Report of the Workshop on Lessons Learned During the COVID-19 Pandemic in the Region of the Americas

Preparedness and Response

PAHO
Pan American Health Organization
World Health Organization
Regional Office for the Americas

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Buenos Aires, 16–19 August 2022

PAHO Pan American Health Organization World Health Organization Americas

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Contents

Summary

The latent threat of future pandemics caused by respiratory viruses with epidemic and pandemic potential is a leading public health concern. Identifying lessons learned is not enough. It is essential that we reflect on how we can learn from previous epidemics and pandemics; how we can build resilience into health systems and services; how to sustain capacities, achievements, and developments; and, most importantly, how to leverage these experiences to ensure an improved capacity for prevention, preparedness, response, and control in future events.

This report forms a compendium based on an exchange of experiences in selected programmatic components of the COVID-19 pandemic response. The compendium can function as a reference for strengthening national health systems in the Region of the Americas and to guide technical cooperation activities in future pandemics.

An in-person meeting was held 16-19 August 2022 in Buenos Aires, Argentina, with approximately 120 people in attendance. Delegates from Argentina, Bolivia (Plurinational State of), Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, and Suriname shared their insights on the programmatic elements of epidemiological surveillance, laboratory response, national vaccination deployment plans, risk communication, and community engagement, based on their experiences of implementation of measures against the coronavirus disease 2019 (COVID-19). Representatives of the World Health Organization, the United States Centers for Disease Control and Prevention, and various departments of the Pan American Health Organization (PAHO, the WHO Regional Office for the Americas) and its country offices also participated.

The workshop included expert panels with representatives of international organizations and national authorities as well as topical working groups, with emphasis on the following aspects:

a. Preparedness and strengthening of surveillance and response systems for events with epidemic and pandemic potential is essential, and contributes to the fulfillment of the core capacities of Member States under the International Health Regulations (IHR) (2005). Sustainable capacity-building and necessary adjustments to the surveillance of severe acute respiratory infection (SARI) across countries facilitated the integration of surveillance for severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2), the etiological agent of COVID-19.

b. An integrated operational approach to preparedness and response plans for pandemics caused by respiratory pathogens recognizes shared elements and actions and optimizes existing capacities while taking into account the reality of each country. The integration of SARS-CoV-2 surveillance and necessary adjustments to SARI surveillance are indicative of the activities carried out by, and the major achievements of, the countries of the Region.

c. Preparedness and response require interprogrammatic, multisectoral work. Allocation of resources to the budgets of other sectors involved in health emergencies, on the basis of well-developed preparedness plans, facilitates timely access to medicines, vaccines, and supplies during public health emergencies.

PAHO recognizes the heterogeneity of capacities across countries and highlights the commitment and leadership of national authorities in the Region of the Americas during the COVID-19 pandemic. We hope that this publication will help strengthen Member States' short- and medium-term actions in tackling multiple public health events and emergencies.

Background

In 2009, given the magnitude and rapid spread of the influenza A(H1N1) virus worldwide, PAHO decided to convene a meeting of experts from its Member States later that year to share their experiences. These were included in the publication Response to Pandemic (H1N1) 2009 in the Americas: Lessons and Challenges. Miami, Florida, 15–17 September 2009. This report critically appraised the lessons learned and issues detected to improve the response to future pandemics in the Region. Up to September 11, 2009, 35 countries in the Region of the Americas had reported 124,219 confirmed cases of influenza A and 22 countries had reported 2638 deaths.

From the start of the COVID-19 pandemic in 2020 through December 20, 2022, approximately 650 million reported cases of COVID-19 had been reported worldwide, including nearly 6.6 million deaths. Approximately 3,821,620 additional COVID-19 cases and 10,737 deaths from COVID-19 were reported on epidemiological week 50 of 2022 (11–17 December) alone.[1]

In the Region of the Americas, during epidemiological week 50 of 2022, 1,022,218 new COVID-19 cases were reported (a relative increase of 17.9% compared to the previous week), and 4637 deaths from COVID-19 (a relative increase of 2.5% compared to the previous epidemiological week).[2] COVID-19 cases and deaths increased in the South American (49.6% and 55.0%, respectively) and Central American subregions (10.4% and 57.7%, respectively).

Based on the current state of the COVID-19 pandemic, there is a high likelihood of future pandemics caused by respiratory pathogens and an increase in new COVID-19 cases (including outpatient cases, hospitalizations, and deaths) in 12 countries and territories across the Region of the Americas. This, along with a rising number of hospitalizations for influenza, respiratory syncytial virus, and other respiratory viruses (ORVs), may have an impact on the demand for health services. PAHO urged Member States to update their health system prevention, preparedness, and response plans at all levels to respond to a potential increase in outpatient cases, hospital admissions, intensive care unit (ICU) admissions, and deaths, and also to design strategies to increase the proportion of vaccinated people, especially among vulnerable and high-risk populations.

In April 2022, WHO published a policy brief on *Strengthening pandemic preparedness planning for respiratory pathogens*.[2] In this document, based on the International Health Regulations (IHR) (2005)[3] and resolutions WHA58.5 and WHA74.7, WHO commits to providing countries with guidance and technical assistance to support pandemic preparedness planning.

Seeking to understand, explore, and document recent experiences in the Region of the Americas, the Infectious Hazards Management Unit of PAHO's Health Emergencies Department (PHE/IHM) held a regional workshop in August 2022, in Buenos Aires, Argentina, to highlight the importance of strengthening national capacities, early detection, and risk assessments.

1 Pan American Health Organization. Epidemiological Alert — Increase of COVID-19 cases and hospitalizations. Washington, DC: PAHO; 2022. Available from https://www.paho.org/en/documents/epidemiological-alert-increase-covid-19-cases-and-hospitalizations.

2 World Health Organization. Strengthening pandemic preparedness planning for respiratory pathogens: policy brief, 27 April 2022. Geneva: WHO; 2022. Available from https://www.who.int/publications/i/item/WHO-2019-nCoV-Policy_brief-pandemic_preparedness-2022.1.

3 World Health Organization. International Health Regulations (2005). Geneva: WHO; 2016. Third edition. Available from https://www.who.int/emergencies/operations/international-health-regulations-monitoring-evaluation-framework.

Within the IHR (2005) Monitoring and Evaluation Framework (MEF)[1], this voluntary exercise, facilitated by PAHO, enabled countries participating in the COVID-19 response to reflect on measures taken to prepare for and respond to the COVID-19 outbreak at the national level, identify best practices, gaps, and lessons learned, and, ultimately, propose corrective measures to improve and strengthen their further response to COVID-19.[2]

PAHO stressed the need to integrate epidemic and pandemic prevention, preparedness, and response activities into national planning processes and budget cycles, as well as to include risk communication and community engagement as an integral part of health emergency preparedness and response.

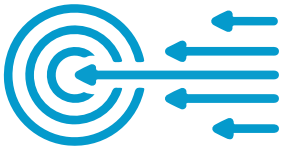
Objectives

The objectives of the workshop were to:

1. Review the implementation plans and achievements in implementation of the Pandemic Influenza Preparedness Framework 2018–2023.[3]

2. Document lessons learned during the COVID-19 pandemic that can serve as a reference for future pandemics, help strengthen national health systems in the Americas, and enhance related technical cooperation activities during the process of developing, updating, and pilot-testing pandemic preparedness plans.

3. Establish a roadmap for each country to develop its national operational and integrated pandemic preparedness plan for respiratory pathogens.



1 World Health Organization. International Health Regulations (2005). IHR Monitoring and Evaluation Framework. Geneva: WHO; 2018. Available from https://www.who.int/emergencies/operations/international-health-regulations-monitoring-evaluation-framework.

2 World Health Organization. Guidance for conducting a country COVID-19 intra-action review (IAR), 23 July 2020. Geneva: WHO; 2020. Available from https://apps.who.int/iris/handle/10665/333419.

3 World Health Organization. Pandemic influenza preparedness (PIP) framework: partnership contribution (PC) preparedness high-level implementation plan II 2018-2023. Geneva: WHO; 2021. Available from https://apps.who.int/iris/handle/10665/260538.

Methods

Expert panel discussion

Two panels of experts were organized. The first was held to discuss experiences in technical cooperation supporting preparedness plans for public health emergencies and their link to national budgets during the COVID-19 pandemic. This panel included the director of epidemiology of Argentina, the national director for international relations of Argentina, a supervisory health scientist from the U.S. Centers for Disease Control and Prevention (CDC), a WHO Technical Advisor for Risk Management, and the PAHO Advisor on IHR.

The second panel reflected on PAHO's operational experiences in securing access to medicines, vaccines, and other health emergency supplies during the COVID-19 pandemic. Participating on behalf of the PAHO Regional Office were the Director of PAHO's Medicines and Health Technologies Unit, the Technical Advisor on the Revolving Fund, the Advisor on the Strategic Fund, and the PAHO Advisor on Immunization in Ecuador.

Topical group sessions

Four topics were selected for discussion and identification of lessons learned during the COVID-19 pandemic: 1) epidemiological surveillance, 2) laboratory surveillance and response, 3) vaccine deployment, and 4) risk communication and community engagement. The first three topics were addressed in parallel sessions, in which each of the attendees chose a team based on their line of work.

For the fourth topic, risk communication and community engagement, the discussions were organized by country. Key recommendations and lessons learned from the COVID-19 pandemic discussed in each topical cluster were shared during plenary sessions.

Final session: the roadmap for operational and integrated country plans

This last session provided to all participants an update of global guidance on strengthening pandemic preparedness planning for respiratory pathogens,[1] and served as a space of reflection for the delegates of each country to analyze and discuss key actions and actors involved in the development of national roadmaps that would allow for operational and integrated country-level plans.

1 World Health Organization. Respiratory pathogens pandemic preparedness guidance: draft for input. Geneva: WHO; 2022. Available from Global Influenza Programme (who.int).

Summary of panel discussions

Experiences with technical cooperation to support public health emergency preparedness plans

- There was improved understanding and a better approach to the IHR (2005) core capacities, as well as greater participation and commitment by different areas of work in each country.
- Technical cooperation should include a range of topics to make resources more efficient, reduce overlap, and improve coordination before and during public health emergencies, to strengthen preparedness plans for pandemics caused by respiratory pathogens.
- Countries' contributions were considered essential to adapting processes, updating global pandemic planning and response, and setting research priorities.
- Pandemic preparedness and response plans should be flexible, operational, and aligned with national health and emergency plans.
- The need to cover resource allocation for the budgets of other sectors involved in health emergencies was clear.
- Furthermore, a need was identified to train countries' human resources in developing projects to seek funding for the procurement of medicines and supplies to respond to emergencies.
- Early detection capacities must be strengthened and maintained to ensure an agile, efficient response to emerging respiratory viruses, with flexible and agile funding mechanisms for pandemic prevention, preparedness, and response.
- The planning and logistics of emergency operations centers must be improved for command structures and control and to fine-tune the response of aid workers to future health events.
- Performance indicators should be standardized in countries where there are marked differences between what is optimal and what is feasible.
- There is a need to improve vaccine access and deployment, ensure access to medicines and diagnostic tests, identify new modalities for procurement of medicines (inventory, diversify sources), and ensure the stockpiling and timely distribution of personal protective equipment (PPE), such as gloves and respirators, among others.

Experiences with access to medicines, vaccines, and supplies during health emergencies

- The essential role of national regulatory authorities (NRAs) and their responsibility in protecting people's health must be acknowledged, and the obstacles posed by public health emergencies must be addressed.
- Although up-to-date guidance was generated at the global and regional levels, PAHO country offices still faced multiple problems, as did the authorities when faced with the need to adapt plans and recommendations at the local level and align their response with that of other sectors and shared responsibility in different levels.
- Mechanisms must be developed to ensure equitable access to new health technologies across the countries of the Region, including new mechanisms for the efficient and timely procurement of strategic supplies during emergencies.
- PAHO's Strategic Fund and Revolving Fund must maintain the capacities they acquired during the COVID-19 pandemic to respond to health emergencies, including effective strategies to address supply-chain disruption issues.
- The limited availability of human resources to initiate field activities (e.g., deploy vaccination) was identified by participants as one of the most serious challenges.
- During a public health emergency, it is essential that the first level of care be supplied with basic health technologies; this requires defining lists of medicines, vaccines, and medical devices needed to provide a rapid, decisive response and narrow the care gap at the local level.
- PAHO's stockpiles of strategic supplies for COVID-19 in the Health Emergencies Department warehouse (and of other medicines in the Communicable Diseases and Environmental Determinants of Health Department warehouse in Panama) played a key role in supplying countries at the start of the pandemic, even if only partially meeting their needs, while procurement was underway.
- Prior reconnaissance and use of multimodal transport (air, sea, and land) was important to ensure that supplies reached their destinations as soon as possible.
- A shortage of ICU medicines (due both to actual shortages and to declining domestic production) was solved in seven countries, and the medical supplies necessary for the care of patients with COVID-19 were successfully purchased.
- It is important to identify additional sources of supply in the Region, including new drug and equipment categories, and build a portfolio of new suppliers. This will complement other key actions and strategies for future seasonal epidemics or pandemics of respiratory pathogens.
- Overall, countries that offered influenza vaccination as part of their regular immunization schedule showed better responsiveness in COVID-19 vaccine deployment.

Lessons learned at the regional level

Experiences with technical cooperation

To achieve better technical cooperation, it is necessary to:

- Work on a shared vision of the process of preparedness, surveillance, and response to health emergencies, in line with strengthening and integration of the IHR (2005) core capacities.
- Adapt existing plans with integrated approaches to pandemic preparedness planning, with a focus on respiratory pathogens (known and unknown) recognizing that there are common elements in preparedness and response to infections caused by different respiratory microorganisms.
- Strengthen the capacities developed for influenza surveillance and control and the experience of integrating COVID-19 into these capacities as a large, dynamic, flexible model to scale up and adapt preparedness and response for other respiratory pathogen threats. The networks built during the 2009 influenza epidemic are valuable for further developing preparedness and response to respiratory pathogens.
- Recognize that existing research networks and initiatives are one of the strengths of pandemic preparedness, planning and research; experience is key to selecting priorities and awareness of future developments in health emergencies.
- Advocate for increased national budgets for preparedness and response plans, to ensure that developed capacity is sustainable.
- Explore technical cooperation mechanisms that promote resilient health systems, greater consistency in integration, capacity monitoring, and use of innovative technologies.
- Strengthen updated essential public health functions.

Access to medicines, vaccines, and supplies during health emergencies

To achieve better access to medicines, vaccines, and supplies during health emergencies, the following tasks must be carried out:

- Position and strengthen NRAs, with a high level of independence (reflected in national laws, regulations, and policies) and sufficient financial and human resources to ensure their operation and, in particular, to allow preparedness and response to public health emergencies.
- Promote resilient governance in times of crisis, facilitating collective, harmonized responses among ministries, national authorities, and technical cooperation agencies; responding more quickly to countries and facilitating regulatory coordination; and promoting decision-making related to access, distribution, and quality of medicines, vaccines, and supplies.
- Boost technology development, availability, and transfer across the countries of the Region.
- Maintain the capacities acquired by the Strategic Fund and the Revolving Fund during the COVID-19 pandemic. Additionally, the Region must sustain dynamic and flexible technical cooperation mechanisms to procure and ensure access to technologies (medicines, vaccines, and supplies) for the response to national and regional needs during health emergencies.

- At the country level, streamline regulatory processes to expedite the import and marketing authorization of vaccines and treatments.
- Ensure equitable distribution of available technologies (medicines, equipment, supplies, vaccines, etc.).
- Promote multidisciplinary, intersectoral work, broad in coordination and collaboration and flexible through cooperation, to respond to unexpected events.
- Strengthen high-quality regional manufacturing capacity, to reduce dependence on markets outside the Region.
- Establish and sustain national procurement mechanisms to meet demands during health emergencies by identifying new suppliers or other alternatives for action.

Surveillance during the COVID-19 pandemic

To achieve better surveillance during a respiratory virus pandemic, it is necessary to:

- Design standardized tools that allow continuous evaluation of the epidemiological context to guide a targeted application of public health measures.
- Incorporate prioritization mechanisms, based on evaluation of the epidemiological context and capacities, into surveillance strategies.
- Build capacity at the regional level to conduct real-time studies (on transmissibility, immunity, vaccine effectiveness, etc.) for epidemiological characterization. .
- Adapt surveillance flows and processes according to the capacities and needs of each country.
- Involve technical focal points in a multidisciplinary manner and leverage existing capacities when organizing a response.
- Foster adaptable, integrated information systems with interoperable processes.
- Make public health decisions guided by scientific evidence.
- Identify where national resources are needed to plan personnel recruitment for the pandemic response and to ensure the continuity of surveillance operations.
- Institutionalize epidemiological surveillance teams and their budgets to ensure the continuity of surveillance tasks.
- Ensure that institutions disseminate information in a transparent manner.
- Build capacity in risk communication and community engagement. Experience has shown the importance of linking the epidemiological and communication components to convey information to different levels and different audiences.
- Include, in contact tracing and case isolation strategies, components other than surveillance (such as risk communication and community engagement), as well as social support and regulatory frameworks.
- Strengthen epidemiological surveillance personnel, not only at the national level but also at the subnational and local levels, with an emphasis on primary care facilities and on greater intersectoral participation.
- Use virtual courses for training and establish or strengthen virtual training for the health professions.

- Consider partnerships with other sectors (e.g., academia) to support the development of health-related training activities during the pandemic response.
- Prioritize the mental health of public health personnel — an aspect that requires improvement in the post-pandemic recovery phase.
- Measure the impact of the pandemic on health personnel and surveillance teams.

Laboratory surveillance and response during the COVID-19 pandemic

To achieve better laboratory surveillance and response during a respiratory virus pandemic, it is necessary to:

- Establish mechanisms to maintain and ensure the sustainability of the laboratory response even during routine surveillance.
- Improve the data registration system (forms with incomplete data are unreliable) and the interoperability of information systems within countries (integration of data from public and private laboratories, as well as epidemiological and clinical data).
- Recognize laboratory work as a core component of data generation for the surveillance of public health events.
- Establish standardized protocols for sample processing procedures and molecular diagnostics.
- Have validated reference reagents that allow integrated surveillance of SARS-CoV-2, the influenza virus, and OVRs, available and distributed equitably within countries.
- Strengthen the opportunity to obtain and report results that can be used to guide deployment of sanitary cordons.
- Improve the internal and external communications of laboratory networks; this should include designating personnel in charge of preparing and disseminating nationwide and local reports and bulletins.
- Maintain laboratory training strategies despite restrictive measures, such as border closures.
- Strengthen and integrate respiratory virus surveillance at the human-animal interface.

Vaccination during the COVID-19 pandemic

To optimize vaccination activities during a respiratory virus pandemic, the following tasks should be carried out:

- Have regulatory frameworks in place for particular situations, beyond the COVID-19 pandemic, as this facilitates emergency use authorizations and allows the rapid procurement of vaccines and supplies from different manufacturers.
- Established, experienced national immunization programs facilitate the identification of vaccination strategies for priority groups and the organization of vaccination activities.
- Make regulatory frameworks (exceptionally) more flexible, without detriment to oversight of vaccines. Scaling up this good practice will improve both responses to other emergencies and the regular immunization program.
- Urge countries to include seasonal influenza in their vaccination schedules, as it is now confirmed that countries that had already done so deployed COVID-19 vaccines more effectively.
- Deploy COVID-19 vaccination by the public and private sectors jointly and strategically to control the pandemic.
- Involve cabinet-level authorities in mobilizing resources to implement the vaccination plan.
- Establish priority groups on the basis of mortality, morbidity, and severity criteria. This allowed a focused and gradual deployment of vaccines so as to maximize their effect despite initially limited availability. In scenarios of limited access to vaccines, the National Immunization Technical Advisory Groups (NITAGs) played an important role in prioritizing high-risk groups for phased vaccination, and the existence of national vaccine deployment plans allowed for planned deployment of vaccination.
- Establish and maintain agreements with specialized institutions to strengthen the human resource capacities of vaccination teams on the ground.
- Ensure intersectoral coordination, with access to diverse information systems and population databases (such as electoral rolls), since this facilitates the adaptation of vaccination strategies to target populations.
- Develop plans among health authorities and educational facilities aimed at training new vaccinators and other operational personnel for the vaccination response.
- Identify groups which are vaccine-hesitant and maintain close contact to provide them with accurate, culturally adapted information.
- Achieve immediate customs clearance and tax-exempt status for vaccines and related supplies.
- Train health personnel in the use of new technologies, such as ultra-low temperature freezers; in the handling of ultra-low temperature vaccines; and in the use of other new tools and technologies.
- Maintain sufficient stockpiles of cold chain equipment and supplies, PPE, and a logistics system that facilitates product traceability.
- Special activities are required to reach certain population groups, for a variety of reasons (human mobility, geographic access, cultural and religious issues, etc.).

Risk communication and community engagement during the COVID-19 pandemic

To improve risk communication and community engagement during a respiratory virus pandemic, it is necessary to:

- Perform an audience analysis to refine communication strategies for different population groups.
- Continuously review internal communication protocols to improve coordination in case of emergency.
- Make a clear and objective budget estimate to seek (and justify) funding and dedicated human resources for risk communication and community engagement (RCCE).
- Provide tools to key actors to strengthen procedures and facilitate RCCE.
- Assign a dedicated unit or team to RCCE, with its own budget.
- Strengthen internal flows through standard operating procedures (SOPs), to ensure institutionalization and standardization and thus achieve better coordination in an emergency.
- Work with other organizations, health care providers, or nongovernmental organizations to build trust early on and before a disaster or outbreak.
- Detect which groups, communities, and leaders (the latter, especially at the community level) should be involved in RCCE from the outset.
- Strengthen routine relations with the population to consolidate bonds of trust, which are essential when facing a public health emergency.
- Strengthen local health workers, who play a very important role in communities.
- Assemble teams to train health promoters at the local level across the country.
- Advocate for allocation of human and financial resources to community engagement activities:
    - Find a line of funding for specific activities to strengthen local-level and community engagement (community leaders, religious leaders, etc.).
    - Empower and support community leaders to face any health emergency.

Thematic group discussions: surveillance, laboratory, vaccines, and risk communication

Surveillance during the COVID-19 pandemic

What went well

- Strengthening of the surveillance network with added human resources for sentinel surveillance of influenza and ORVs.
- Efficient, sustainable integration of SARS-CoV-2 surveillance into sentinel surveillance of SARI and ORVs from the start of the pandemic, taking advantage of existing surveillance systems.
- Integration of a genomic surveillance component to monitor circulating SARS-CoV-2 lineages and sublineages and detect novel variants.
- Necessary adjustments to surveillance of influenza and ORVs to ensure adequate monitoring of the transmission, severity, and impact of COVID-19.
- Dissemination of information by institutions, which has fostered transparency.
- Partnerships with other sectors (e.g., academia), which supported the development of health-related training activities during the pandemic response.
- Adaptation of surveillance flows and processes according to capacities and needs.
- Use of virtual teaching to strengthen the health response.
- Preparedness before the first case, with declaration of a public health emergency of international concern.
- Surveillance established at points of entry into the countries, including screening of travelers and contact tracing.
- The strategy of providing accommodation for cases, contacts, and travelers within the context of epidemiological surveillance.

What went poorly

- Lack of up-to-date surveillance guidelines at the operational level.
- Failure to plan for the necessary resources to hire trained personnel for pandemic response.
- Lack of budget space and human resources to support and maintain updated information systems.
- Failure of the contact tracing and case isolation strategy because it was not linked to other components beyond surveillance, such as risk communication and community engagement, social support, and regulatory frameworks.
- Absence of integrated, interoperable information systems with structured data, which made it difficult to meet monitoring objectives.
- Lack of measurement of the impact of the pandemic on health personnel and surveillance teams.
- Failure to strengthen the human resources responsible for epidemiological surveillance at the subnational and local levels, with an emphasis on primary health care facilities and greater intersectoral participation.
- Absence of a risk communication and community engagement strategy to provide information on prevention and control measures, aimed at different audiences and based on epidemiological surveillance data.
- Lack of continuous evaluation to support the scaling up/scaling down of public health measures.
- Failure to take scientific evidence into account when making decisions.
- Absence of prioritization mechanisms when implementing prevention and control measures.
- Limited capacity to conduct real-time studies (on transmissibility, immunity, vaccine effectiveness, etc.) at the regional level in order to characterize the event.
- Absence of mental health strategies for public health personnel.
- Lack of accurate case-finding and contact tracing due to the magnitude of the event.
- Failure to increase the structural capacity of the information systems of ministries of health proportionately to the magnitude of the event, which led to collapse.

Laboratory surveillance and response during the COVID-19 pandemic

What went well

- Diagnostic strategies were developed despite limited resources.
- Strategies were devised to leverage distinct groups of professionals to ensure timely work (e.g., administrative staff were allocated to digitization tasks; shift work was implemented).
- Resources were distributed from the central level to public laboratories to support diagnosis.
- Participation in global public health surveillance and risk assessment systems (e.g., the Global Influenza Surveillance and Response System).
- Countries declared a state of emergency to support the distribution of resources.
- Telephone hotlines were established.
- Laboratory personnel were incorporated into the response to health emergencies.
- Diagnostic methods were implemented for the detection of variants of concern and variants of interest.
- Verification of antigen test performance.
- Strengthening of automated extraction methods.
- Validation of extraction and amplification kits to allow extension of their shelf lives.
- Effective application of the dual SARS-CoV-2/influenza multiplex RT-PCR test.

What went poorly

- Early expansion of the laboratory's installed capacity.
- Validation of rapid tests for diagnosis of COVID-19.
- Exchange of reagents and supplies (due to border closures), collaboration to obtain resources by direct contact with donors (e.g., individuals and non-governmental organizations, among others).
- Limited resources for sample transport.
- Use of diagnostic tests with varying levels of efficacy.
- Integration of clinical, laboratory, and epidemiological information into a nationwide computer system.

Vaccination during the COVID-19 pandemic

What went well

- Transparency in the activities carried out by NRAs facilitated decision-making and communication of these processes to the population.
- Immunization records were improved and electronic COVID-19 vaccine registries were created, allowing vaccination status to be known in real time. This can be used to integrate other vaccines into the electronic record.
- Systematization of the COVID-19 vaccine deployment process is a robust tool which can be used to tackle future epidemics and pandemics.
- The engagement of subnational governments, various sectors, and agencies of the ministries of health allowed direct organization of vaccination processes from the earliest stages of planning and facilitated greater adherence to these processes.
- Permanent monitoring and public accountability of subnational governments regarding their joint responsibility for vaccination activities.
- Intersectoral work with public and private institutions at the national level, as well as with international organizations. In some cases, the latter provided funding for many components of the COVID-19 vaccination program.
- Substantial efforts were made by central governments to reallocate resources from other sectors toward health care and vaccination plans (procurement of vaccines, supplies, and medicines).
- Declarations of emergency allowed faster and more efficient procurement of medical supplies.
- Establishment of collaborative bodies involving different partners made it possible to obtain detailed information and thus facilitate the achievement of better coverage across all priority groups.
- Intersectoral coordination, with access to diverse information systems and population databases (such as electoral rolls), facilitated the adaptation of vaccination strategies to target populations.
- Inter-institutional support and coordination with universities, the armed forces, law enforcement, the Red Cross, and the private sector made it possible to quickly achieve the goals of the vaccination plan.
- Rapid deployment and training of health personnel from the Ministry of Health, universities, and other institutions advanced vaccination activities.
- Mapping actors from sectors other than the health system is important because they can participate in response and vaccination activities.

- Liaisons between the NRA and the Ministry of Health through an inter-institutional committee strengthened the surveillance of events supposedly attributable to vaccination or immunization (ESAVI) at different levels.
- Preparation of periodic, public reports on vaccine safety; sharing of information with international organizations for analysis and consolidation.
- Availability of an information system that integrates vaccination data and ESAVI data in real time.
- Systematic coverage monitoring, including a "vaccinometer" to present and communicate information on the progress of vaccination against COVID-19 in the country and beyond, including in vulnerable populations (e.g., indigenous people, persons deprived of liberty, etc.).
- National vaccination plans facilitated vaccination activities stratified by risk groups, according to the phased deployment plan.

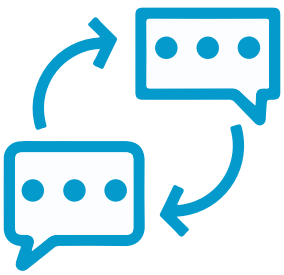
What went poorly

- Need for personnel with the appropriate skillset and for administrative and legal mechanisms to carry out new activities related to the management and procurement of vaccines and supplies to fight COVID-19.
- NRAs should have mechanisms for exchanging information, documenting decisions and making them public, alongside information on nationally authorized products.
- Price control mechanisms must be implemented for essential supplies.
- Rapid reviews of international information and recommendations should be undertaken to enable identification of priority groups.
- Information analysis needs to be improved to validate which groups are most at risk in each national context.
- Mechanisms must be improved for agile and efficient adoption of updated guidelines, key messages, and risk communication plans (among others), both regionally and globally.
- Considering the initial shortage of vaccines, the vaccination plan could not be implemented in a timely fashion. Vaccination took place unequally across the countries of the Region. Countries that relied on donations from the COVID-19 Vaccine Global Access (COVAX) Facility had slower vaccination rollouts, while countries that procured vaccines through bilateral negotiations with manufacturers were able to do so faster.

Risk communication during the COVID-19 pandemic

What went well

- Most Member States have improved their public and external communication capacities.
- Member States recognize the importance of risk communication and community engagement as a key component of prevention and control strategies.
- Governments have strengthened their RCCE capacities – linked to the epidemiological component – at different levels, for different audiences, and in different languages.
- Most countries developed public communication (including digital communication) plans which can now be adapted, on the basis of lessons learned, to strengthen responses to future emergencies caused by other respiratory pathogens.
- Intersectoral coordination was strengthened to communicate risk in a unified manner and encourage preventive behaviors at different levels and across different actors in society.
- The response to the COVID-19 pandemic by the communication units and departments of national health authorities means that a large number of communication professionals in the Region of the Americas now have substantial experience in dealing with large-scale public health emergencies; these capacities must be expanded and optimized.
- As a result of the experience in digital communication gained during the pandemic, Member States now recognize the importance of managing information overload, and are aware of the potential of the infodemic to influence preventive behaviors and decisions within communities.
- Most Member States have tools in place to monitor the media (and, in some cases, to monitor social networks as well). This information is used to adapt the narrative and retool messages to reinforce adoption of public health measures by the population.



What went poorly

- The risk communication component of preparedness and response plans and of pandemic preparedness plans needs to be updated.
- Communication plans should be segmented by target audience.
- There has been no call to integrate functions and sectors to strengthen coordination mechanisms for RCCE.
- Existing plans must be strengthened, actions prioritized, and response pathways, institutionalized.
- Lack of a dedicated budget for risk communication.
- Absence of a communication strategy that proactively reaches out to various dissemination platforms (traditional media, social networks, the internet) to target messages to specific audiences.
- Most countries do not have a social listening platform, and those that do lack the capacity to analyze the results or mount a response.
- Lack of community outreach through health promoters and other members of the interdisciplinary team.
- Communication channels and infodemic management mechanisms must be made sustainable.
- Lack of political support.
- There was no continuous assessment of the audiences to which each message should be addressed.
- Social media and other digital communication platforms are not systematically monitored for misinformation.
- Formal communication teams must be established of each of the areas involved (general coordination during emergencies).
- Pathways for generating and validating content and messages to the public must be optimized, and the content approval process must be defined clearly.
- Plans must be systematically updated; this should include actions to strengthen the indicators and, thus, strengthen communication in general.
- Human resources must be strengthened, given their great influence on communities.
- Funding must be secured for the procurement of tools and for training human resources.
- Innovative strategies must be developed and incorporated into preparedness and response plans.

- Health promotion and risk communication were not strengthened at the local level.
- There was a lack of training and involvement of community leaders on the subject of influenza and ORVs.
- Baseline social data from communities are lacking; these include finding out which languages are spoken, assessing living conditions, religious and cultural practices, trusted communication channels, and influencers.
- One problem shared by all countries was the lack of clear, immediate guidelines on how to respond to disinformation shared on social networks by organized groups; structured training activities or courses were sometimes available, but did not respond to this immediate need.

Conclusions

Lessons learned from tackling the H5N1 avian flu emergency in 2005, the influenza A(H1N1) pandemic in 2009, and the ongoing COVID-19 pandemic highlight the importance of implementing the core IHR (2005) capacities and demonstrate the immediate need for national planning processes in line with existing, flexible budget cycles to ensure pandemic preparedness and response, with a focus on respiratory viruses.

There has been remarkable development of capacities for: 1) influenza surveillance and control and COVID-19 integration; 2) laboratory networks at the global, regional, and national levels (national public health authorities and laboratories) working toward the timely detection of SARS-CoV-2; 3) logistical support in the procurement and distribution of reagents and other supplies; and 4) virtual and in-person training at national influenza centers and national reference laboratories, even during periods of international restrictions on mobility.

Countries in the Region have a variety of plans in place to manage respiratory virus preparedness and response, such as specific plans for influenza and COVID-19, which include other respiratory viruses. In some cases, these plans are included in the health sector's multi-hazard response framework. It is important for governments to analyze the legislative and regulatory mechanisms present in each country (national health policies, strategies and plans, and health security and emergency health plans) that support their single- or multi-hazard plans, ensure there are specific sections for each disease, and consider including respiratory pathogens.

Recent country experiences during the COVID-19 pandemic highlight the importance of strengthening mechanisms for coordination between the health sector and other relevant sectors in a health emergency. It is important that national governments jointly analyze strategies, mechanisms, methodologies, national plans, and stakeholders to promote increased coordination, maximize available resources, and reduce duplication of effort in preparedness and response to future pandemics caused by respiratory pathogens.

The networks built during the previous influenza epidemics and the COVID-19 pandemic are a valuable example of how activities can be harmonized, the development of resilient health systems in the Region can be strengthened, the technical leadership of ministries of health can be enhanced, and their linkage to multisectoral policies, programs, and activities can be facilitated to comprehensively address the preparedness and response to pandemics caused by respiratory pathogens.

Risk communication and community engagement stood out as a priority and cross-cutting theme which must be taken into account in future pandemics, with substantial room for improvement in building trust and credibility towards government actors, empowering communities, and managing the infodemic, translation of scientific information, and effective risk communication in social media.

Main recommendations

- Document success stories and lessons learned from the COVID-19 pandemic in the countries to: support the sustainability of innovations and acquired capacities; include specific and practical recommendations to strengthen prevention, preparedness, and response to future pandemics; and place emphasis on regional and subregional technical cooperation.
- Review global and regional recommendations and administrative and legal mechanisms to develop operational, integrated preparedness and response plans for pandemics caused by respiratory pathogens (according to the specific situations, contexts, and priorities).
- Establish a regional network for generation of real-time evidence to support decision-making at different time points during public health events.
- Continue the development of regional operational guidelines to facilitate the implementation of surveillance strategies, including genomic surveillance of SARS-CoV-2.
- Continue strengthening computer systems for influenza and ORV surveillance, ensuring the integration of all components to meet surveillance goals.
- Measure the impact of the pandemic on health personnel and surveillance teams.
- Strengthen health systems, including access to universal health coverage, addressing inequities, improving response capacity to public health emergencies, and ensuring sustainability during the event and in the recovery period.
- Strengthen risk communication beyond the scope of public or external communication, to include strategic actions for social listening and infodemic management, community engagement and consultation, and analysis of health behaviors. Preferably, this strengthening should take place within the framework of an updated or newly created nationwide multi-hazard risk communication strategy, which includes mechanisms for preparing and responding to health emergencies and dedicated human and financial resources.

Appendices

Agenda

Regional Workshop on Lessons Learned During the COVID-19 Pandemic: Respiratory Pathogen Pandemic Preparedness and Response 16–19 August 2022, Buenos Aires (Argentina)

Background

Based on lessons learned during the recent COVID-19 pandemic and the high likelihood of future respiratory pathogen pandemics, in April 2022 the World Health Organization published a policy brief (Strengthening pandemic preparedness planning for respiratory pathogens: policy brief, 27 April 2022)[1] which describes key elements for developing an integrated approach to respiratory pathogens and enhancing national and subnational operational capacities for such preparedness.

These operational preparedness plans for respiratory pathogen pandemics, as well as multi-hazard plans, substantially contribute to Member States maintaining their core capacities as required under the International Health Regulations (IHR) (2005).

The Infectious Hazard Management Unit of the Pan American Health Organization Health Emergencies Department (PHE/IHM) has organized this regional workshop with the purpose of compiling lessons learned during the COVID-19 pandemic on operational capacities in order to prepare for future respiratory pathogen pandemics.

Objectives

1. To review the implementation plans and achievements in implementation of the Pandemic Influenza Preparedness Framework 2018–2023.[2]
2. To document lessons learned during the COVID-19 pandemic that can serve as a reference for future pandemics, help strengthen national health systems in the Americas, and enhance related technical cooperation activities during the process of developing, updating, and pilot-testing pandemic preparedness plans.
3. To establish a roadmap for each country to develop its national operational and integrated pandemic preparedness plan for respiratory pathogens.

1 World Health Organization. Strengthening pandemic preparedness planning for respiratory pathogens: policy brief, 27 April 2022. Geneva: WHO; 2022. Available from: Strengthening pandemic preparedness planning for respiratory pathogens: policy brief, 27 April 2022 (who.int).

2 World Health Organization. Pandemic influenza preparedness (PIP) framework: partnership contribution (PC) preparedness high-level implementation plan II 2018-2023. Geneva: WHO; 2021. Available from: https://apps.who.int/iris/handle/10665/260538.

Tuesday, August 16, 2022 (Facilitator: Carolina Serrano)

Session: PIP Framework 2022–2023		
Time	**Activity**	**Presenter**
08:30-09:00	Registration	
09:00-09:10	Remarks from national authorities	
09:10-09:20	Security report (United Nations Department of Safety and Security, UNDSS)	Patricia de Valenzuela Juan Marcos Bosco
09:20-09:30	Welcome and overview of agenda	PAHO
09:30-09:45	Global context of the PIP Framework	Jennifer Barragán (WHO)
09:45-10:00	PIP Framework: Regional Implementation and Management	Jennifer Barragán (WHO)
10:00-10:20	Questions and feedback	
10:20-10:50	Coffee break	
10:50-11:50	Progress of the PIP Framework 2022–2023, lessons and needs identified in the context of COVID-19 (20 min/country) o Bolivia (Plurinational State of) o Colombia o Costa Rica	Country delegates
11:50-12:30	Discussion	All participants
12:30-13:30	Lunch	
13:30-14:30	Progress of the PIP Framework 2022-2023, lessons and needs identified the context of COVID-19 (20 min/country) o Dominican Republic o Guatemala o Nicaragua	Country delegates
14:30-15:20	Discussion	All participants
15:20-16:00	Progress of the PIP Framework 2022-2023, lessons and needs identified in the context of COVID-19 (20 min/country) o Haiti o Suriname	Country delegates
16:00-16:30	Coffee break	
16:30-17:00	Discussion	All participants
17:00-17:30	Conclusions on the PIP Framework	PAHO

Wednesday, August 17, 2022 (Facilitator: Ángel Rodríguez)

Session 1: Global, regional, and national context of respiratory virus pandemic preparedness		
Hora	**Actividad**	**Presentador**
08:30-08:45	Registration	
08:45-09:05	Opening remarks o Country delegate (Argentina) o Minister of Health o PAHO Director	Eva Jané Llopis Carla Vizzotti Carissa F. Etienne
09:05-09:15	Welcome and overview of agenda	PAHO
09:15-09:45	Core Capacities of the Region of the Americas under the International Health Regulations (IHR) (2005)	Tamara Mancero (PAHO)
09:45-10:00	Questions and feedback	
10:00-10:15	Coffee break	
10:15-11:15	Experiences with technical cooperation to support public health emergency preparedness plans o (WHO) Ioana Ghiga o (WHO) Tamara Mancero o (CDC) Ann Moen o (Ministry of Health, Argentina) Analía Rearte o (Ministry of Health, Argentina) Carla Moretti	Jairo Méndez (PAHO)
11:15-11:30	Questions and feedback	All participants
11:30-12:30	Access to medicines, vaccines, and supplies during public health emergencies o (Medicines and Health Technologies) Analía Porras o (Immunization) Álvaro Whittembury o (Revolving Fund) Ana Elena Chévez o (Strategic Fund) Nora Girón	Eduardo Azziz-Baumgartner (CDC)
12:30-12:45	Questions and feedback	All participants
12:45-13:00	Group photo	All participants
13:00-14:00	Lunch	
Session 2: Lessons Learned from the COVID-19 Pandemic (side session)		
14:00-15:30	• **Working Group 1.** Epidemiological Surveillance • **Working Group 2.** Laboratory Surveillance and Response • **Working Group 3.** National Deployment and Vaccination Plan (NDVP)	All participants
15:30-16:00	Coffee break	
16:00-17:00	• **Working Group 1.** Epidemiological Surveillance • **Working Group 2.** Laboratory Surveillance and Response • **Working Group 3.** National Deployment and Vaccination Plan (NDVP)	All participants

Thursday, August 18, 2022 (Facilitator: Tanya Escamilla)

Session 3: National Risk Communication and Community Engagement (RCCE) Plans		
Time	**Activity**	**Presenter**
08:30-08:45	Summary of previous day	PAHO
08:45-09:00	Risk communication in health emergencies and pandemic preparedness: PAHO technical framework	Tanya Escamilla (PAHO)
09:00-09:40	Experiences and challenges in RCCE (20 min/country) o Argentina o Guatemala	Country delegates
09:45-10:00	Questions and feedback	All participants
10:00-10:30	Coffee break	
10:30-10:40	Global experiences with RCCE	Supriya Bezbaruah (WHO)
10:40-12:30	**Working Group 4.** Lessons Learned in RCCE	All participants
12:30-13:00	Discussion	All participants
13:00-14:00	Lunch	
Session 4: Recommendations based on lessons learned from the COVID-19 pandemic		
14:00-14:30	Epidemiological surveillance (Working Group 1)	Rapporteur 1
14:30-15:00	Laboratory surveillance and response (Working Group 2)	Rapporteur 2
15:00-15:30	NDVP (Working Group 3)	Rapporteur 3
15:30-15:45	RCCE (Working Group 4)	Rapporteur 4
15:45-16:00	Coffee break	
16:00-17:00	Group discussion and closing remarks for the day	All participants

Friday, August 19, 2022 (Facilitator: Andrea Villalobos)

Session 5: Roadmap for each country to develop its national operational and integrated respiratory pathogen pandemic preparedness plan		
Time	**Activity**	**Presenter**
09:00-09:30	Respiratory Pathogens: Pandemic Preparedness Guide	Jennifer Barragán (WHO)
09:30-09:45	Questions and feedback	All participants
10:00-11:00	**Working Group 5.** Roadmap for Development of National Respiratory Pathogen Pandemic Preparedness Plan	All participants
11:15-11:30	Coffee break	
11:30-12:30	**Working Group 5.** Roadmap for Development of National Respiratory Pathogen Pandemic Preparedness Plan	All participants
12:30-12:45	Next steps and joint collaboration	All participants
12:45-13:00	Concluding remarks	All participants
13:00-14:00	Lunch	

Participants

Argentina	
Carla Vizzotti	Minister of Health
Analía Rearte	National Director for Epidemiology and Strategic Information, Ministry of Health
Carla Moretti	National Director for International Relations, Ministry of Health
Carlos Giovacchini	National Director for Epidemiology and Strategic Information, Ministry of Health
Hugo Feraud	National Director for Communicable Disease Control
Nathalia Katz	Representative, Directorate for Vaccine-Preventable Disease Control
María del Valle Juárez	Representative, Directorate for Vaccine-Preventable Disease Control
Carolina Rancano	Representative, Directorate for Vaccine-Preventable Disease Control
Marina Pasinovich	Program Management Coordinator
Viviana Molina	Director, Administración Nacional de Laboratorios e Institutos de Salud Dr. Carlos G. Malbrán
Elsa Baumeister	Coordinator, National Reference Laboratory for Influenza and Other Respiratory Viruses
Andrea Pontoriero	Staff member, National Reference Laboratory for Influenza and Other Respiratory Viruses
Cecilia Marzoa	Consultant, program management and international health diplomacy
Sonia Quezada Bolaños	Consultant, program management and health diplomacy
Santiago Reboreda	Director of Communications and Press, Ministry of Health
Eva Jane Llopis	PAHO/WHO Representative, Argentina
Wilmer Marquiño	Advisor, Health Surveillance, Disease Prevention and Control
Velén Pennini	Consultant, Vital Statistics and Information Systems (PAHO)
María Florencia Pérez	National consultant, Communicable Diseases (PAHO)
María Florencia Guedes	Consultant, Communications (PAHO)
Tomás Plibersek	Consultant, Communications (PAHO)
María Eugenia Page	Rotating Ministry liaison (PAHO)
Micaela Gauto	Rotating Ministry liaison (PAHO)
Bolivia (Plurinational State of)	
Marco Antonio Rocha	Statistical technician, Epidemiology
Leydi Roxana Loayza	Chief technical officer, National Influenza Center (NIC) Laboratory
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Maya Espinoza	Head of Epidemiological Surveillance Unit
Arletta Anez	PIP Framework Focal Point (PAHO)

Colombia	
Martha Lucía Ospina	Director-General of the National Institute of Health
Marcela Mercado	Director of Public Health Research
Ingrid García	PIP Framework Technical Officer and Focal Point (PAHO)
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Ruth Carolina Vásquez	Head of Health Surveillance Laboratory
Ana Yamileth Hernández	Medical Officer, Directorate for Immunization
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Daniel Alonso Reyes	PAHO Focal Point
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Selene González	Coordinator, Central Reference Unit for Epidemiological Surveillance
Diana Beatriz Sierra	Coordinator, Expanded Program on Immunization (EPI)
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Haiti	
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Jean-Denis Gladzdin	PIP Framework Focal Point (PAHO)
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Rosa Elena Mejía	PAHO Consultant

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Romeo Montoya	PAHO Advisor on Communicable Diseases and Determinants
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Suriname	
Vern Nanhoe	Acting Chief Epidemiologist, Bureau of Public Health
Madhu Rodjan	Medical Laboratory Technologist
Richard Kartomo	Acting Manager, Office of Communicable Diseases
Ameet Binda	Communication Policy Coordinator, Ministry of Health
Astrid van Sauers	PAHO Consultant
Oscar Mesones	PAHO Technical Officer
Centers for Disease Control and Prevention	
Ann Moen	Supervisory Health Scientist, Centers for Disease Control and Prevention
Eduardo Azziz-Baumgartner	International reference in epidemiology and prevention
World Health Organization	
Supriya Bezbaruah	Team Leader, WHO Epidemic Information Network High Impact Events Preparedness Unit
Ioana Ghiga	Technical Officer, High Impact Events Preparedness Unit
Jennifer Barragán	Project Manager, PIP Framework

Pan American Health Organization (HQ)	
Analía Porras	Chief, Medicines and Health Technologies Unit
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Tamara Mancero	Regional Advisor, International Health Regulations (PAHO)
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Shirley Quesada	Regional Advisor, Revolving Fund
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Carolina Serrano	International Consultant, Influenza Team
Jorge Jara	Technical Officer, Influenza Team
Juliana Leite	Laboratory Specialist, Influenza Team
Lidia Redondo	International Consultant, Influenza Team
Paula Couto	Technical Officer, Influenza Team
Sara Ferraz	International Consultant, Influenza Team
Tanya Escamilla	Communication Specialist, Health Emergencies
Álvaro Whittembury	Advisor to the Immunization Unit, PAHO Country Office in Ecuador

The latent threat of future pandemics caused by respiratory viruses with epidemic and pandemic potential is one of the problems facing public health. It is not enough to identify the lessons learned, but it is essential to reflect on how to learn from previous epidemics and pandemics; how to build the resilience of health systems and services; how to sustain the capacities, achievements and developments achieved; and, of course, how to take advantage of these experiences to ensure the improvement in the capacity of prevention, preparation, response and control in future events. This report compiles the exchange of experiences that serve as a reference to strengthen national health systems in the Region of the Americas and can guide technical cooperation activities in future pandemics. The face-to-face meeting was held in Buenos Aires (Argentina) between August 16 and 19, 2022, attended by approximately 120 people.

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