

# Immunezation Newsletter

Pan American Health Organization



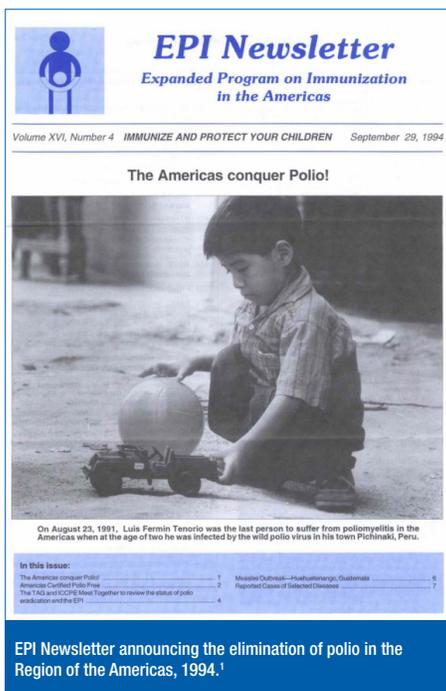
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Immunize and Protect Your Family

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## Polio-free in the Americas for 30 Years

The last detected case of polio in the Region of the Americas was in 1991. This year we celebrate 30 years without the disease! But what does 30 years without polio really mean?



Before polio vaccines existed, polio affected thousands of children around the world every year. Not so long ago it was common for a healthy child to suddenly be unable to walk, and those who were fortunate enough to recover from the disease were left with lifelong sequelae. Those less fortunate spent their days in hospital wards hooked up to huge machines — known as steel lungs — that allowed them to keep breathing. Many others lost their lives. Polio was endemic in all countries, and when there was an outbreak, communities had to close schools and other public spaces to protect the children.

Discovery of the polio vaccine in the mid-1950s changed the world forever. Once vaccinations began, the disease quickly started to wane. It was clear that vaccines worked, and that they could be used to prevent the disease. After several countries succeeded in controlling polio, leaders decided that eliminating polio permanently was possible, but only if it was done in a coordinated way in all countries of the Region. And so, in 1985, all the Region's countries committed to eradicating polio. In 1988, the rest of the world joined this massive effort.

The political commitment to end the disease was furthered by the work of vaccinators, who travelled to the farthest reaches of the continent, by land, sea, and air, so that no one would be left unvaccinated. Along with these efforts, on-site personnel worked to investigate all probable cases, one by one; laboratory staff worked to confirm the absence of cases; and numerous other health workers helped in combating the disease, so that no one would ever again suffer from polio. Participating in this great effort were community leaders, politicians at all levels, partnerships with international organizations, and parents who were convinced that vaccination saves lives.

In 1991, in a show of Pan-Americanism and commitment to health, the countries of the Americas conquered polio, and the Americas became the first world region to eliminate the disease.

It is not enough, however, to have eliminated the disease in the Region, because as long as there are cases somewhere in the world, all children remain at risk. Keeping the Region polio-free for 30 years has been a titanic effort, one requiring that all children be vaccinated against the disease, while at

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## What I Have Learned about Sustaining Polio Elimination in the Americas

**By Dr. Arlene King, MD, MHSc, FRCP, ICD.D, Chair, Regional Certification Commission (RCC) for the Polio Endgame; Member, African Regional Certification Commission for Polio Eradication; Member, Global Certification Commission for Polio Eradication; Member, PAHO's Technical Advisory Group (TAG) on Vaccine-Preventable Diseases; Adjunct Professor, Dalla Lana School of Public Health, University of Toronto, Canada**

We have had the privilege of being free of polio in the Americas since August 1991. I have proudly served as the Chair of the Regional Certification Commission (RCC) for the Polio Endgame since 2013, standing on the shoulders of the initial independent International Commission for the Certification of Polio Eradication, which in 1994, after an extensive documentation and verification process, declared that the transmission of wild poliovirus had been interrupted. Our work not only follows that of the initial Commission, but also of the American Regional Commission for the Certification of Poliovirus Laboratory Containment and Verification of Polio-free Status (AMR RCC) created in 2004.<sup>2</sup>

As one of six RCCs in the world, our task has been to independently verify that the Region of the Americas has remained free of polio in a world in which polioviruses have continued to circulate, and the risks of the importation of wild polioviruses (WPV), circulating vaccine-derived polioviruses (cVDPV), and emergence of cVDPV, are ever-present.

Maintaining programmatic commitment to polio in the absence of disease in this Region for 30 years has been a Herculean task. While sustaining measles elimination, battling outbreaks of other communicable diseases, and introducing new public health programs, teams of public health professionals at local, state/provincial, national, and regional levels have continued to demonstrate their extraordinary dedication to keeping us free of polio.

However, we are at a critical junction, given the challenging economic situation in much of the Americas, and diversion of public health resources to respond to the COVID-19 pandemic. Since 2010, in most countries in the Region, there has been a steady decline in immunization coverage, with regional coverage dropping 10% as of 2020. The COVID-19 pandemic has exacerbated this trend, as governments have been forced to redirect scarce resources to emergency response operations<sup>3</sup> Access to health care services remains limited because of the demands of the pandemic

<sup>2</sup> Pan American Health Organization. Poliovirus Containment: The American Region Has Successfully Completed Phase I. Immunization Newsletter. Volume XXXI, Number 2 April 2010. Available on: <https://www.paho.org/hq/dmdocuments/2010/SNE3202.pdf>

<sup>3</sup> Reinvigorating Immunization as a Public Good for Universal Health. 168th session of the Executive Committee of the Directing Council of the Pan-American Health Organization. Virtual session, 21-25 June 2021. <https://www.paho.org/en/documents/cd16814-reinvigorating-immunization-public-good-universal-health>.

<sup>1</sup> PAHO. EPI Newsletter. The Americas Conquer Polio! Volume XVI, Number 4, 29 September 1994. Available at: <https://www3.paho.org/english/ad/fch/im/sne1604.pdf>

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the same time maintaining sensitive surveillance systems, an increasingly challenging task given the range of other health priorities.

Today we are closer than ever to eradicating polio worldwide. However, the COVID-19 pandemic has significantly affected health services around the world, including routine vaccination and epidemiological surveillance of vaccine-preventable diseases, putting at risk the progress achieved.

Health workers around the world must commit to completing the eradication process. Today more than ever, we must learn from past experiences and, with renewed determination, look to the future to fulfill the promise of a world permanently free of polio. ■



Luis Fermín, the boy who was the last person to suffer poliomyelitis in the Region of the Americas. Credit: PAHO/WHO.

## Reducing the Risk of Vaccine-Preventable Diseases in Humanitarian Emergencies

Humanitarian emergencies lead to massive population movements, temporary relocation, overcrowding, economic and environmental degradation, shortages of clean water, poor sanitation and waste management, lack of shelter, malnutrition caused by food shortages, and lack of access to health services.

All of these factors mean that populations affected by a humanitarian emergency are at risk of high morbidity and mortality from vaccine-preventable diseases (VPDs).<sup>4</sup> National immunization programs must therefore vaccinate the affected populations and strengthen epidemiological surveillance of VPDs.

In 2013, the Pan American Health Organization (PAHO) Technical Advisory Group (TAG) on Vaccine-Preventable Diseases adopted the decision-making

framework on vaccination in acute humanitarian emergencies developed by the Strategic Advisory Group of Experts (SAGE) on immunization of the World Health Organization (WHO). The framework is directed at national authorities and cooperation agencies, and proposes systematizing the decision-making process, following three steps. The framework document was published in PAHO's Immunization Newsletter of October 2014 and remains in force.<sup>5</sup>

In this context, it is important to prioritize vaccination against polio, measles, and rubella and, as soon as possible, against the other VPDs, according to each country's vaccination schedule. In addition, vaccinating populations in humanitarian emergencies should be included in national plans for deployment of COVID-19 vaccination.

Specific recommendations for preventing polio, measles, and rubella outbreaks are described below:

### Preventing polio outbreaks

- Children under 5 years old should be vaccinated against polio, and vaccination could be expanded to include children up to 15 years of age. At least one dose of bivalent oral polio vaccine (bOPV) should be administered as early as possible, regardless of vaccination status. It is recommended that inactivated polio vaccine (IPV) and bOPV be administered concurrently.
- If documentation on vaccination status is not available, at least three doses of bOPV should be administered, while maintaining the minimum intervals between doses of viral vaccines recommended by the program.
- Vaccinating adults with bOPV may be considered, as this can strengthen mucosal immunity and reduce the potential for transmission of the virus. The decision to expand the campaign to include adults should be made in consultation with the Global Polio Eradication Initiative (GPEI).
- Epidemiological surveillance of acute flaccid paralysis should be strengthened, and appropriate mechanisms established for active case-finding and testing for poliovirus.
- National plans for a polio event or outbreak response should be reviewed.

### Preventing outbreaks of measles and rubella

- Children under 5 years old should be vaccinated against measles (M) and rubella (R). Vaccination could be expanded to include individuals over 5 years of age, according to the availability of MR vaccine, and in consultation with the national commission for sustainable elimination of measles and rubella.
- Countries that have completed a cohort of susceptibles should plan follow-up campaigns as soon as possible.
- Initiate risk analysis at the municipality level, using the PAHO tool, in order to prioritize high-risk localities for vaccination and surveillance, primarily border municipalities and municipalities with a high level of international tourism.
- Rapid response teams and rapid response preparedness plans should be activated, with training for dealing with imported viruses. Two virtual courses will be available for training in rapid response to measles outbreaks.
- Intensify implementation of active institutional searches for suspected cases of measles and rubella, in order to increase the sensitivity of the reporting system.

These activities should be carried out in a spirit of promotion, respect, and protection of human rights, employing a coordinated approach with partners involved in polio and measles eradication efforts, and with other United Nations System agencies, funds, and programs.

It is important to keep the various country-level advisory committees

informed and involve them in decision-making. These include: the National Immunization Technical Advisory Group (NITAG), the national committee for certification of polio eradication, and the national commission for sustainable elimination of measles and rubella. ■

<sup>4</sup> Vaccination in acute humanitarian emergencies: a framework for decision making. WHO/IVB/13.07. October 2013. Available at: [http://www.who.int/hac/techguidance/tools/vaccines\\_in\\_humanitarian\\_emergency\\_2013.pdf?ua=1](http://www.who.int/hac/techguidance/tools/vaccines_in_humanitarian_emergency_2013.pdf?ua=1)

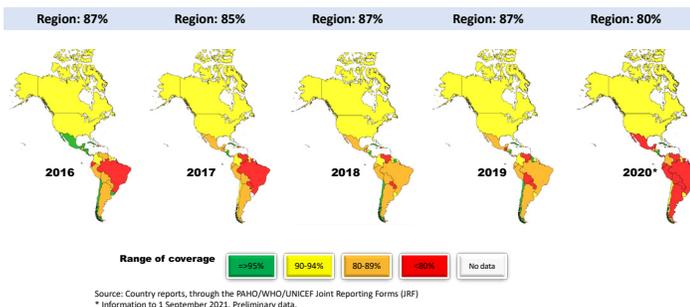
<sup>5</sup> Pan American Health Organization. Vaccination during emergency situations. Immunization Newsletter, Vol. 36, No. 5, October 2014. Available at: <https://iris.paho.org/bitstream/handle/10665.2/54229/SNF3605.pdf?sequence=1&isAllowed=y>

## State of Polio Eradication in the Americas: Delivering on a Promise

It has been more than 30 years since Friday, 23 August 1991, when what would turn out to be the last case of polio in the Americas was detected, in Junín, Peru. Three years after that event, the Global Commission for the Certification of the Eradication of Poliomyelitis (commonly referred to as the GCC) conducted a careful review of data submitted by chairs of the national certification committees. Three years after that last case was reported, the GCC declared that transmission of wild poliovirus had been interrupted in the Americas. At the same time, the GCC warned that, as the first world region to have achieved this, it was necessary to maintain high vaccination coverage and continue to monitor cases of acute flaccid paralysis (AFP), in order to ensure that the Region of the Americas remained polio-free. Maintaining polio elimination, with the goal of total eradication, has not been easy for any of the countries in the Region. The GCC articulated this as early as 1994, when it suggested that achieving polio elimination in the Americas may have been easier than keeping the continent free of the disease.<sup>6</sup>

It is for this reason that PAHO's Technical Advisory Group (TAG) on Vaccine-Preventable Diseases, established in 1985 to formulate evidence-based strategies for polio eradication, has reviewed the status of vaccination coverage and the quality of epidemiological surveillance of AFP in all of its 26 meetings to date. During the 26th TAG meeting, on 14–16 July 2021, it expressed concern about the status of polio3 vaccination coverage in children under 1 year of age, which has remained consistently below 90% since 2016 (Figure 1). Additionally, preliminary data for 2020 already show the impact of the pandemic on vaccination coverage, with coverage in the Region as a whole at 81%, with only 13 countries/territories reporting ≥95% coverage. With regard to surveillance, since 2020 there has been a significant reduction in the number of reported cases of AFP compared with pre-pandemic years. As of epidemiological week 28 in 2021, three countries in Latin America and the Caribbean (Cuba, Dominican Republic, and Uruguay) have not reported a single case of AFP, and in Argentina, El Salvador, Peru, Panama, the Caribbean subregion, Ecuador, Brazil, Nicaragua, and Costa Rica there has been a ≥50% reduction in the average number of cases reported, compared with pre-pandemic years (Table 1).<sup>7</sup>

**Figure 1: Polio3 Vaccination Coverage of Children Under 1 Year of Age. Countries of the Americas. 2016–2020\***



In addition, each year, as part of the process of certifying, the Regional Commission for the Certification of the Final Phase of Polio Eradication in the Region of the Americas (RCC) reviews reports documenting the status of polio eradication in the 34 countries and 9 territories of the Region. Based on the evidence provided up to December 2019, the RCC, at its last meeting in October 2020, concluded that all countries and territories in the Region remained polio-free. However, it expressed concern about the sustainability of the polio-free status in the Plurinational State of Bolivia, Brazil, Ecuador, Guatemala, Haiti, Paraguay, Suriname, and the Bolivarian Republic of Venezuela. These countries, which account for 32.63% of the population in the Americas under 1 year old, continue to have low immunization coverage and weak surveillance systems, thus posing the threat of the emergence of vaccine-derived poliovirus (VDPV) or the importation and subsequent circulation of polio.<sup>8</sup>

In order to strengthen activities in the countries of the Region, the RCC makes

**Table 1: AFP surveillance indicators, 2019–2021**

	2019			2020			Last 52 weeks*		
	Rate	% Inv. <48 hrs.	% adequate samples	Rate	% Inv. <48 hrs.	% adequate [TN: Lit.] samples	Rate	% Inv. <48 hrs.	% adequate samples
ARG	0.78	29	73	1.66	74	74	0.25	21	68
BOL	0.45	92	79	0.45	100	75	0.54	100	79
BRA	1.1	98	64	0.56	98	67	0.45	99	63
CAN	0.44		38		29	29			
CAR	0.44	100	88	0.23	25	25	0.11	0	50
CHL	1.68	89	68	1.78	66	66	1.28	72	45
COL	1.31	75	83	0.77	75		0.80	71	84
CRI	1.5	94	81	1.32	93	93	0.57	83	67
CUB	1.54	75	93	1.16	95	95	0.39	86	86
DOM	0.84	28	92	0.37	55	55	0.2		33
ECU	1.08	73	67	0.33	81	63	0.19	56	67
GTM	1.19	85	77	0.96	79	74	0.73	86	64
HND	1.51	67	93	1.55	90	90	1.25	79	87
HTI	0.38	86	43	0.22	38	38	0.19	71	57
MEX	2.51	100	88	1.42	82	82	1.2	99	78
NIC	1.28	100	100	0.92	78	78	0.72	86	64
PAN	0.5	67	100	0.96	100	100	0.26	100	100
PER	1.5	75	67	0.55	64	69	0.26	67	62
PRY	1.26	88	92	0.92	58	58	0.92	95	68
SLV	1.96	50	91	0.99	25	94	0.46	50	88
URY	1.13	100		0.14	100	100	0.14		100
USA									
VEN	1.31	99	73	0.95	95	51	0.85	92	68
Total**	1.48	86	78	0.81	86	70	0.61	89	72

\* 2020/35 - 2021/33  
\*\* Excluding USA

general and country-specific recommendations every year, which are shared with National Certification Committees and national authorities.

The TAG, in turn, provides recommendations for upholding the promise of a polio-free Region. The recommendations issued at the last meeting of the TAG, in July 2021, are listed below:

- The TAG endorses the GPEI's "Global Polio Eradication Strategy 2022–2026 Delivering on a Promise," which should be adopted by countries of the Americas.<sup>9</sup>
- The TAG is extremely concerned with the inadequate polio vaccination coverage and the weak surveillance systems, which are unable to sustain and verify polio eradication in the Americas; unless these are urgently improved, it fears that WPV1 and/or cVDPV outbreaks may occur in the Region.
- The TAG urges countries to achieve 95% coverage with Polio3, and strongly recommends governments to invest resources in achieving and maintaining this target. This immunization coverage target also applies to IPV1 and IPV2.
- The TAG noted the SAGE evaluation of the systematic review of IPV immunogenicity. The TAG then considered the previous TAG criteria regarding the use of IPV as the first dose to prevent VAPP and the need to sustain gut immunity by administering bOPV. The TAG recommends the following vaccination schedule for the 13 countries that have not yet introduced the second dose of IPV (Table 2):

**Table 2. Regional recommendation for polio vaccination schedule, the Americas, 2021**

Vaccination schedule	Basic			Booster	
	1st	2nd	3rd	4th	5th
	2 months	4 months	6 months	12-18 months	4-5 years
	IPV	bOPV	IPV	bOPV	bOPV

- Countries that have already introduced two doses of IPV may consider adopting the above schedule or consider the interval of 4 months

<sup>6</sup> Pan American Health Organization. EPI Newsletter, v.16, no. 5, 1994. Available at: <https://iris.paho.org/handle/10665.2/41096>

<sup>7</sup> Pan American Health Organization. Twenty-sixth Meeting of PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases. 14-16 July 2021. Virtual meeting. Final report <https://iris.paho.org/handle/10665.2/54833>

<sup>8</sup> Pan American Health Organization. Report of the 12th Meeting of the Regional Certification Commission for the Polio Endgame in the Region of the Americas. Available at: <https://www.paho.org/en/documents/12th-meeting-regional-certification-commission-polio-endgame-region-americas-report>

<sup>9</sup> Global Polio Eradication Initiative. Delivering on a Promise: Polio Eradication Strategy 2022–2026: Pre-publication version, as of 10 June 2021. Available at: <https://polioeradication.org/wp-content/uploads/2021/06/polio-eradication-strategy-2022-2026-pre-publication-version-20210609.pdf>

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between IPV1 and IPV2. Their final decision should be based on a programmatic and epidemiological analysis.

- The TAG congratulates Ecuador for conducting a study on the effectiveness of the use of fractional dose of IPV. The results of this study should be used to determine if the current schedule is appropriate or if changes are needed.
- Given the constraints of the COVID-19 pandemic, the TAG does not recommend that countries discontinue the use of bOPV in favor of an IPV-only schedule at this time.
- The TAG endorses the recommendations given by the SAGE regarding the interchangeability of sIPV with wIPV. As of July 2021, sIPV is not recommended as a fractional dose.
- Given that the Region's AFP rate has reported only a slight increase between 2014 and 2019 (1.19 and 1.33, respectively), and stool adequacy has remained constant during the same period (76% and 77%, respectively), the TAG recommends that efforts must be made to improve the performance of both indicators to avoid missing cases of paralysis caused by polioviruses.
- Considering the sharp drop in vaccination coverage and surveillance

rates, countries at very high risk of outbreaks (Haiti and Bolivia) or at risk due to ongoing population movement with a high-risk country (Dominican Republic) should consider the collection of a second stool sample. Given the workload and costs of collecting a second sample, these countries should implement this temporary recommendation while strengthening their immunization program and surveillance systems.

- If a stool sample cannot be collected from the AFP case within 14 days of the onset of paralysis, or if a stool sample arrives at a laboratory in poor condition, The TAG recommends that countries collect one stool sample from each of three contacts, preferably from close family members, household contacts, neighbors, or playmates (all younger than 5).
- The TAG strongly recommends consistent implementation of the 60-day follow-up visit to assess the presence of residual paralysis. (This assessment is currently completed in fewer than 20% of cases.)
- Environmental surveillance is an excellent addition to the national surveillance system. However, considering its very high cost, a country should consider implementing environmental surveillance only after improving the sensitivity of its AFP surveillance systems. ■

## Experiences of Program Managers with Maintaining Polio Elimination in the Region

As part of celebrating 30 years since the last case of polio in the Region of the Americas, PAHO invited the longest-serving heads of immunization programs to share lessons learned, recommendations, and advice on sustaining polio eradication and on the final phase of polio eradication.

### Roberto Arroba: "Only by working as a team can we achieve good results"



Roberto Arroba.

Roberto has been working on immunization in Costa Rica for 12 years, and although he found that at first it was not easy, he gained knowledge and experience from lessons shared by colleagues, and through PAHO training sessions.

For him, PAHO has been the countries' ally in training and in developing guides to support their work.

Roberto describes himself as a bridge that unites the different stakeholders inside and outside the country, stating that this is his greatest contribution to maintaining polio eradication in Costa Rica. In his own words, "Only by working as a team can we achieve good results."

Compared to when he began his work as head of the EPI, Roberto believes that today there are greater challenges, due to the decrease in coverage and the increased difficulty of maintaining high-quality surveillance. Despite being focused on COVID-19 vaccination activities, the other vaccine-preventable diseases must not be neglected. To this end, Roberto believes that we must not forget the importance of the work we do, and must constantly remember why we vaccinate, what we are preventing, and what would happen if the disease returned. Roberto believes that in order to revitalize the program, complete vaccination regimens must continue

to be implemented, with coverage above 95%, and that all cases of acute flaccid paralysis (AFP) should be immediately investigated, since, as he says, "We must, as a Region, return to being the example we once were."

Roberto advises people who have recently joined the program to listen to the advice of those with greater experience, try to work as a team, and participate in ongoing training activities.

### Nora Villatoro: "We must not lose the progress we have made"

Nora began working in El Salvador's immunization program in 2005. Since then, she periodically evaluates vaccination coverage and indicator performance, together with her entire team, including her epidemiology and laboratory colleagues. She considers this to have been her greatest contribution to keeping El Salvador polio-free.

For Nora, managing the program has presented different challenges and opportunities over time. Before, it was easier to carry out activities, since the program was responsible for all the different activities, whereas today it is necessary to coordinate with a range of stakeholders. On the other hand, lessons have been learned, and years of experience have been gained.

Given the current difficulties in carrying out vaccination and epidemiological surveillance activities in the context of the COVID-19 pandemic, and efforts to revitalize the program, Nora believes we must not forget the latent risk of polio being reintroduced, and emphasizes that "We must not lose the progress we have made." To maintain the commitment of the staff at all program levels, she has employed various means of sharing information with staff and maintaining active communications. Since people are still fearful of going to health centers due to the pandemic, vaccination posts have been set up outside the units. To improve surveillance, active institutional searches are conducted.

Nora believes that one of PAHO's major tasks is to keep polio and other vaccine-preventable diseases on the political agenda, as well as supporting the exchange among countries of experiences and lessons learned.

Nora's recommendation for all health professionals who have recently joined the program is to rely on the experts. She considers it a privilege to have gained the assistance of people who taught her along the way, and highlights the importance of having the support of program heads from all countries in the Region.

### Ida Berenice Molina: "Eradication represents a commitment to the people"



Ida Berenice Molina.

Twenty-nine years ago, when Ida Berenice completed her academic training, she was asked to head Honduras' immunization program, with an emphatic reminder that this was the country's

top-priority program. Since then, Ida has helped systematize strategic planning and organize management at the national and international levels, in efforts to achieve the established targets. In addition, she has managed to transform planning into actions at the local level to achieve the program's objectives. Ida is involved in ongoing analysis of the situation, in order to guide the planning of activities.

Sustaining polio eradication is an ongoing challenge; a high level of coverage must be maintained every year, along with sensitive epidemiological surveillance of acute flaccid paralysis. Ida believes, however, that maintaining sensitive surveillance systems is easier now than it was before, since there are more technological resources, more accumulated experience, greater access to training, more tools for microplanning,

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and ongoing monitoring and accountability. PAHO/WHO has an important role to play in monitoring countries' performance in carrying out polio eradication strategies and ensuring that vaccination remains a political priority. Ida Berenice argues, however, that in spite of ongoing regional advocacy, countries must regard polio eradication as a national responsibility, one that involves allocating resources, since "elimination represents a commitment to the people."

For people who have recently joined the immunization program, Ida advises that they work as a team, ensuring they have the support of committed staff at all levels. She also cites the need for the program to work in a multidisciplinary fashion.

### Jazmina Umaña: "We can no longer work alone"



Jazmina Umaña.

Jazmina has worked in the immunization program for 11 years, and in 2014 assumed the position of national coordinator in Nicaragua. She believes that her greatest contribution to maintaining polio eradication has been in coordinating the team that conducts the activities. She emphasizes that in order to work in the immunization program you have to like it. As she says, "If you don't enjoy the program, you're not going to fall in love with it."

Based on her experience, maintaining epidemiological surveillance is more difficult today than when she began, because it is hard to maintain a sense of risk in the population, given that so many years have passed without any confirmed cases of polio. She believes that the perception of risk is fundamental to strengthening the system. To this end, risk assessment should be used to help determine where and how to exert influence, while proposing inter-programmatic actions to reduce risk.

Jazmina believes that in order to revitalize the program, a new model of inclusive and integrated health must be created, because "we can no longer work alone." As she explains, "Guidelines and objectives must be maintained, but they should be made an integral part of universal health. All possible opportunities for training should be utilized, and no component of the program should be neglected."

Jazmina sees herself as privileged for having had the support of PAHO. She believes in the critical role of PAHO advisors, who have an outside vision but work as part of the team. She also recognizes the importance of regional guides and manuals in shaping the country's work, and appreciates the financial support needed to carry out essential activities in the country.

### Itzel Hewitt: "The greatest satisfaction is in having done my job right"

Itzel has been working as the coordinator of Panama's nationwide immunization program since 2008. In Itzel's words, the key to ensuring a committed working team and keeping Panama



Itzel Hewitt.

polio-free has been to "create a sense of belonging, reinforce the program's mystique," and foment a sense of "empowerment and passion" in everyone working in immunization. When we empower those who work in the program, we ensure success.

Itzel has played a highly important role over the years in ensuring the program's success. She believes that one of her major contributions was the implementation of home visits to complement the review of vaccination files within the health units. She has worked with PAHO and other strategic partners to highlight the actions that are needed, in addition to ensuring the continuity of surveillance and vaccination activities. Itzel partic-

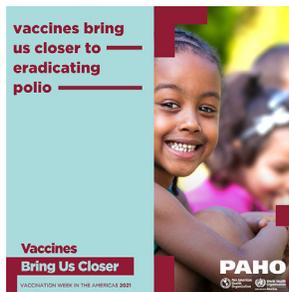
ipates in additional activities, such as Vaccination Week in the Americas, and national campaigns to update and include polio-related activities. These initiatives have proven to be effective even during the COVID-19 pandemic.

Itzel believes that COVID-19 vaccination has increased awareness among high-level actors who were not previously involved in the program's activities – from the process of acquiring vaccines to the use of biologics. This has resulted in increased awareness of the importance of vaccination, and greater opportunities for the program.

Itzel advises health personnel who have recently joined the immunization program to take advantage of all of their contacts with children, in order to review their vaccination schedules and, when necessary, make sure they are completed.

Itzel says, with passion, that for her, "the greatest satisfaction is in having done my job right." ■

## Polio Vaccination Acceptance and Communication: The Top 3 Lessons We Can Apply to COVID-19 and Routine Vaccination



Over the years, successful polio vaccination communication campaigns have employed a mix of risk communication, community engagement, communication for development, and crisis communications approaches

that have also helped support the achievements of the Region's immunization program to date. These communication approaches must now be adapted to protect these gains. Additionally, we can learn from experiences with polio vaccination acceptance and communication and apply this knowledge to routine and COVID-19 immunization. Below are three critical and relevant takeaways that can be considered for ongoing vaccination activities. These three lessons are closely interconnected.

### 1. Understand the factors that influence decisions and build norms for vaccination

The decision to get vaccinated – whether it's a parent taking their infant to receive a polio vaccine, or an individual with chronic conditions seeking a COVID-19 vaccination – is influenced by a variety of complex factors: trust in the immunization program, ease of accessing quality vaccination services, and family/friend support for immunization, among others. Gathering social and behavioral data to understand these factors can help target interventions for intended audiences and population groups. As this is done, reinforcing vaccination as a norm and value for the community can continue to be built on – this is something the polio immunization program has done very well.

### 2. Engage with trusted community leaders

Polio campaigns have long counted on the support of trusted community leaders to help create norms for vaccination; these leaders can include people in religious, local government, civil society, or educational roles. Once these leaders are on board with immunization, they can help promote it among the population groups that look to them for trusted advice. Not only can these leaders help set an example for their communities in favor of vaccination, but they can also help provide insight as

to the community's pulse on the topic: What are the questions they've received about immunization? What are the myths and rumors circulating about vaccines or vaccinators? What are the gaps they've identified that health services need to fill to have more successful vaccination campaigns?

In this way, community leaders can both advocate for immunization and provide expert insight into their communities.

### 3. Leverage trust in health care workers

Health care workers who administer polio vaccines have a special reputation around the world for being extremely dedicated individuals who care deeply about protecting every single child with the life-saving power of immunization; they are known for being passionate and willing to travel in even the most difficult conditions to vaccinate. However, these heroic efforts would be for naught if communities don't trust the health care workers and the vaccines they bring.

Many studies have shown that health care workers are the most trusted source of immunization information in their communities. That is why getting these trusted individuals on board with vaccination is critical to achieve high uptake of immunization services in a community. To make the most of this situation, it is important to invest in health care workers so they are able to maintain positive, trusting relationships with the communities they serve; target health care workers with specific communication and information, education, and communication (IEC) interventions so they have the correct information to do their job well; and train them in interpersonal communication about vaccination, so they can empathetically respond to questions and concerns their communities have about vaccination.

### Read more:

GPEI. "Polio prevention: The communities.": <https://polioeradication.org/polio-today/polio-prevention/the-communities/>

"The Polio Communication Global Strategy." [https://polioeradication.org/wp-content/uploads/2016/09/Polio-Communications-Global-Guide-Part-1-or-4-Jan2016\\_EN.pdf](https://polioeradication.org/wp-content/uploads/2016/09/Polio-Communications-Global-Guide-Part-1-or-4-Jan2016_EN.pdf) ■

## The International Transmission and Spread of Poliovirus in the Context of Implementing the International Health Regulations: A Call to Action

With the entry into force of the International Health Regulations (IHR), in June 2007, Member States committed to notify the Pan American Health Organization (PAHO) of any potential public health emergency of international concern, while PAHO, for its part, agreed to evaluate such reports and, when appropriate, declare a public health emergency of international concern (PHEIC), provided that the requirements and procedures needed for such a declaration are met.<sup>10</sup>

According to the International Health Regulations (2005), a public health emergency of international concern is an extraordinary event that is determined to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response. Since its implementation, five PHEICs have been declared, two of which remain in force: the current COVID-19 pandemic and the PHEIC related to the international spread of poliovirus.<sup>11</sup> On 5 May 2014, the spread of wild poliovirus worldwide was declared a public health emergency of international concern, and temporary recommendations were made to stop this spread through a coordinated international response.<sup>12</sup>

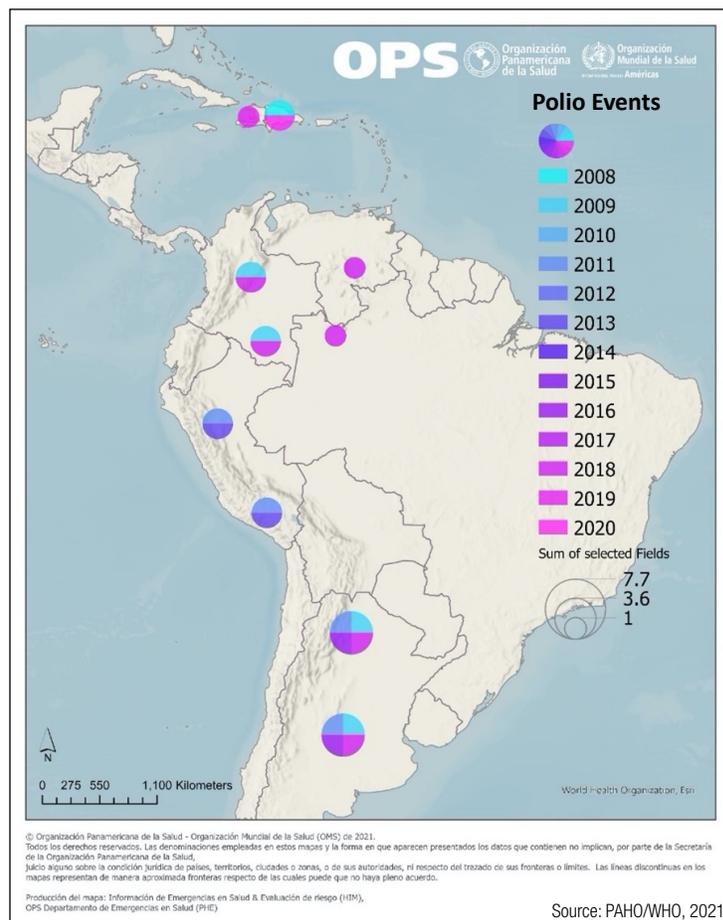
On 20 August 2021, after receiving the evaluation of the Emergency Committee, which advises the Director-General of the World Health Organization (WHO), regarding the emergency caused by the spread of polio worldwide, the Director reiterated that the emergency declaration remained in force, along with the previously formulated temporary recommendations.<sup>13</sup>

Member States in the Region of the Americas continue to be committed to maintaining the necessary levels of polio vaccination coverage, maintaining adequate surveillance of acute flaccid paralysis (AFP), and reporting, through the IHR National Focal Point (NFP), any detected cases, from human or non-human sources, of:

- wild poliovirus;
- vaccine-derived poliovirus (type 1, 2, or 3); and
- Sabin and Sabin-like type 2 viruses.

From 2008 to the present, 12 polio-related events have been reported to PAHO/WHO by six countries in the Region. The initial source of information in eight (67%) of these events was the IHR national focal point (NFP). Mean time between the onset of symptoms and reporting was 74 days (range 33 to 272 days). See **Table 3** and **Figure 2** below. None of these events spread beyond the area where they occurred, and there was no international spread. However, the decline in polio vaccination coverage in most countries and territories of the Region, coupled with the weakening of AFP surveillance caused by the COVID-19 pandemic, is a reminder of the risk that polio could be reintroduced in the Americas. ■

**Figure 2. Distribution of polio events reported in the Region of the Americas, by year of occurrence**



**Table 3. Polio events reported by countries in the Region of the Americas, 2008 to 2021 (August)**

Year	Country	Event	Source of the report	Date of onset of symptoms (DOS)	Date of report to PAHO/WHO	Estimated time between DOS and date of report to PAHO/WHO (days)
2008	Dominican Republic	Sabin type 1 vaccine-derived poliovirus (S1)	NFP	31-12-2007	12-05-2008	133
2009	Argentina	Immunodeficiency-related vaccine-derived poliovirus (iVDPV) S1	NFP	N/D	28-05-2009	N/D
2009	Colombia	Type 2 vaccine-derived poliovirus	NFP	15-07-2009	14-09-2009	61
2011	Argentina	Immunodeficiency-related vaccine-derived poliovirus (iVDPV) type 1	WHO	29-04-2011	25-07-2011	87
2011	Peru	Type 2 vaccine-derived poliovirus	WHO	11-04-2011	08-06-2011	58
2013	Peru	Immunodeficiency-related vaccine-derived poliovirus (iVDPV)	NFP	N/D	24-06-2013	N/D
2016	Argentina	Type 2 vaccine-derived poliovirus	NFP	02-03-2016	01-08-2016	152
2018	Argentina	Immunodeficiency-related vaccine-derived poliovirus (iVDPV)	NFP	20-11-2018	23-12-2018	33
2018	Colombia	Immunodeficiency-related vaccine-derived poliovirus (iVDPV)	Government institution	01-03-2018	22-06-2018	133
2018	Venezuela	Vaccine-associated paralytic polio (VAPP)	Other	29-04-2018	07-06-2018	39
2019	Haiti	Sabin type 3 vaccine-derived poliovirus in a case of AFP	WHO	213-02-2019	12-11-2019	272
2020	Dominican Republic	Sabin type 3 vaccine-derived poliovirus in a case of AFP	NFP	26-05-2020	10-07-2020	45

N/A: Data not available.

<sup>10</sup> Fifty-sixth World Health Assembly. (2003). Revision of the International Health Regulations. World Health Organization. Available at: [https://apps.who.int/gb/archive/pdf\\_files/WHA56/ea56r28.pdf](https://apps.who.int/gb/archive/pdf_files/WHA56/ea56r28.pdf)

<sup>11</sup> International Health Regulations Emergency Committees. Available at: <https://www.who.int/teams/ihr/ihr-emergency-committees>

<sup>12</sup> Statement of the Emergency Committee, convened under the International Health Regulations (2005), regarding the international spread of poliovirus. Available at: <https://www.who.int/news/item/05-05-2014-who-statement-on-the-meeting-of-the-international-health-regulations-emergency-committee-concerning-the-international-spread-of-wild-poliovirus>

<sup>13</sup> WHO statement of the Twenty-Ninth Meeting of the International Health Regulations Emergency Committee (to review data on the worldwide spread of poliovirus) 20 August 2021. Available at: <https://www.who.int/news/item/20-08-2021-statement-of-the-twenty-ninth-polio-ihr-emergency-committee>

## Regional Polio Laboratory Network

Since 1985, when the goal of polio eradication in the Region of the Americas was established, virological surveillance of polioviruses was recognized as essential to the eradication (elimination) program. This, in turn, facilitated an understanding of the epidemiology of polio in the Region, made it possible to identify areas of wild poliovirus transmission, and provided critical evidence for certifying that the goal of eradication had been achieved.

In 1986, PAHO established a Regional Network of Polio Laboratories, in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), in order to provide immunization programs in the Region with virological data, through poliovirus isolation and typing tests. The network was constructed with the support of high-capacity public health laboratories strategically located in countries of the Region. Initially, the network consisted of 10 laboratories in eight countries.

Based on the technical capacity of these laboratories, the network structure comprised three groups:

- Group 1: laboratories with virus isolation and typing capacity
- Group 2: laboratories with additional capacity to characterize poliovirus isolates by nucleic acid probe hybridization or polymerase chain reaction (PCR)
- Group 3: laboratories with additional capacity to perform genetic sequencing and to develop new assays or produce reagents

The network provided an opportunity to strengthen laboratory diagnosis through the standardization, evaluation, and implementation of methods of virological surveillance in the Region. The purpose was to maintain sensitivity in order to isolate or recover poliovirus in cell cultures and ensure accuracy in virus typing.

The network also promoted coordination between field surveillance and the laboratory, identifying areas of wild poliovirus transmission that then became sites for intensified polio vaccination activities. This assertive communication also allowed for improved sample collection and referral, in addition to defining priorities for sample processing, at times when the number of samples received in the laboratory exceeded sample-processing capacity.

From the start of the network, procedures for quality control and participation in tests of technical competence were considered important criteria for increasing the reliability of laboratory results.

The information provided by the network also made it possible to retire some of the tests used to confirm cases of poliomyelitis, such as serology: given the massive use of polio vaccines that stimulate a child's immune system, it was impossible to determine a correlation between antibody concentration and infection by the wild virus.

Technological developments were incorporated into the network. Molecular assays for typing polioviruses were also gradually introduced, moving from probe hybridization to conventional PCR and real-time PCR tests and genetic sequencing.

The laboratory network evolved along with the programs. Some initiatives, such as the one in the English-speaking Caribbean countries to eliminate measles by 1995, made it possible to expand the laboratory network services from polio to other vaccine-preventable diseases.

Applied research has been highly important for the programs. Moreover, recommendations on matters such as analyzing stool and contact samples and the use of cell lines have contributed to adjustments in the program. Lastly, it is worth noting that the network would not be the same without the commitment and hard work of all the people involved. It is due to their efforts that laboratory surveillance of polioviruses has been possible for more than 35 years in the Region of the Americas. All deserve recognition for their work, effort, and dedication.

The laboratory network faces multiple challenges, including: poor quality of samples, preserving samples at the proper temperatures, obtaining the minimum necessary data from each sample, sufficient and timely provision of equipment, reagents and supplies, and retaining trained laboratory personnel. Most of these challenges have become increasingly apparent over time, as focus on the program has declined, due perhaps to a lowered perception of risk and the need to address other priority public health programs.

In recent years, countries have been increasing the requirements for importing biological specimens into their territories, thus making it more difficult for reference laboratories to receive samples and biological reagents on a timely basis. In addition, the costs of international transportation services have increased dramatically, requiring a large allocation of financial resources for surveillance programs.

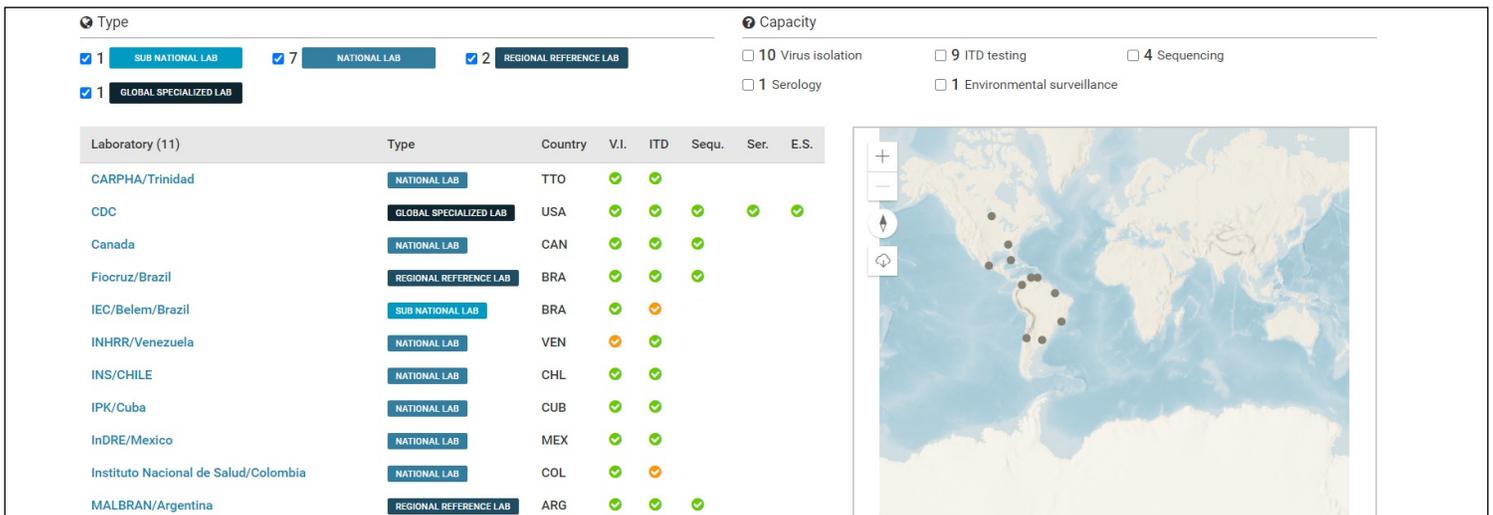
Since 2009, the regional network of polio laboratories has consisted of 11 laboratories in nine countries (Argentina, Brazil, Canada, Colombia, Chile, Cuba, the United States, Mexico, and the Bolivarian Republic of Venezuela). At present, the technical capacities of the laboratories include 11 with the ability to carry out viral isolation and intratypal differentiation (through real-time PCR), and four capable of doing genetic sequencing. Environmental surveillance of poliovirus has been intermittent, and serological tests to assess population immunity are currently being conducted in only one network laboratory, while one other laboratory has the ability to carry out studies (see **Figure 3**).

The new strategy of the WHO Polio Eradication Strategy 2022–2026, called "Delivering on a Promise," proposes that laboratory results be reported within 21 days. To this end, it is expected that new assays will be incorporated in the laboratories, along with expanded capacities for performing poliovirus sequencing. An expansion of environmental surveillance of polioviruses is also being proposed, in order to complement surveillance of acute flaccid paralysis.

The new strategic plan calls for optimizing resources and formulating a realistic set of priorities. These new challenges must be addressed by countries and laboratories, with the support of partners and PAHO/WHO.

In summary, the network of polio laboratories has made it possible to maintain laboratory surveillance of poliovirus in the Region, thus enhancing countries' response capacity. Institutions with polio laboratories have supported the response to communicable viral diseases by relying on their technical expertise, including cell culture, viral isolation, serological assays (seroneutralization, ELISA), and molecular assays (probe hybridization, PCR, genetic sequencing). The network also outlined technical requirements to be implemented in such networks, including standardized laboratory testing, quality control, participation in proficiency testing, technology transfer, training, monitoring, and communication. ■

**Figure 3. Types of laboratories and installed technical capacity**



Source: WHO, GPLN-MS.

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# PAHO

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Dr. Arlene King.

response, with anticipated declines in immunization coverage in 2021, and a projected 9.1% decline in regional gross domestic product (GDP). Consequently, the full impact of the pandemic on immunization programs remains to be seen.

Of note, regional progress on the identification, quantification, destruction, and containment of polioviruses in facilities has been exemplary. Based on the review of 23 annual reports from 2019 (22 country reports and 1 sub-regional report from the Caribbean), 40 out of 44 countries and territories were assessed as having minimized the risk of re-introduction of poliovirus from facilities collecting, handling, or storing infectious or potentially infectious poliovirus materials.<sup>14</sup>

The following are three key lessons I've learned from my work on polio eradication:

**Setting goals matters.** In 1985, the countries of the Americas set the goal of eliminating polio in the Region. Endorsed at the highest political levels, this goal gave us something to strive towards and to regularly monitor and measure.

**Strong public health and immunization systems matter.** Vaccine-preventable disease and immunization program staff, expert advisory groups, and nongovernmental groups across our Region have continued to put their minds, hearts, and souls into preventing and controlling life-threatening and disabling vaccine-preventable diseases, including polio. This dedication has led to remarkable results.

**The basics of communicable disease control work.** Strong epidemiologic and laboratory surveillance, testing, case isolation, contact quarantine, high immunization coverage, facility biosafety and biosecurity, infection prevention and control, and emergency preparedness and response are the bedrocks of communicable and vaccine-preventable disease prevention and control.

However, establishing goals is an empty promise if not accompanied by sustained financial commitment in support of the necessary infrastructure – trained human resources, tools, and processes, at all administrative levels, to achieve and maintain our work. The international spread of WPV and cVDPV remains a public health emergency of international concern.<sup>15</sup> Much of our Region remains vulnerable due to declining Polio vaccination coverage, which has gone from 87% to 81% from 2016 to 2020<sup>16</sup>, masking large population immunity gaps at national

and subnational levels and representing a threat to our regional polio-free status. Concomitant declines in acute flaccid paralysis (AFP) surveillance, including AFP rates, the proportion of cases investigated within 48 hours and proportion of AFP cases on which an adequate stool sample was collected, risk serious delays in detection of polioviruses should importations or an emergence occur. In the past 52 epidemiologic weeks, **no country in the Region has met these 3 indicators.** Furthermore, 8 countries have been assessed as at very high or high risk of polio, representing 32% of the population of the Americas under 1 year of age. In recent memory, the risk of an outbreak of WPV1/cVDPV has never been higher.

In July 2021, in support of the recommendations provided by the RCC at our last meeting<sup>14</sup>, PAHO's TAG dedicated considerable time to discussing and developing 13 recommendations to prevent the re-emergence of polio in our Region.<sup>16</sup> To sustain the elimination of polio, I call on every country to review those recommendations carefully. Also, as we discuss the lessons learned from our response to the COVID-19 pandemic, we need to do so with a view to maintaining the elimination of polio in our countries and Region, and to strengthening our public health and immunization systems as vital public goods for the benefit of current and future generations. ■

<sup>14</sup> 12th Meeting of the Regional Certification Commission for the Polio Endgame in the Region of the Americas Report. <https://www.paho.org/en/documents/12th-meeting-regional-certification-commission-polio-endgame-region-americas-report>

<sup>15</sup> Statement following the Twenty-Eighth IHR Emergency Committee for Polio. 21 May 2021. : <https://www.who.int/news/item/21-05-2021-statement-following-the-twenty-eighth-ihre-emergency-committee-for-polio>

<sup>16</sup> XXVI Meeting of PAHO's Technical Advisory Group on Vaccine Preventable Diseases. Vaccines Bring Us Closer. 14-16 July 2021. Virtual meeting. Final Report available at <https://iris.paho.org/handle/10665.2/54833>