
Recommendation: Establish a national crisis committee that includes international experts. Form a permanent intersectoral technical committee for crisis management, involving representatives from health, agriculture, and environmental sectors. Create a formal communication commission to produce consensus-based pieces with international health organizations.
Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Convene existing focal points to align recommendations from international organizations with national interests in each matter	International Health Organizations, Ministries of Health of each country	During a new emergency, provide a national discussion platform for recommendations
Nominate crisis communication experts from each country	International Health Organizations, Ministries of Health of each country	Consensus communication pieces for human health with One Health perspective
Establish a centralized communication platform for information sharing between agencies and international partners	International Health Organizations, Ministries of Health of each country	Improved intersectoral and international communication

Implementing One Health Risk Analyses (ARUS)
Recommendation: Implement mandatory One Health Risk Analyses (ARUS) at all stages from conception to operation and subsequent monitoring for large infrastructure projects. Develop technical guidelines and specific standards for ARUS in infrastructure works. Train professionals in relevant fields on ARUS and One Health principles.
Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Develop a Reference Guide for ARUS in infrastructure projects		Reference Guide for ARUS in Infrastructure Projects
Include experts in risk assessments with environmental impact perspectives under One Health		Comprehensive risk assessments with a One Health approach

Inform and train local response teams in affected communities		Local One Health response teams trained and informed

Promoting One Health Approach

Recommendation: Raise awareness and disseminate the One Health approach among stakeholders, including ministers and technical teams. Integrate the One Health approach into subregional mechanisms and international agreements. Highlight the One Health approach at high-level meetings, such as the Andean Health Ministers meeting (REMSAA).

Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Raise awareness and disseminate One Health concepts among stakeholders	Ministers of the involved sectors and technical teams	Regional detection and reports from a One Health perspective
Implement transboundary sanitary zones in border areas	Ministers of the involved sectors and technical teams at local and regional levels	Cross-border territorial interventions. Universal access to health systems
Establish a work plan for key issues and agreements between countries	Joint work between Mercosur, Andean Organization, OTCA: periodic meetings with agreements	Subregional integration agreement on One Health issues

Improving Intersectoral and International Communication

Recommendation: Map actors and institutions involved in One Health, along with flowcharts and legislation. Stratify events according to risk levels to ensure appropriate responses. Establish political agreements between countries to share real-time data and metadata. Articulate the functioning of relevant actors for One Health to enhance communication and collaboration.

Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Map actors and institutions involved in One Health, along with flowcharts and legislation	Health, Environment, and Agriculture sectors. Integrate other areas like industry, mining, tourism, customs	Identify actors and relationships involved in the One Health vision
Stratify events according to risk levels to ensure appropriate responses	Ministries of Health, Environment, and Agriculture of the three countries	Dimension responses in terms of actors, communication, and involved institutions
Establish political agreements between countries to share real-time data and metadata	Decision-making areas of the countries in the region	Establish how and what data and information will be shared between countries
Articulate the functioning of relevant actors for One Health to enhance communication and collaboration	Ministers of the involved sectors and technical teams	Improved intersectoral and international communication

Enhancing Data Sharing and Transparency

Recommendation: Standardize data collection methods across sectors and countries to ensure consistent and reliable data. Promote transparency in reporting health incidents and outbreaks. Foster trust and collaboration through regular data sharing and joint initiatives.

Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Develop standardized data collection templates and guidelines	All sectors of the countries and international organizations	Consistent and reliable data collection
Establish transparent reporting protocols for health incidents	All sectors of the countries and international organizations	Improved transparency in reporting
Organize regular data sharing meetings and workshops	All sectors of the countries and international organizations	Enhanced trust and collaboration through data sharing

Ensuring Adequate Funding and Training

Recommendation: Ensure adequate funding for health security initiatives by advocating for increased budget allocations. Provide regular training and capacity building for health workers and emergency responders. Develop a resource-sharing mechanism for crisis situations to ensure efficient use of resources.

Implementation Plan:

Activities	*Stakeholders*	*Outcomes*
Advocate for increased budget allocations for health security	Ministries of Health, Finance, and international funding organizations	Adequate funding for health security initiatives
Conduct regular training sessions and simulations for health workers	Ministries of Health and training institutions	Well-trained and prepared health workers
Establish resource-sharing agreements for emergencies	Ministries of Health and international organizations	Efficient use of resources during crisis situations