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UPDATE ON THE COVID-19 PANDEMIC IN THE REGION OF THE AMERICAS

Introduction

1. This document provides an update on the COVID-19 pandemic in the Region of the Americas and on the progress and challenges in implementing Resolution CD58.R9, adopted by the 58th Directing Council of the Pan American Health Organization (PAHO) in September 2020 (1), and Resolution CDSS1.R1, adopted by the Special Session of the Directing Council in December 2020 (2), in the period up to 31 March 2022, unless otherwise specified.
 2. As of 31 March 2022, the Region of the Americas had reported 31% and 44% of the global COVID-19 cases and deaths, respectively. Two countries of the Americas, the United States of America and Brazil, ranked in the top 10 countries reporting the highest numbers of cumulative cases globally. Four countries—the United States of America, Brazil, Mexico, and Peru—ranked in the top 10 for cumulative deaths globally.
 3. The course of the COVID-19 pandemic in the Americas remains highly uncertain. The decline in cases throughout South and Central America in the first quarter of 2022 is not a sign that the epidemic is over. While COVID-19 vaccine availability has significantly improved, vaccine hesitancy may further slow uptake by the population or prevent full achievement of vaccination potential. The continued vaccination rollout prioritizing high-risk groups, such as frontline health personnel and older people, remains a priority.
 4. At the same time, countries and territories in the Region continue to report persistent disruptions of varying degrees in the provision of essential health services, despite early evidence of service recovery. These disruptions highlight the difficulties in ensuring continuity of services and the need to strengthen resolution capacity, especially at the first level of care.
 5. A possible scenario is that, well into 2023, countries in the Americas will still face localized COVID-19 outbreaks, primarily in institutions (e.g., nursing homes, prisons), densely populated peri-urban areas, and rural settings. Significant heterogeneity in vaccination coverage may persist across subnational entities among the different age and
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population groups. The WHO Strategic Preparedness and Response Project for 2022 (3) includes three planning scenarios to guide COVID-19 response operations in the coming months and years:

- a) **Base case:** The virus continues to evolve but with significantly reduced severity over time. Periodic spikes in transmission may occur if there is a significant waning of immunity.
- b) **Worst case:** A more virulent and highly transmissible variant emerges against which vaccines are less effective and/or immunity against severe disease and death wanes rapidly.
- c) **Best case:** Future variants are significantly less severe and protection against severe disease is maintained.

6. This situation indicates that control of the COVID-19 pandemic in the Region will continue to require a comprehensive response with sustained health services network capacities, sustained public health and social measures, targeted vaccination operations, and outbreak control actions, including early detection, investigation and isolation of cases, and tracing and quarantine of contacts.

Epidemiological Situation

7. Between the detection of the first case in the Americas in January 2020 up to 31 March 2022, a cumulative total of 150,825,777 confirmed cases of COVID-19, including 2,704,078 deaths, were reported in the Region. Nearly a third of these cases (30.6%) and a smaller proportion of deaths (10.64%) were reported between 1 January 2022 and 31 March 2022. The highest numbers of monthly cases and deaths were reported in January 2021. The North America and South America subregions account for the highest proportion of cumulative cases (59% and 37%, respectively) and deaths (49% and 47%, respectively) as of 31 March 2022.

8. Several countries in the Region have reported an increased number of COVID-19 cases in the younger population. This might be related to greater exposure and limited vaccination in this group. During the second semester of 2021, approximately 65% of reported cases in the Region were between 25 and 64 years of age, but 57% of the deaths were in patients 65 years and older.

9. The emergence of SARS-CoV-2 viral lineages with increased transmissibility, which have been denominated variants of concerns (VOC), has been a distinctive feature of the second year of the COVID-19 pandemic. As of 31 March 2022, 54 countries and territories in the Region had reported the detection of at least one of the five SARS-CoV-2 VOC. All 54 of these countries and territories detected Delta, 51 detected the Alpha VOC, 49 detected Omicron, 43 detected Gamma, and 26 detected Beta. As of 3 April 2022, Omicron was the predominant variant sequenced in all subregions.

10. The most up-to-date epidemiological information on the pandemic can be found in the COVID-19 Information System for the Region of the Americas on the Pan American Health Organization website.¹

Health Services Continuity

11. Countries and territories in the Region have been challenged to maintain provision of essential health services throughout the pandemic. The Pan American Sanitary Bureau (PASB or the Bureau) collaborated with the World Health Organization (WHO) to carry out three rounds of a global pulse survey on continuity of essential health services during the pandemic, in 2020 and 2021. As of 31 December 2021, 26 of the 28 countries and territories in the Americas that responded to the third round of the survey reported continuing disruptions in the provision of essential health services. These disruptions have serious implications, particularly for the most vulnerable populations, such as elderly people and people living with chronic diseases and disabilities. The main disruptions reported were related to programs and services in the following areas: first level of care (70%), immunization (69%), care of older people (67%), nutrition (64%), neglected tropical diseases (53%), mental health, neurological, and substance use disorders (47%), communicable diseases (38%), and sexual, reproductive, maternal, newborn, child, and adolescent health (32%).

12. Additionally, most countries and territories in the Region are facing critical challenges to scaling up access to essential COVID-19 tools. Ninety percent reported at least one bottleneck hindering access to COVID-19 diagnostics, therapeutics, vaccination, and personal protective equipment (PPE), while 60% reported health workforce challenges for clinical management and 50% reported shortages in supplies and equipment for diagnostics and testing.

13. To gain a deeper understanding of obstacles to COVID-19 management and the continuity of essential health services, PASB supported the implementation of WHO's suite of health service capacity assessments in the context of the COVID-19 pandemic² in five countries in the Americas. COVID-19 safety measures were generally acceptable at the first level of care, but some strengthening is necessary in specific areas such as infection prevention and control (IPC) and PPE.

14. During the COVID-19 pandemic, the health workforce of the Americas has faced increased workload, stress, stigma, violence, and burnout along with personal risks of infection, quarantine, and death. Workplace conditions have included industrial actions, whistleblowing, disciplinary actions, and reduced possibilities for professional development. All of these challenges have occurred together with increasing demands for services. Health workers have been expected to take on new roles and tasks, often in the

¹ Available at: <https://paho-covid19-response-who.hub.arcgis.com/>.

² World Health Organization. Monitoring Frontline Service Readiness Capacities during the COVID-19 Pandemic. Available at: <https://www.who.int/teams/integrated-health-services/monitoring-health-services/monitoring-frontline-service-readiness-capacities-during-the-covid-19-pandemic>.

absence of a decent work environment that includes regular salary payment, overtime, and paid leave for recuperation. As of 29 November 2021, data from 41 countries and territories in the Americas shows that at least 2,379,335 COVID-19 cases have been confirmed among health care workers since the start of the pandemic, with almost 13,000 deaths. COVID-19 has disproportionately affected women health care workers, who constitute 70% of the global health workforce (4) and 89% of nurses in the Region of the Americas (5).

15. Health providers who participated in the COVID-19 Health Care Workers (HEROES) Study³ reported feeling stigmatized and/or discriminated against because of their work with COVID-19 patients. Study data revealed that between 14.7% and 22.0% of health care workers presented symptoms suggesting a depressive episode, and between 5% and 15% reported suicidal ideation. Less than one-third of the health professionals who said they needed psychological care received it (between 11% and 25%).

16. Health workers are of vital importance for health systems in the context of public health emergencies and beyond. However, troubling inequities persist in the availability, distribution, and quality of health workers between and within countries, between levels of care, and between the public and private sectors (6, 7). A gap of more than 600,000 health and care workers has been projected for the Americas in 2030 (8). Without health workers, health systems are nothing but buildings and technology. Without a well-qualified and well-distributed workforce, inequities will endure, and objectives for pandemic recovery and sustainable development will not be achieved.

Analysis of Progress Achieved

17. This section of the document provides a summary of activities by PASB since January 2020 in response to the COVID-19 pandemic. Specifically, it focuses on the progress achieved and challenges faced in implementing the following lines of action presented in COVID-19 Pandemic in the Region of the Americas (Document CD58/6) (9) and Update on the COVID-19 Pandemic in the Region of the Americas, COVAX Preparedness, and Equitable Access to COVID-19 Vaccines (Document CDSS1/2) (10), as per Resolutions CD58.R9 and CDSS1.R1, since September 2020:

- a) Strengthen leadership, stewardship, and governance.
- b) Strengthen epidemic intelligence.
- c) Strengthen health systems and service delivery networks.

³ The HEROES study is an international collaboration among researchers from 30 countries, led by Columbia University and the University of Chile, with support from PAHO in the Region of the Americas. Since May 2020, the HEROES study has evaluated 14,502 health workers from Argentina, Bolivia, Brazil, Chile, Colombia, Guatemala, Mexico, Peru, Puerto Rico, Uruguay, and Venezuela. (Note: The 20,328 participants reported in 2021 was a preliminary figure. After review, only 14,502 met the criteria for inclusion, hence the change.)

- d) Strengthen emergency operations response and supply chain.
- e) Support introduction of and access to COVID-19 vaccines.

18. The full range of PASB activities on COVID-19 implemented up to 31 December 2021 can be found in two reports available on the PAHO website: Pan American Health Organization Response to COVID-19 in the Americas: January-December 2020 (11) and Pan American Health Organization Response to COVID-19: Up to 31 December 2021 (12).

19. As of 2 May 2022, PASB has received over US\$ 424 million⁴ in financial contributions from a wide range of partners to support its response to the COVID-19 pandemic in the Americas. They include the governments of Belize, Canada, Colombia, Japan, Republic of Korea, New Zealand, Spain, Sweden, Switzerland, United Kingdom, and United States of America, as well as the European Union. The World Health Organization and its donors also made significant contributions. Other contributors include the Alma Jean Henry Charitable Trust, Caribbean Development Bank, Caribbean Confederation of Credit Unions, Central American Bank for Economic Integration, Corporación Andina de Fomento/Banco de Desarrollo de América Latina, Foundation for Innovative New Diagnostics, Fundación MAPFRE, Fundación Yamuni Tabush, Gavi, the Vaccine Alliance, Global Fund to Fight AIDS, Tuberculosis and Malaria, International Organization for Migration, Inter-American Development Bank (IDB), Mixed Fund for Technical and Scientific Cooperation Mexico-Spain, Rockefeller Foundation, United Nations (UN) Central Emergency Response Fund, United Nations Development Programme, United Nations Children's Fund (UNICEF), UN Development Coordination Office, UN Resident Coordinator's Office, UN Multi-Partner Trust Fund Office, UN Office for South-South Cooperation, World Bank Group, World Food Programme, and the World Health Organization Foundation, as well as individual donors to the PAHO COVID-19 Response Fund. The Organization's pandemic response also benefited from in-kind donations from Direct Relief, Facebook, Mary Kay Cosmetics, and Twitter, as well as strategic partnerships with Salomón Beda, Sony Music Latin, and Global Citizen. Details on these donations can be found on the PAHO website.⁵

Strategic Line of Action 1: Strengthen leadership, stewardship, and governance

20. Since April 2020, PASB has been convening the ministers of health of the Americas for periodic briefings related to the COVID-19 pandemic. In national responses to the pandemic, health policy has moved beyond the health ministries, with leadership exerted by heads of state and heads of government. In general, effective national responses have been both holistic and agile, featuring centralized leadership, coordination across sectors and administrative levels, clear decision making mostly based on scientific advice, efforts to build trust of the population, and, most importantly, ability to change the course of action to confront the rapidly unfolding pandemic.

⁴ Unless otherwise indicated, all monetary figures in this report are expressed in United States dollars.

⁵ Available at:

<https://www.paho.org/en/topics/coronavirus-infections/coronavirus-disease-covid-19-pandemic/paho-covid-19-response-fund>.

21. PAHO Member States have in place diverse community-wide non-pharmaceutical measures to fight the pandemic. However, their introduction, adjustment, and discontinuation should be anchored in evidence or based on granular and multi-source data. Several measures, including the use of masks, lack a robust set of indicators that would facilitate more efficient risk communication and increase adherence by the population. Document CD58/6, COVID-19 Pandemic in the Region of the Americas (9), calls for maintaining a whole-of-government and whole-of-society approach.

22. As of 10 May 2022, PASB has supported intra-action reviews in Argentina, Belize, Bolivia, Brazil, Chile, Ecuador, and Panama, using the methodology and tools prepared by the WHO Secretariat for Intra-Action Reviews in July 2020 (13) and April 2021 (14). PASB will work with relevant WHO Collaborating Centers⁶ to support other countries and territories in this process, according to their interests and requests. The Bureau also supported Uruguay in documenting its response to COVID-19 (15). The COVID-19 pandemic has highlighted aspects of the national response to public health emergencies that had not been highly visible before (16).

23. Since mid-2020, a public health approach to resuming non-essential international traffic has been the object of intense debate, at national and international levels. Non-essential travel is particularly critical for countries and territories whose economies are highly dependent on tourism. Accordingly, since July 2020, PASB has been publishing risk-based guidance to inform the decision-making process for resuming non-essential international travel (17, 18). PASB also contributed to the WHO document Considerations for Implementing a Risk-Based Approach to International Travel in the Context of COVID-19 (19).

24. The 11th meeting of the WHO Emergency Committee under the International Health Regulations (2005) regarding the COVID-19 pandemic that took place on Monday 11 April 2022 concurred that the pandemic remains a Public Health Emergency of International Concern. The WHO Director-General issued the Committee's advice to States Parties as Temporary Recommendations under the International Health Regulations (IHR) to lift international traffic bans and continue to adjust travel measures, based on risk assessments, and to not require proof of vaccination against COVID-19 for international travel as the only pathway or condition permitting international travel.⁷

25. Within that context, the range of international travel-related measures implemented by the 35 PAHO Member States has been extremely broad and rapidly changing, relying

⁶ CHI-23, Universidad del Desarrollo, Chile, WHO Collaborating Centre for the International Health Regulations (IHR); USA-359, Centers for Disease Control and Prevention (CDC), United States of America, WHO Collaborating Center for Implementation of IHR Core Capacities; USA-453, Johns Hopkins University, United States of America, WHO Collaborating Center for Global Health Security.

⁷ Statement on the Eleventh Meeting of the International Health Regulations (2005) Emergency Committee regarding the Coronavirus Disease (COVID-19) Pandemic is available on the WHO website at: [https://www.who.int/news/item/13-04-2022-statement-on-the-eleventh-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-coronavirus-disease-\(covid-19\)-pandemic](https://www.who.int/news/item/13-04-2022-statement-on-the-eleventh-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-coronavirus-disease-(covid-19)-pandemic).

at times on a complex set of measures. International travel-related measures adopted by Member States include a selective⁸ or general entry ban for conveyances or individuals; online registration of prospective travelers prior to departure; selective or subsidiary⁹ quarantine of incoming travelers; the presentation of proof of negative test results for the SARS-CoV-2 virus; testing incoming travelers for SARS-CoV-2 virus upon or after arrival; waiving of entry requirements for incoming travelers based on proof of previous SARS-CoV-2 virus infection, and/or proof of vaccination against COVID-19. As a general trend, Member States are easing or totally lifting restrictions for international travel. However, as of 10 May 2022, 15 Member States required proof of vaccination against COVID-19 as condition for entry, which is not consistent with the IHR provisions or the current Temporary Recommendations.

26. PASB has provided guidance (20), in line with the United Nations (21), emphasizing that “the single most significant step that countries can take to hasten the reopening of schools and education institutions is to suppress transmission of the virus to control national or local outbreaks.”

27. Pursuant to World Health Assembly Resolution WHA73.1 (22), the international community’s response to the COVID-19 pandemic was the object of intense scrutiny by the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme (IOAC),¹⁰ by the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response (COVID-19 IHR RC),¹¹ and by the Independent Panel for Pandemic Preparedness and Response (IPPPR).¹² A subset of the recommendations provided by both the IOAC (11 recommendations) and the IPPPR (six recommendations) explicitly addresses the response to the current COVID-19 pandemic by the WHO Secretariat and WHO Member States.

28. The overall future of governance to prepare for and respond to health emergencies is intertwined with the follow-up, by the 75th World Health Assembly, on Decision EB150(6) regarding the prospective establishment of a Standing Committee on Pandemic and Emergency Preparedness and Response (23).

29. PASB, working in coordination with ministries of health and in collaboration with academic institutions, nongovernmental organizations (NGO), community and civil society organizations, and local governments, provided ongoing support to countries and territories to implement targeted interventions for populations in situations of vulnerability,

⁸ “Selective” means based on the geographic origin of the journey of the incoming conveyance or traveler.

⁹ “Subsidiary” means the requirement is applied only if other entry requirements are not met by the incoming traveler.

¹⁰ Information about the Independent Oversight and Advisory Committee for the WHO Health Emergencies Programme is available at: <https://www.who.int/groups/independent-oversight-and-advisory-committee>.

¹¹ Information about the Review Committee on the Functioning of the International Health Regulations (2005) during the COVID-19 Response is available at: <https://www.who.int/teams/ihr/ihr-review-committees/covid-19>.

¹² Information about the Independent Panel for Pandemic Preparedness and Response is available at: <https://theindependentpanel.org/>.

including for clinical care, vaccination, and public health and social measures. The groups in situations of vulnerability targeted were, among others, urban deprived populations, indigenous populations, youth, LGBTBI+ people, disabled people, informal workers, people living in informal settlements, migrants, children, and inmates.

30. In relation to the implementation of non-pharmacological public health measures, during the latter half of 2021 PASB provided targeted support to 19 countries and territories, guided by the PAHO publication *Guidance for Implementing Non-Pharmacological Public Health Measures in Populations in Situations of Vulnerability in the Context of COVID-19* (24). These interventions reinforced the importance of community participation and the key role of civil society organizations (CSO). In fact, according to a PASB mapping of 404 CSOs from all Latin American and Caribbean (LAC) countries, CSOs deployed a myriad of actions to face the pandemic, addressing communication, public health, biomedical, and social issues and often demonstrating capacities beyond those shown in their mission statements. Given that markets are an important point of transmission in many countries, PASB developed and published *Recommendations to Prevent COVID-19 Transmission at Food Fairs and Markets* (25) and supported their targeted implementation in Nicaragua y Peru.

31. PASB has been providing longstanding support to countries and territories to implement and/or strengthen their disaster/emergency coordination mechanisms. By the end of 2021, 32 countries and territories in the Region had reported having a national committee for health disaster/emergency response and an Emergency Operations Center (functioning in 30 of them and in the process of being activated in the other two). Twenty-six countries have a national multidisciplinary health emergency response team. Intra- and intersectoral coordination mechanisms for emergency and disaster response have been key to pandemic response in the health sector at the national, subnational, and local levels. The increase in interaction between the different technical entities, planning entities, health services networks, and logistical-operational areas reaffirms the importance of having spaces, procedures, methods, and tools for collecting and analyzing information for surveillance and response to health emergencies and disasters.

32. In September 2021, the 59th Directing Council of PAHO approved the *Strategy for Building Resilient Health Systems and Post-COVID-19 Pandemic Recovery to Sustain and Protect Public Health Gains* (Document CD59/11) (26). This strategy recognizes the significant impact the pandemic has had on health, lives, and livelihoods in the Americas and outlines actions required by Member States to address the systemic and structural deficiencies in health systems and emergency preparedness and response. Similarly, the strategy emphasizes the need to strengthen leadership, stewardship, and governance through a renewed focus on the essential public health functions (EPHF). As of 30 April 2022, PASB has supported 10 countries in conducting multisectoral participatory exercises to measure institutional capacities based on the renewed EPHF framework launched in 2020.

33. Public domestic resources are expected to continue bearing most of the burden for the health sector response to COVID-19 in the Region. Despite an estimated contraction of

7.7% of gross domestic product (GDP), which contributed to a decline in tax revenues of 0.5 percentage point of GDP in 2020, Latin America reached the highest level of total central government spending since 1950, at 24.7% of GDP (27).¹³ Additionally, to complement domestic resources, several international financial institutions and other donors have provided funding opportunities to countries in the Region. Examples include *a)* the World Bank's COVID-19 Fast Track Facility (\$242.5 million approved for 12 countries) and dedicated funding for COVID-19 vaccination (\$1.3 billion approved for eight countries); *b)* the Inter-American Development Bank's operational response to COVID19 (immediate public health response funds of \$886 million approved for 11 countries); *c)* the Global Fund's COVID-19 response mechanism (\$61 million base allocation to 19 countries and six multi-country projects); and *d)* Gavi/COVAX Facility support for vaccine delivery (\$775 million globally, beyond vaccine procurement).¹⁴

Strategic Line of Action 2: Strengthen epidemic intelligence

34. An essential part of the Bureau's response has been to work with countries to strengthen their surveillance systems. PASB continued to conduct Event-Based Surveillance (EBS) while also supporting countries to boost their Indicator-Based Surveillance (IBS). This joint approach improved the capacity of surveillance systems to detect COVID-19 cases. It also facilitated the detection of specific risk factors and vulnerabilities among indigenous and Afro-descendant populations in the context of the COVID-19 pandemic.¹⁵

35. The importance of continued surveillance of influenza viruses is well recognized, given their epidemic and pandemic potential. Accordingly, PASB has worked closely with Member States for over a decade to develop and strengthen a regional surveillance network, the Severe Acute Respiratory Infections network (SARInet). Based on sentinel sites, it detects influenza and other respiratory viruses and characterizes them genetically, clinically, and epidemiologically.¹⁶ In this network, influenza-like illnesses (ILI) and severe acute respiratory infections (SARI) are detected and reported in primary health care centers and in hospitals. Together with Member States, PASB has stepped up efforts since 2021 to fully integrate COVID-19 into this ongoing sentinel surveillance system of influenzas and other respiratory viruses. To date, 25 countries have integrated COVID-19 surveillance into their SARI/ILI surveillance systems. Such integration is necessary to guarantee the medium- and long-term sustainability of COVID-19 transmission monitoring in countries and throughout the Region.

36. PASB supported expansion of the Epidemic Intelligence from Open Sources (EIOS) platform to five countries in the Region to enhance their capacity for Event-Based

¹³ The statistic refers to 16 countries of Latin America, as shown in Figure I.6 of the source.

¹⁴ WHO Vaccine Deployment Coordination Group, update 12 May 2021 [unpublished internal document].

¹⁵ Epidemiological updates have been developed to address COVID-19 among indigenous people. The most recent was published 2 December 2021. Available at:

<https://www.paho.org/en/epidemiological-alerts-and-updates>.

¹⁶ The reports are available at: <https://www.PABS.org/en/influenza-situation-report>;
<https://www.paho.org/en/influenza-situation-report>.

Surveillance of COVID-19 and other emerging infectious diseases. The EIOS platform enables multiple communities of users to share and collaboratively assess information about outbreak events in real time, which enhances the capacity to conduct ongoing risk assessment at the regional, national, and subnational levels.

37. PASB has developed a Geo-Hub¹⁷ for the Region to provide public health modeling and mapping tools for surveillance and monitoring of pandemics. The regional Geo-Hub includes a series of dashboards and epidemiological data updated daily. It also comprises four subregional and 56 country/territory geo-hubs for the Americas. In addition, the public can consult PAHO's interactive dashboard showing the cumulative numbers of cases and deaths, cumulative incidence rates for cases and deaths, and several other epidemiological indicators reported by countries and territories. This real-time information has been crucial in supporting countries with their preparedness and response and in promoting international coordination and awareness of the situation in the Region.

38. Tracking, analyzing, and forecasting epidemiological trends is key to an effective response. PASB produced its first epidemiological alert on the novel coronavirus on 16 January 2020. Between that date and 31 March 2022, it has disseminated 47 epidemiologic updates and alerts on the regional and subregional epidemiological situation and related COVID-19 topics. Weekly reports are published with surveillance indicators for SARS-CoV-2 as well as influenza and other respiratory viruses. As of 31 March 2022, 38 of the 56 countries, territories, and areas in the Americas have reported this data. Meanwhile, PASB continues to analyze trends in the Region, particularly through the collection of COVID-19 nominal case data. As of 31 March 2022, approximately 69% of cases and 50% of deaths were captured for analysis.

39. Seroprevalence studies have provided valuable data on how the virus has spread since the onset of the pandemic. In November 2020 PASB launched a dashboard¹⁸ with seroprevalence studies in Latin America and the Caribbean, giving details on the study design, sampling method, sample sizes, and other relevant information about individual studies. Updating of this dashboard was discontinued in July 2021, but PASB continues to coordinate with WHO to upload information for the Americas to the global dashboard.¹⁹

40. In collaboration with GOARN, the Global Outbreak Alert and Response Network, PASB trained 35 countries and territories to use the Go.Data app. The app, developed by WHO and partners, supports investigation and management of cases, follow-up of contacts, and real-time visualization of chains of transmission. Twenty-four countries and territories have downloaded and installed the system, but only 17 are currently using it actively.

41. Laboratory-based surveillance, necessary to monitor COVID-19 disease trends, relies on data produced in clinical and/or public health laboratories. To strengthen laboratory diagnostics capacity, PASB has supported countries and territories with data

¹⁷ Available at: <https://paho-covid19-response-who.hub.arcgis.com/>.

¹⁸ Available at: <https://ais.paho.org/phip/viz/COVID-19Seroprevalence.asp>.

¹⁹ Available at: <https://serotracker.com/en/Explore>.

review, virtual trainings, troubleshooting sessions, and support to ensure the availability of validated tests and SARS-CoV-2 reference molecular assays. The Americas was the first WHO region to provide its Member States with laboratory diagnostic kits, and by the first quarter of 2020 all 35 Member States had the capacity for molecular diagnostic testing for SARS-CoV-2. Early in the pandemic, PASB also activated the public health laboratory network in the Region, including specialized referral laboratories with demonstrated expertise in the molecular detection of respiratory viruses. As of 31 March 2022, PASB has provided approximately 693,900 swabs and sampling kits, along with other critical material and laboratory supplies such as primers, probes, plastic materials, and reagents, for over 11.3 million reactions/tests to more than 35 countries and territories. Additionally, PASB has provided more than 3,474,000 antigen-detecting rapid diagnostic tests (Ag-RDT) as part of the strategy to increase diagnostic capacity, including in remote areas. Member States have also procured almost 11.3 million reactions/tests through the PAHO Regional Revolving Fund for Strategic Public Health Supplies (the PAHO Strategic Fund).

42. Created in March 2020 by PASB together with Member States and partners, the COVID-19 Genomic Surveillance Regional Network (COVIGEN) has been an indisputable asset for the timely characterization of viral circulation when VOCs emerge.²⁰ PASB continues to work closely with laboratories in the Region to further develop national molecular sequencing capabilities, or, for those countries without such in-country capacities, to refer specimens for sequencing to regional reference laboratories. As of 31 March 2022, 30 countries and territories are participating in the network, and over 314,000 SARS-CoV-2 specimens from LAC Member States have been sequenced. In addition to the two original laboratories in Brazil and Chile, six regional reference laboratories in Colombia, Costa Rica, Mexico, Panama, Trinidad and Tobago, and the United States of America have been added since 2020, resulting in optimal coverage for all subregions.

Strategic Line of Action 3: Strengthen health systems and service delivery networks

43. Response to the COVID-19 pandemic requires health services to deliver patient care that is coordinated and integrated across the different levels of complexity, with availability of an uninterrupted supply of medicines and devices at all health care facilities, including those in remote areas. Many countries and territories in the Region have been challenged to deliver health services in this manner, even though all have implemented measures to expand the capacities of health services networks for effective management of COVID-19 patients and for the continuity of essential health services. Measures have included expansion, redeployment, and training of human resources, procurement of essential commodities, budgetary allocations, and innovations in service delivery modalities. PASB has provided various types of ongoing support to countries and territories to implement these measures, including deployment of personnel and/or supplies to 40 countries and territories in the Region. The Bureau has provided technical guidance,

²⁰ Information on the COVID-19 Genomic Surveillance Regional Network is available at: <https://www.paho.org/en/topics/influenza-and-other-respiratory-viruses/covid-19-genomic-surveillance-regional-network>.

training, and sharing of experiences to all countries and territories as needed for the reorganization of health services and the expansion/strengthening of capacities to respond to the COVID-19 pandemic. From the start of the pandemic through 26 April 2022, the Virtual Campus for Public Health has offered 36 courses related to COVID-19 in different languages; these have been used by 43 countries and territories in the Americas, enrolling 1,170,635 participants. PASB has also trained more than 70,000 health workers in various areas related to case management and therapeutics.

44. The first level of care plays a critical role in identification of COVID-19 cases, containment of expansion of cases, timely management of ambulatory cases in the community, and continuity of essential health services. All 28 countries and territories responding to the above-mentioned WHO pulse survey are implementing actions to mitigate disruptions in the provision of essential health services and promote service recovery (28). These include recruitment of additional health personnel, redistribution of tasks, and optimization of roles (84% of countries and territories); procurement of surge commodities (84%); community communications (80%); and provision of home-based care and telemedicine (67%). PASB provided guidance, facilitated the sharing of experiences, and monitored the continuity of essential health services through implementation of the WHO pulse survey.

45. The pandemic is having a major impact on the mental health of populations in the Americas. Studies show high rates of depression and anxiety, among other psychological symptoms, particularly among women, young people, people with preexisting mental health conditions, health workers, and people living in vulnerable conditions. Yet mental health services in the Region continue to be severely disrupted. As of 31 December 2021, 47% of countries and territories reported disruptions to services for mental, neurological, and substance use disorders, compared to 60% one year earlier (at that time, mental, neurological, and substance use services were experiencing the highest rate of disruption of all essential health services categories). Since 2020, PASB has provided ongoing technical cooperation to countries and territories in key areas related to mental health and psychosocial support (MHPSS). This has included support to 24 countries and territories in advancing their MHPSS coordination mechanisms, to 20 countries and territories in delivering remote MHPSS interventions, and to 24 countries and territories in implementing the mhGAP strategy and plans. PASB developed a suite of technical and communications materials to address MHPSS during COVID-19 for the general population and for vulnerable groups, including frontline and health workers, and facilitated training and capacity building on MHPSS through virtual courses and more than 70 webinars. PASB is also promoting comprehensive reforms of mental health services under the WHO Special Initiative for Mental Health. Paraguay is already participating, and PASB provided technical support for Argentina's inclusion. As part of this process, Argentina has launched

a new national strategy to address mental health and substance abuse.²¹ Finally, the Bureau launched the High-level Commission on Mental Health and COVID-19 on 6 May 2022.²²

46. Between March 2020 and September 2021, when countries were facing peaks in cases, 10 countries and territories in the Region had a total increase of 55,157 intensive care unit (ICU) beds. This increase represented a 108% growth in critical care capacity. As of 30 April 2022, the increase compared to March 2020 dropped to 86%, showing that countries are adjusting their capacity according to the pandemic peaks. ICU occupancy rates also varied, from 59% in March 2020 to 58% in September 2021 to 32% in April 2022, remaining above 80% in many countries for several months but decreasing significantly over time. It is noteworthy that the national average ICU occupancy rates of the countries differ considerably from the rates in capital and large cities. For example, in April 2022 Brazil reported a national ICU occupancy rate of 30%, but Rio de Janeiro had a rate of 83%. Mexico reported an overall occupancy of 3%, but Mexico City was at 45%.

47. The demand for ICU beds during the pandemic has lasted longer than expected, resulting in limitations to the supply of COVID-19 services. Actions to adapt the intensive care supply in different countries have responded to factors such as the availability of human resources and the severity of the pandemic. In general, two scenarios have been observed. Some countries significantly increased intensive care beds and kept them available to respond to the variations of the pandemic, thus generating temporary spaces with low occupancy. Other countries progressively adapted according to the peaks of the pandemic, modulating the number of beds and maintaining optimal occupancies above 80% of installed capacity. Both scenarios required *a*) a high financial investment for technological adaptation and *b*) a maximum use of specialized human resource capacity. The ability to reduce or expand the supply of services, as needed, can have substantially different results in terms of the consumption of human, technical, and material resources, thus affecting the ability to sustain the response indefinitely.

48. PASB has continued to provide guidance for the expansion of hospital services and critical care capacity, including estimates of hospital capacity requirements, planning of resources needed, management of critical beds, and coordination of care, to respond to the surge of COVID-19 patients. Virtual missions were also conducted to support countries and territories whose hospitals found themselves at a breaking point amid the COVID-19 surge. In those countries and territories, a key mitigation strategy has been the mobilization of Emergency Medical Teams and/or technical guidance within the Emergency Medical Teams (EMT) and Alternative Medical Care Sites (AMCS) strategy.

49. The role of Emergency Medical Teams and Alternative Medical Care Sites is recognized as key to the expansion of capacity to meet needs created by the exponential increase in patients due to COVID-19. PASB has therefore provided guidance, training, and recommendations (29) to support countries and territories in establishing

²¹ Information from: <https://www.who.int/initiatives/who-special-initiative-for-mental-health>.

²² Information from: <https://www.paho.org/en/events/launch-high-level-commission-mental-health-and-covid-19>.

comprehensive medical surge capacity response within their national health services networks. From the start of the pandemic up to 6 May 2022, 24 countries reported 300 national EMTs deployed as well as 393 AMCS made operational, providing a total of 50,526 inpatient beds and 2,285 critical care beds. In addition, there have been 59 regional EMT missions supporting countries in clinical care and COVID-19 vaccination efforts, with a strong focus on providing access to migrants and indigenous populations in border and remote areas. EMTs and AMCS also played important roles in major concurrent emergencies, such as Hurricanes Eta and Iota, which impacted Colombia and some Central American countries in 2020, and the August 2021 earthquake in Haiti. In Haiti, PASB supported the Ministry of Health to activate medical coordination and information cells (CICOM) and coordinate the deployment of 18 international EMTs who treated more than 35,000 patients. PASB works with its partners and the regional network of EMT focal points to coordinate local responses and compliance with COVID-19 recommendations.

50. PASB created an Oxygen Technical Group (OTG) to evaluate limitations experienced by countries and territories that have seen an increase in the number of patients requiring oxygen support therapy during the pandemic. The OTG provides 21 countries and territories with comprehensive technical support, including locally adapted recommendations, covering clinical approaches, organization of health services (optimizing existing infrastructure, strengthening technical capacities, and working in integrated networks), capacity building, and assessment of local capacities. The OTG has also developed multimedia packages²³ and guidance documents (30, 31) to promote recommendations with good practices for using medical oxygen effectively and optimizing the adoption and procurement of pressure swing adsorption (PSA) oxygen plants.

51. PASB has developed Workforce Planning Surge Capacity tools for COVID-19. It has also supported countries to initiate policy dialogue about task-sharing plans and the management and regulation of health professionals to better confront COVID-19, and to build capacity in medical and nursing faculties to expand the roles of doctors and nurses in primary care. Many countries have promulgated legal and normative tools for the management of human resources for health. The availability and safety of health care workers has been a critical factor in expanding services to respond to the pandemic and in making adaptations to ensure the continuity of essential services.

52. Reinforcing compliance with standard and transmission-based precautions, including hand hygiene practices, use of PPE, and cleaning and disinfection of medical devices, has been a priority for countries and territories and for PASB from the onset of the pandemic. As of 25 April 2022, 33 countries and territories continued to report having a national IPC program along with water, sanitation, and hygiene (WASH) standards in health care facilities. In 2021, PASB updated guidelines on assessment of IPC practices for COVID-19 isolation areas in health care facilities and provided virtual country

²³ Curso básico para la planificación y gestión del oxígeno medicinal, available at: <https://www.campusvirtualesp.org/es/curso/curso-basico-para-la-planificacion-y-gestion-del-oxigeno-medicinal>; and Infografía: Uso sostenible del oxígeno en 10 videos, available at: <https://www.paho.org/es/documentos/infografia-uso-sostenible-oxigeno-10-videos>.

assessment²⁴ of IPC core components (32). Additionally, PASB launched medPPE, a mobile application that provides detailed information on the personal protective equipment that health personnel should use depending on their role, workplace, and level of exposure. PASB is also supporting some countries to enhance their respiratory protection programs with the provision of guidelines, supplies, and training. As of 25 April 2022, PASB has provided IPC training sessions to more than 22,000 people, including IPC practitioners, health care workers, logisticians, hospitality workers, and others at higher risk of exposure to COVID-19.

53. In response to the rapidly evolving nature of the COVID-19 pandemic and the accumulating scientific research, PASB has implemented an agile and adaptive knowledge translation mechanism to identify, synthesize, and disseminate the best available evidence for rapid decision making and to provide guidance on clinical management for all phases of the disease (critical and severe disease care, mild and moderate disease care, and home-based care) (33, 34). Although the Region has seen an increase in cases with the new variants, the foundation of clinical care remains the same. Most countries and territories are adapting/aligning and implementing the PAHO/WHO guidelines for the clinical management of patients according to disease severity and the local context.

54. To address the evidence gap and strengthen decision making, PASB has continually updated and compiled the best available evidence on the efficacy and safety of therapeutics (35).²⁵ The Bureau has issued guidelines for managing patients with COVID-19, and has provided support to improve uptake at all levels of care. PASB has also supported the strengthening of national rapid evidence-informed mechanisms and has provided guidance to address the use, outside of research settings, of pharmaceutical interventions not proven safe and efficacious for COVID-19. These interventions, which may not be beneficial and may even harm patients, raise ethical concerns. The Bureau's conceptualization of ethical criteria and recommendations for the ethical use of unproven interventions for COVID-19 (36) has been adopted by WHO for emergencies beyond the current pandemic (37). Finally, countries and territories are funding and promoting research in a variety of disciplines to address the pandemic (38, 39)²⁶ and have taken action to establish strategies and procedures to streamline ethics review (40). Yet the ethical oversight of ongoing COVID-19 research is still challenging, primarily due to the number of studies to oversee and the volume of emerging evidence. PASB has led a Region-wide reflection on the lessons learned from COVID-19 to strengthen the Region's capacity to conduct research ethically in future emergencies. These lessons, along with the Region's

²⁴ In Belize, The Bahamas, and Turks and Caicos.

²⁵ This 35th edition of the evidence review includes 588 randomized control trials and examines 185 therapeutic options.

²⁶ The following countries and territories have registered clinical trials or observational studies in the WHO International Clinical Trials Registry Platform: Argentina (13), Bahamas, Barbados, Belize, Bolivia (2), Brazil (41), Canada (64), Chile (8), Colombia (13), Costa Rica (2), Cuba (13), Curaçao, Dominica, Dominican Republic, Ecuador (5), El Salvador, Grenada, Guatemala, Haiti, Honduras (3), Jamaica, Mexico (25), Montserrat, Paraguay, Peru (9), Saint Kitts and Nevis, Saint Lucia, Trinidad and Tobago, United States of America (395), Uruguay, and Venezuela.

challenges with respect to health research, have been presented and discussed in regional bilingual dialogues.²⁷

55. The Bureau has been collaborating closely with WHO and other global partners and stakeholders to advance clinical research, expand the knowledge base, and facilitate the exchange of experiences and expertise of frontline health providers through the WHO Global Clinical Platform for COVID-19. This platform collects anonymized clinical data on hospitalizations and suspected or confirmed cases, which in turn supports the clinical characterization of the disease, including the natural history of COVID-19, prognostic factors, and outcomes. PASB has been working closely with 11 Member States and partners to use the clinical platform, which currently has more than 85,000 cases recorded from the Americas.

56. Although post-COVID-19 conditions are more common in patients who developed the severe form of the disease, there are reports of individuals who had moderate disease but experienced some degree of sequelae (mainly respiratory, neurological, and psychological). Post-COVID-19 functional impairment can limit a person's ability to perform activities of daily living, impact professional performance, and hinder social interaction. During 2021, PASB established a working group on post-COVID-19 conditions to provide a better understanding of them and support countries in the recognition and development of patient care pathways.

57. The pandemic has drastically affected the Region's national immunization programs (NIP), especially the delivery of and demand for immunization services in communities and health centers. Globally, it has affected the timely availability and freight costs of many vaccines. The PAHO Revolving Fund for Access to Vaccines (the Revolving Fund) has played a critical role in ensuring sustainability of immunization supply chains (for vaccines, safe injection devices, and cold chain equipment) during the pandemic. PASB also continues to work closely with NIPs in preemptive planning for fluctuations in national vaccine demand, triaging supply allocations and monitoring national vaccine inventories. Accurate demand planning has become more important than ever to minimize the risks of interrupted access to life-saving vaccines. In 2020 and 2021, the total value of procurement by the Revolving Fund reached \$750 million and \$1.07 billion respectively, and the Revolving Fund Capital Fund provided critical bridge-funding support to requesting Member States.

Strategic Line of Action 4: Strengthen emergency operations response and supply chain

58. Countries continue to face a complex market for procuring supplies and medicines related to COVID-19. The cause is multifactorial and outside the managerial capabilities of countries and of the Revolving Fund. Accordingly, to support countries and territories in the Region, PASB continues to work tirelessly with other UN agencies, partners,

²⁷ Upcoming publication (June 2022): Catalyzing ethical research in emergencies. Ethics guidance, lessons learned from the COVID-19 pandemic and pending agenda.

international NGOs, and donors, including through the COVID-19 Supply Chain Inter-Agency Coordination Cell, to secure the supplies that countries need.

59. PASB has also increased its operational capacities for procuring, receiving, warehousing, and shipping emergency supplies from its Strategic Reserve in Panama through enhanced partnership and cooperation with international and regional partners (humanitarian and commercial). Cold chain management capacities have improved. Lean inventory models provide great efficiency and cost-effectiveness in normal circumstances but are the opposite of the “just in case” strategy that calls for holding more inventory in reserve to sustain response capacities in times of crisis.

60. In 2021, some countries in the Region with the capacity to produce, regulate, and export medical commodities closed international commercial routes to prioritize internal availability of urgently needed resources amid surges in COVID-19 cases. Additionally, there has been an overall shift in the market toward the production of COVID-19-related items that generate higher and faster turnover. This has had a direct impact on the prices of some essential items and on their availability to many countries in the Region. Alongside the decrease in availability of essential health supplies and medicines necessary for the COVID-19 response, such as anesthetics and ICU medicines, the availability of some other health commodities (e.g., PPE, laboratory supplies, sanitation supplies, and biomedical equipment) has increased in response to higher demand. These unstable market conditions present a critical challenge to efforts to ensure timely access to diagnostics, medical devices, new vaccines, and therapeutics for all countries and territories.

61. The 59th Directing Council in September 2021 approved the document *Increasing Production Capacity for Essential Medicines and Health Technologies* (Document CD59/8) (41) and the corresponding Resolution CD59.R3 (42). Responding to the mandate of the Resolution, PASB launched the Regional Platform to Advance the Manufacturing of COVID-19 Vaccines and other Health Technologies in the Americas. This platform will foster research and incentivize the development and manufacturing of essential and strategic health technologies, expanding manufacturing capacities, facilitating information exchange, and promoting cooperation between the public and private sectors in the health, industry, and science and technology sectors. Within this framework, PASB, in coordination with WHO, selected two institutions in the Region to receive technology transfer from the WHO global hub at Afrigen, South Africa, for the development and production of mRNA-based vaccines: Bio-Manguinhos/Fiocruz in Brazil and Sinergium Biotech in Argentina. The first training activity took place at Afrigen’s facilities in South Africa during the first week of March 2022, and a second meeting for knowledge exchange and strategic coordination took place during the first week of May 2022 at Bio-Manguinhos’s premises in Brazil. A third training activity is planned for July 2022. PASB is also providing the two LAC institutions mentioned above with support related to regulatory compliance and intellectual property matters.

62. Additionally, since September 2021, PASB has collaborated with several subregional integration mechanisms (PROSUR, CELAC, MERCOSUR) and international organizations (IDB, ECLAC) toward strengthening vaccine production capacities in LAC.

PASB has also facilitated a dialogue between vaccine producers and international financial entities (International Finance Corporation/World Bank Group) to explore financing opportunities to support the local production of vaccines for COVID-19 and other diseases in the Region.

63. To increase production of pandemic-related products, PASB is carrying out comprehensive analyses of the regulatory and policy environment in countries of the Region. A study is currently underway to identify and analyze policies, regulations, and sectoral programs for the promotion of production capacities, supply chain resilience, and access to pandemic products in seven countries. A case study is also underway on experiences and lessons learned about the supply chain during the COVID-19 pandemic in 12 countries.

64. PASB has been actively participating in *a)* the Access to COVID-19 Tools Accelerator (ACT-A), to promote and accelerate the development, production, and equitable distribution of COVID-19 vaccines, diagnostics, and therapeutics, and *b)* the COVAX Facility, to ensure access to safe and efficacious vaccines for all countries regardless of income level. In parallel, PASB has developed a list of priority medical devices for use in the context of COVID-19 and has conducted related training with 350 participants from 17 countries and territories. PASB continues to maintain a list of 76 prioritized *in vitro* diagnostic products on proprietary and open platforms. The Organization also supports the Regional Base of Health Technology Assessment Reports in the Americas (BRISA), which as of 31 March 2022 had 402 reports available in its COVID-19 section. Additionally, the Bureau is currently providing support to increase countries' access to medicines for COVID-19 (tocilizumab, molnupiravir, and nirmatrelvir/ritonavir) through an internal PASB taskforce as well as the provision of funding for procurement of these medicines.

65. As 10 May 2022, PASB has fulfilled 2,547 purchase orders for COVID-19 supplies worth \$400 million through 1,060 suppliers.²⁸ Of this total, \$301 million corresponds to purchases made directly by Member States through the PAHO Strategic Fund and reimbursable procurement. PASB has successfully mobilized more than 1,100 tons of health commodities to 37 countries and territories, with its Strategic Reserve in Panama playing a critical role to bridge the gap between countries' assessed needs and vendors' lead times. Up to 10 May 2022, the PASB Strategic Reserve in Panama had managed 619 tons of health supplies with an estimated value of \$40.4 million, imported in over 130 shipments. Meanwhile, 507 tons of supplies, worth approximately \$31.4 million, have already been exported to 37 countries and territories in over 380 shipments. Exported goods included \$14.4 million in RDTs, diagnostics, and laboratory supplies; \$16.9 million in PPE and other relief supplies such as medical kits and primary care backpacks; and approximately \$201,000 in biomedical devices, such as oxygen concentrators and accessories and handheld and fingertip pulse oximeters. Beyond the COVID-19 response, PASB's Strategic Reserve has been critical in responding to needs associated with other

²⁸ Includes diagnostic kits (PCR, detection, and extraction kits), COVID-19 rapid tests, consumables, PPE, and other supplies, but does not include vaccines.

emergencies and disasters affecting the health sector in LAC since 2020. More than 50% of funds implemented by PASB for the response as of 31 March 2022 has gone directly to procuring PPE, laboratory tests, and other essential goods.

66. PASB has made quality assurance a critical component of its technical support for the procurement of goods, supplies, and equipment. This has entailed working with countries and territories to *a)* review specifications; *b)* define and provide quality assurance technical recommendations and guidance on commodities such as masks, respirators, oxygen concentrators, mechanical ventilators, pulse oximeters, BiPAPs, portable ultrasounds, and patient monitors, among others; *c)* facilitate freight shipping and logistics; and *d)* support countries with quality assurance issues and post-market surveillance.²⁹ PASB collaborates with national regulatory authorities across the Americas to share recommendations, considerations, evaluations, and post-marketing surveillance on products that could be used to manage COVID-19. Additionally, PASB maintains a repository of websites and relevant information, including regulatory responses on COVID-19, at the Regional Platform on Access and Innovation for Health Technologies (PRAIS). The Bureau has also pre-qualified multiple vendors following technical evaluations related to quality, safety, and efficacy of their products.

67. Reinforcement of the supply chain capacities of countries and territories to efficiently deploy incoming technologies while ensuring appropriate access to all other essential health technologies has been an important focus of PASB since the start of the pandemic. PASB engaged with national authorities to monitor, guide, and troubleshoot measures to address the impact of the accelerated demand for medical items on production, logistics, customs, and inventory, with a view to mitigating the risks of shortages and delays. These measures included, among others, mobilization of PASB's regional strategic stocks, review of alternate transportation routes, identification of therapeutic alternatives, expedited fractional deliveries using various transportation options, and facilitation of donations and loans between countries.

Strategic Line of Action 5: Support introduction of and access to COVID-19 vaccines

68. To enhance the Bureau's organizational support for the introduction of COVID-19 vaccines in the Americas, the Director of PASB established the Task Force for COVID-19 Vaccination in the Americas in September 2020. This task force, which complements other organizational resources, provides strategic guidance for the successful planning and rollout of COVID-19 vaccination in the Americas. The PAHO Revolving Fund,³⁰ another key component of PASB's response, is an important platform through which Member States can access the vaccines directly and/or through the global COVAX Facility. The

²⁹ As of 30 April 2022, PASB conducted 802 technical evaluations of medical devices, including biomedical equipment, PPE, and in vitro diagnostics; provided support to regional and local procurement of biomedical equipment; and disseminated 284 alerts from regulatory authorities related to safety issues.

³⁰ For more than 40 years, the PAHO Revolving Fund has been supporting countries and territories in the Americas to capture forecasted demand for vaccines, syringes, and related immunization supplies across the Region and leverage economies of scale to ensure access to high-quality vaccines at the lowest prices.

Revolving Fund has been the main procurement mechanism for COVID-19 vaccines in the Americas.

69. Twenty-eight countries and territories in the Americas with the status of self-financing participants signed Commitment Agreements with Gavi, representing approximately 33% of the projected global procurement volume for the self-financing group. Despite ongoing national budgetary and fiscal challenges during the pandemic, the self-financing countries and territories met the COVAX Facility's financial requirements, which represents an allocation of more than \$1.1 billion as down-payments and financial guarantees. Another 10 Member States were eligible for the Advance Market Commitment (AMC) through COVAX.

70. For most of 2021, the global demand for COVID-19 vaccines far exceeded the available supply. This situation, accentuated by inequalities in access to bilateral deals, led to the persistence of considerable demand gaps, especially in countries that lacked access to supplier agreements and support from donors. From the end of 2021 into early 2022, the global market scene transitioned to a more stable and increased supply, with the emergence of bottlenecks in demand absorption. This change in market dynamics allowed the COVAX Facility to scale up deliveries and to channel a large volume of doses donated by high-income countries.

71. PASB has been supporting Member States' participation in the COVAX Facility by managing the international logistics of vaccine deliveries and by providing guidance on the Facility's options and requirements, including demand planning for AMC countries. The Bureau advocated for donations and allocations that better meet Member States' needs in terms of product, quantities, and deliveries. As a result, PASB supported the channeling of 31 million donated doses through COVAX to countries in the Region up to 31 March 2022. These donations are part of the over 100 million doses that PASB has provided through the COVAX Facility to 32 participants. An additional 39 million of the Facility's doses were self-procured by Member States.

72. Vaccines obtained through COVAX are quality-assured either by WHO—through inclusion on the WHO Emergency Use Listing (EUL) or through the prequalification process—or, under exceptional circumstances, by one of the recognized “stringent regulatory authorities.” As of 31 March 2022, 10 COVID-19 vaccines³¹ have obtained WHO-EUL status, and all have been included in the COVAX portfolio. The first doses provided through COVAX in the Americas were delivered on 1 March 2021 to Colombia.

73. As of 31 March 2022, all 51 countries and territories³² have launched COVID-19 vaccination programs, using vaccines received through bilateral agreements with manufacturers, from the COVAX Facility, and from donations. More than 1.75 billion doses have been administered in the Americas. Of the 51 countries and territories, 40 had

³¹ World Health Organization, COVID-19 Vaccines with WHO Emergency Use Listing, available at: <https://extranet.who.int/pqweb/vaccines/vaccinescovid-19-vaccine-eul-issued>.

³² Cuba is using Cuban-manufactured vaccines: Abdala, Soberana 02, and Soberana Plus.

reached the 40% vaccination global target set by WHO for 31 December 2021 (43), and 14 have already achieved the 70% target set for 30 June 2022. Of the 11 countries and territories that remain below the 40% threshold, most are in the Caribbean. Haiti remains the only country in the Region with a vaccination coverage rate below 10%. The countries and territories that have vaccinated the highest number of people with a full series per 100 population are Cayman Islands, Chile, Cuba, Puerto Rico, and Uruguay.³³

74. At least 15 vaccines are being used in the Americas, across three different platforms (adenoviral vector, mRNA, inactivated). The use of multiple products in every country poses programmatic challenges. These new vaccines, not all of which have WHO-EUL approval, require countries to enhance surveillance efforts for all COVID-19 vaccines to monitor safety and impact. To expedite processes for vaccine deployment, PASB provided guidance to Member States on regulatory authorization processes, import permits, and lot release procedures. PASB also mapped existing regulatory routes for authorization, importation, and post-deployment monitoring of the COVID-19 vaccine in 21 countries.³⁴ The Bureau held several workshops with national regulatory authorities (NRA) in the Americas to facilitate the use of WHO-EUL vaccines. Additionally, PASB facilitated efficiencies in decision-making processes by granting access to WHO-EUL product dossiers to NRAs that have signed confidentiality agreements.

75. The regional Technical Advisory Group (TAG) on Vaccine-Preventable Diseases was convened twice in 2020 (in August and November), once in July 2021, and once in January 2022 (44-47). It provides guidance on regional adaptation of the recommendations issued by the WHO Strategic Advisory Group of Experts on Immunization (SAGE) (e.g., redefine some priority groups for COVID-19 vaccination, address programmatic questions, maintain and strengthen national immunization programs amid the ongoing pandemic, and provide guidance on the use of COVID-19 booster doses). Additionally, PASB is working with countries to ensure the equitable distribution of vaccines across their own populations with a focus on hard-to-reach groups, including migrants.

76. PASB has worked side by side with ministries of health to implement their COVID-19 preparedness and response plans, including the introduction of COVID-19 vaccines in countries and territories of the Region. The Bureau provided guidance and comprehensive in-country support to national stakeholders to strengthen the Expanded Programs on Immunization and enable successful implementation of COVID-19 National Deployment and Vaccination Plans. This support also sought to strengthen countries' governance and oversight structures for the quick and safe introduction of COVID-19 vaccines and provided operational guidance for the deployment and management of COVID-19 vaccinations at national and local levels, including for populations in situations of vulnerability. In Ecuador, engagement with ancestral authorities, local leaders, and Ministry of Health entities created spaces to strengthen knowledge and understanding of COVID-19 vaccines, promote cooperation, and establish collaborative agreements. In

³³ The PAHO COVID-19 vaccination dashboard is available at: https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp.

³⁴ Available at: <https://iris.paho.org/handle/10665.2/54516>.

Guatemala, there has been extensive collaborative work between local leaders, health personnel, and Maya, Xinka, and Garífuna ancestral authorities to promote intercultural management of the COVID-19 pandemic and vaccination at the community level. PASB also continues to support the deployment of vaccination brigades to rural areas to reach indigenous communities.

77. PASB worked with countries and territories to conduct cold chain capacity evaluations and update their cold chain equipment inventories and transport requirements to guide the planning for storage and distribution of COVID-19 vaccines. Thirty-one countries were subsequently supported to purchase cold chain equipment and temperature-monitoring devices to expand their storage and distribution capacities and ensure that COVID-19 vaccines remain within the appropriate temperature range during storage and distribution. PASB also offered regional and country-specific training workshops for these countries to prepare health workers to manage and handle COVID-19 vaccines, including estimation of the required storage and transport capacities. PASB also offered additional technical assistance and training to the 26 countries and territories that reported insufficient and/or substandard cold chain capacity to accommodate all types of COVID-19 vaccines.

78. PASB has been providing technical cooperation to countries and territories to strengthen their COVID-19 vaccination information systems at national and local levels, including collection of disaggregated data. This has facilitated access to consistent, comparable, and real-time information on doses administered. It has also allowed follow-up of incomplete schedules and monitoring of vaccination coverage, including for populations in situation of vulnerability. Within this context, the Bureau has also been supporting digitalization of the surveillance of Events Supposedly Attributable to Vaccination or Immunization (ESAVI). This support has been key to the strengthening of national surveillance systems for ESAVI for COVID-19 vaccines, as well as for impact studies and modeling of future scenarios to inform decision making. To support vaccine safety monitoring, PASB has developed a regional database for ESAVI surveillance to which 18 countries and territories are already providing data on a regular basis. The technical cooperation around vaccine safety is being implemented within the framework of the Manual for Surveillance of Events Supposedly Attributable to Vaccination or Immunization in the Region of the Americas (48), which PASB published in December 2021, building on experiences in vaccine safety from the national immunization programs.

79. PASB provided support to Chile, Costa Rica, Ecuador, Paraguay, and Uruguay to prepare vaccine effectiveness estimates for the COVID-19 vaccines used during 2021. These estimates were guided by the PASB-harmonized regional protocol REVELAC-COVID-19 (49). This generic protocol is used to evaluate the effectiveness of COVID-19 vaccines based on the sentinel surveillance strategy for severe acute respiratory infections, using existing regional platforms such as SARInet and the Network for the Evaluation of Vaccine Effectiveness in Latin America and the Caribbean - influenza (REVELAC-i). PASB, in collaboration with Harvard University and in coordination with national authorities, is also implementing a regional multicentric effectiveness study of COVID-19 vaccines in Argentina, Brazil, Chile, and Colombia. The results may inform

the development of communication messages for health workers and the public on the effectiveness of COVID-19 vaccines.

80. PASB conducted two COVID-19 vaccine post-introduction evaluation surveys in Bolivia and Ecuador in November 2021 and January 2022, respectively. Results showed that the successful performance of both countries in introducing COVID-19 vaccines was due to *a)* the political will to protect their populations with available vaccines; *b)* adequate, and relaxed, regulatory measures for the entry of vaccines; and *c)* political, diplomatic, and financial efforts to acquire more than 70% of the total doses required through bilateral agreements. The greatest challenge in both countries stems from the large gap in human resources needed to continue responding to the pandemic while at the same time recovering essential health services.

81. With the arrival of COVID-19 vaccines and the launch of vaccination campaigns, PASB supported countries in communication efforts to highlight the importance of vaccines in tackling the pandemic. Public service announcements and videos related to COVID-19 vaccination were aired by various radio and TV stations to ensure wide coverage of the importance of vaccination and to correct misinformation. As booster doses of the vaccines were introduced, vaccination campaigns prioritized vulnerable populations. Communication material was translated to reach indigenous populations in various countries of the Region. Testimonials from medical experts were used to increase acceptance of COVID-19 vaccines within key social structures such as teachers' federations, trade unions, and academia. The success achieved with indigenous communities in the Amazon area of northern Bolivia (Takana, Ese Eja, and Cavineño in Pando Department) was used to support the development of communication strategies for other rural areas. In Guatemala, PAHO/WHO supported a country-wide ethno-anthropological evaluation to understand vaccination barriers and factors associated with hesitancy. These results informed national COVID-19 vaccination communication campaigns.

82. The “infodemic” of misinformation about COVID-19 vaccines and associated vaccine hesitancy has required strong collaboration and implementation of infodemic management, demand generation, risk/crisis communication, and community engagement approaches. PASB has held workshops for communicators and journalists covering issues related to COVID-19 vaccines to ensure that these opinion influencers are equipped with the tools and knowledge to report on this topic responsibly and accurately. Sessions were also held with in-country personnel on how to implement vaccine demand generation strategies. PASB also organized Twitter and Facebook Live sessions in which experts talk to the public about COVID-19 vaccines and respond to questions and doubts. Additionally, PASB developed a website specifically on COVID-19 vaccination³⁵ that is continuously updated with information and resources for different audiences. PASB has also been updating NRAs and national immunization programs about emerging reports of adverse events following immunization and vaccine safety concerns through two dashboards, one

³⁵ Available at: <https://www.paho.org/en/covid-19-vaccines>.

on COVID-19 vaccine doses administered in the Region³⁶ and the other on efficacy and safety of COVID-19 vaccines.³⁷

Action Necessary to Improve the Situation

83. The following short-term and medium-term interventions are recommended for Member States and PASB.

Member States

84. According to a 2020 joint PAHO and ECLAC report (50), economies in Latin America and the Caribbean will be reactivated only if the COVID-19 contagion curve is flattened. A three-phase approach is proposed: *a)* control, including the adoption of health, economic, social, and productive policies to control and mitigate the effects of the pandemic; *b)* economic reactivation with social protection; and *c)* rebuilding societies in a sustainable, equitable, and inclusive way.

85. Mass vaccination is needed to bring the pandemic under control. Vaccination campaigns should be supported by social protection and public health measures and by increased public spending on health, making the first level of care a strategic priority and striving for maximum equity and efficiency.

86. Countries and territories should continue applying non-pharmaceutical measures systematically and rigorously. Use of such measures should be informed by the epidemiological situation in each country and, most importantly, should be in line with an evidence-based strategy agreed at the highest level of government.

87. Health systems must be prepared to deal with surges in COVID-19 cases as well as with increased demand for hospital beds and critical care for a range of other illnesses, related to the disruption of essential services. This requires a comprehensive approach to managing the pandemic, with adaptations to a context that is constantly evolving. This approach should have the right balance of proven health interventions to prevent transmission and save lives, including vaccination and other public health measures; response capacity at the first level of care (primary care); and progressive expansion of hospital and critical care services, including EMTs and AMCS, when necessary.

88. It is important to balance urgent implementation and scaling up of COVID-19 vaccination plans with the strengthening of routine health service provision and other COVID-19-specific responses. It is especially necessary to increase investments in primary health care and the management of health networks.

89. Extra expenditures related to COVID-19 should be planned as additions to regular budget items or programs, rather than replacing them, during the 2022 budget discussion cycles. This requires development of comprehensive cost estimates for the COVID-19

³⁶ Available at: https://ais.paho.org/imm/IM_DosisAdmin-Vacunacion.asp.

³⁷ Available at: <https://covid-19pharmacovigilance.paho.org/>.

response, including costing for vaccination plans beyond the procurement of vaccine doses. Member States should plan catch-up immunization interventions to minimize the risk of possible outbreaks of other vaccine-preventable diseases and should adequately budget for such interventions.

90. It is critical that representatives from the ministries of health coordinate with their counterparts in ministries of finance and in planning offices on issues related to funding requests and strategic use of the significant amounts of international funding currently available. In managing the allocation of these new funding sources, it is important to tackle bottlenecks that can interfere with providers' timely access to resources and to avoid creating parallel extrabudgetary mechanisms that may undermine current health financing systems.

91. Countries and territories should continue making every effort to reach a 70% COVID-19 vaccination coverage rate by 30 June 2022 (as recommended by WHO in October 2021). It is essential to redouble efforts to offer a booster dose to high-priority populations (health workers, the elderly, immunocompromised persons, pregnant women, persons living in situations of vulnerability), as recommended by the WHO SAGE Roadmap (51). National hospitalization and mortality rates due to COVID-19 cannot be significantly reduced if many individuals in priority groups remain unvaccinated.

92. National immunization programs require targeted actions and necessary resources (financial and human) for successful COVID-19 vaccine rollout and to ensure sustainability of routine immunization activities. Countries and territories should also strengthen their demand generation activities and communication approaches with a view to achieving high COVID-19 vaccination coverage in priority groups, as well as closing the immunization gaps for other vaccine-preventable diseases. It is critical that national regulatory authorities and national immunization programs jointly coordinate vaccine safety surveillance strategies and actions to achieve an effective response.

93. Countries and territories should work toward integrating COVID-19 vaccination operations into national immunization programs. Resources allocated to COVID-19 vaccination rollout operations in 2021 and 2022 may also contribute to the overall strengthening of the NIPs. The COVID-19 vaccination platform can be used to facilitate the administration of other vaccines to adolescents, adults, and high-risk groups (e.g., health workers, pregnant women, elderly, immunocompromised persons), especially in countries and territories where only the pediatric vaccination platform is highly developed.

94. Given the impact of oxygen therapy on the reduction of COVID-19 mortality and morbidity, steps should be taken to organize health systems in a manner that permits the rapid identification of gaps and opportunities for improvement in the production, storage, distribution, and use of oxygen. The identification of oxygen requirements at an early stage of the disease and provision of oxygen therapy for severe and critical cases is key.

95. To help contain endemic or epidemic pathogens, countries and territories should structure infection prevention and control programs with attention to governance and leadership; a dedicated budget; clear roles and responsibilities; education and training for health workers; and monitoring and evaluation of strategies and goals.

96. Continuous effort is needed to strengthen and integrate national health supply chains, warehousing, and logistics capacities and resources. Emergency planning, strengthening of health logistics networks, and strategic positioning of reserve stocks will improve capacities for timely response to localized outbreaks and other emergencies. Stakeholders may also want to explore holding more buffer inventories and working with suppliers to hold inventory at their warehouses.

97. Member States should further strengthen and refine national and local capacities for surveillance, case detection, investigation, and isolation, as well as contact tracing and quarantine. COVID-19 should also be fully integrated into the long-standing sentinel surveillance for influenza and other respiratory viruses to guarantee sustainability and ongoing monitoring.

98. It is important to continue upgrading and expanding national capacities for molecular sequencing and genomic epidemiology for SARS-CoV-2, while ensuring quality in laboratory practices and full integration into public health surveillance and disease control efforts at national levels.

99. Countries and territories should leverage existing surveillance systems for assessing the effectiveness of COVID-19 vaccines, with particular focus on the new variants of concern.

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100. The Bureau should continue providing technical cooperation to help countries and territories adopt a more holistic approach to the regional and national COVID-19 health response. In addition to its support for a successful vaccine rollout, PASB should provide support to strengthen other critical areas of the response, such as diagnostics, therapeutics, case management, infection control, and continuity of essential health services. This includes adapting and increasing capacities of the health services networks and addressing health systems bottlenecks and health logistics.

101. PASB should continue to support Member States' participation in the COVAX Facility by advocating for donations and allocations that better address Member States' needs.

102. To facilitate regional access to COVID-19 vaccines, in addition to those accessed through the COVAX Facility and bilateral agreements, PASB signed long-term agreements with three COVID-19 vaccine suppliers and consolidated regional demand for the last quarter of 2021. Given the spike in supply availability by the end of 2021, Member States' demand for additional vaccine doses dropped in 2022 and was insufficient to justify

maintaining commitments with suppliers for new vaccine batches. However, PASB should keep this option open with a view to expanding or adjusting its product portfolio in case new needs arise in Member States.

103. PASB should continue to provide recommendations to Member States on how to *a)* reach all high-priority groups with COVID-19 vaccines to ensure high vaccination coverage rates among those most vulnerable to the disease; *b)* continue collecting country-specific data on vaccine safety, effectiveness, and impact and use the information to develop strong communication materials to address the public's concerns; *c)* integrate COVID-19 vaccination operations into national immunization programs to ensure sustainability and maximize impact of the NIPs, with particular emphasis on information systems and cold chain operations; *d)* collect best practices and lessons learned to improve the Region's knowledge and understanding of new vaccine introduction and integration into the NIPs; and *e)* use the experience of COVID-19 vaccine rollout to strengthen adult vaccination platforms and ensure immunization services across the life course.

104. PASB should continue providing technical cooperation that is tailored to each country's reality, bringing together the expertise at all levels of the Organization. This can include virtual missions to countries, including to remote areas, as well as in-person missions when possible.

105. PASB should maintain a strategic stock of critical supplies, prepositioned to deliver life-saving responses in health emergencies. This can help mitigate lack of or delayed access to critical supplies that may result from the global dynamics of demand/supply, logistics constraints, transport delays, and production shortages.

106. PASB and international partners should continue to support Member States in the development and strengthening of surveillance and laboratory capacities, such as the integration of COVID-19 into the regional SARI-net surveillance network and SARS-CoV-2 molecular sequencing within the regional COVIGEN genomic surveillance network.

Action by the Executive Committee

107. The Executive Committee is invited to take note of this report and provide any comments it deems pertinent.

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