

10 June 2022

Considering the risk of importation of wild poliovirus and vaccine-derived poliovirus, or the emergence of vaccine-derived poliovirus in the Region of the Americas, the Pan American Health Organization/World Health Organization (PAHO/WHO) shares with its Member States a series of considerations related to the prevention, surveillance, and preparation

### Situation summary

Following certification of the global eradication of wild poliovirus types 2 and 3, polio continues to be endemic for wild poliovirus type 1 (WPV1) in two countries, Afghanistan and Pakistan. In Afghanistan, as of 7 June 2022, one case of WPV1 had been detected and four were detected in 2021. In Pakistan, 8 cases of WPV1 have been reported in 2022.

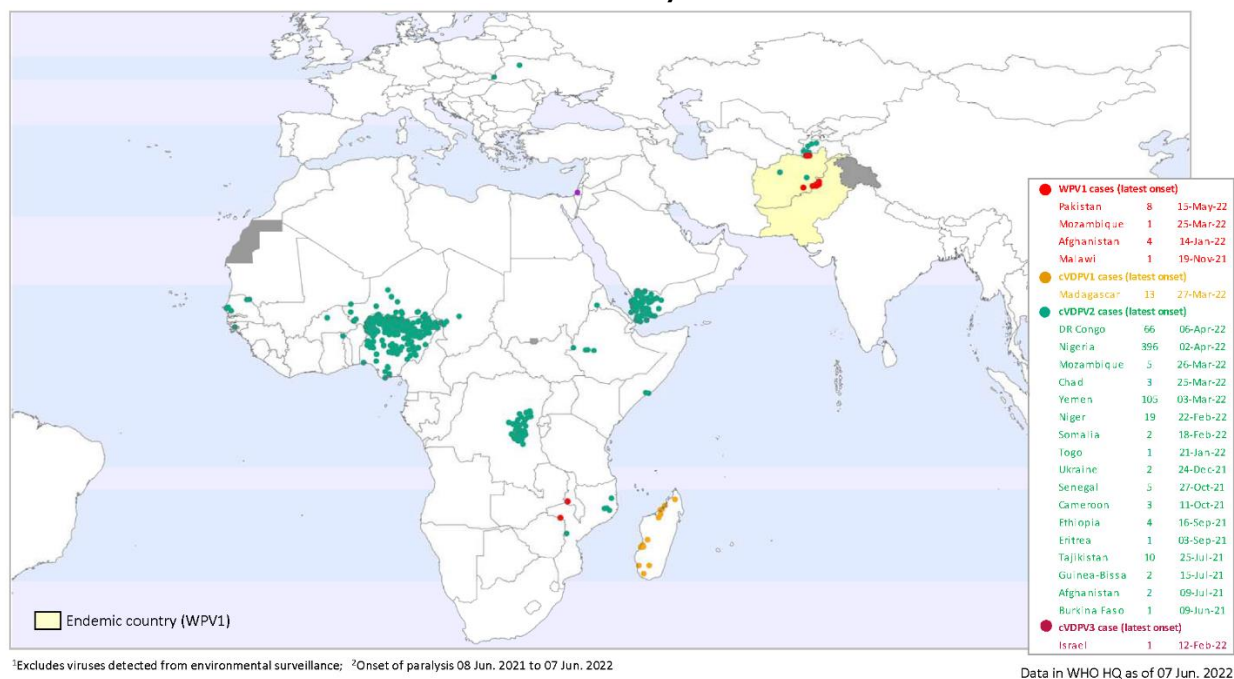
In addition, in February 2022, the isolation of a WPV1 was confirmed in a three-year-old girl with acute flaccid paralysis (AFP) in Malawi. The analysis shows that the virus is genetically linked to WPV1 that was detected in Pakistan in October 2019. This is the first case of WPV1 on the African continent in more than five years. In May 2022, one case of WPV1 was identified in stool samples collected from a child with AFP in Mozambique. Sequencing of the virus confirmed that it is linked to a strain from Pakistan, similar to a WPV1 case reported in Malawi in February.

This detection of WPV1 outside the two endemic countries, Pakistan and Afghanistan, is of great concern and underscores the importance of prioritizing activities to detect and control polio.

Additionally, several countries in Africa and Asia have circulation of vaccine-derived poliovirus (cVDPV), variants of poliovirus that may arise in communities with low vaccination coverage. Recently, VDPV outbreaks have been detected in Israel and Ukraine. (**Figure 1**).

As long as poliovirus transmission is not interrupted worldwide, all countries remain at risk of polio importation.

**Figure 1. Number of WPV1 and cVDPV in each country affected in the last 12 months.**



**Source:** Polio Global Eradication Initiative. Available at: <https://polioeradication.org/polio-today/polio-now/>

## Situation Summary in the Region of Americas

In 1994 the Region of the Americas was certified as polio-free. This achievement was attained through the implementation of routine vaccination programs, the use of mass vaccination campaigns, and the implementation of surveillance of cases of acute flaccid paralysis (AFP) in children under 15 years of age.

Since the certification of polio elimination, countries in the Americas have continued vaccination efforts and epidemiological surveillance of AFP. However, between 2020 and 2021, the decline in vaccination coverage that already started before the COVID-19 pandemic was exacerbated. In 2020 there was a significant decrease in the detection of AFP per 100,000 children < 15 years compared to the detection in prior years. At the regional level, the average rate fell from 1.27 for the period 2016-2019, to 0.83 for 2020 and 2021. Also, comparing these same periods, there is a marked increase in the number of countries/territories that did not reach a rate greater than or equal to 1 (**Table 1**).

According to the Polio Eradication & Endgame Strategic Plan 2013-2018, all countries were required to introduce at least one dose of inactivated polio vaccine (IPV) in 2015 in preparation for the synchronized switch from trivalent oral polio vaccine (tOPV) containing all three serotypes to bivalent oral polio vaccine (bOPV) containing only serotypes 1 and 3. Problems with the supply of IPV vaccine made it difficult to meet this goal. In the Region of the Americas, the Technical Advisory Group (TAG) on Vaccine-Preventable Diseases recommended in 2015 the introduction of two doses of IPV. The late introduction of IPV and suboptimal coverage have resulted in an increase in the number of children susceptible to poliovirus type 2 worldwide. The detection of any type 2 poliovirus (wild, vaccine-derived or Sabin) in any sample, from any source, is considered a public health emergency that requires a rapid and coordinated response at the global, national and subnational levels.

**Table 1. Rates of acute flaccid paralysis (AFP) detected per 100,000 children <15 years**

Subregion	Country	Rate 2016	Rate 2017	Rate 2018	Rate 2019	Rate 2020	Rate 2021
North America	CAN	0.67	0.33	...	0.15	0.12	0.10
	MEX	1.72	1.62	2.02	2.43	1.42	1.56
Central America	CRI	2.91	2.53	1.50	1.51	1.32	0.95
	GTM	0.50	0.76	0.96	1.15	0.64	0.78
	HND	2.02	1.49	1.55	1.85	1.65	1.52
	NIC	1.43	1.05	1.05	1.40	0.92	0.67
	PAN	1.58	2.05	1.30	0.55	0.96	0.87
	SLV	2.89	2.58	2.58	2.04	0.99	2.22
Caribbean	CAR*	1.36	0.34	0.23	0.11	0.22	0.11
	CUB	0.93	1.64	1.48	1.61	1.16	1.01
	DOM	1.05	0.48	0.48	0.80	0.37	0.17
	HTI	0.39	0.22	0.25	0.39	0.22	0.27
South America	ARG	1.88	1.87	1.80	1.66	0.78	0.03
	BOL	0.69	1.12	1.29	0.68	0.45	0.51
	BRA	1.05	1.02	1.06	0.99	0.56	0.65
	CHL	2.08	1.91	1.78	1.71	1.11	0.77
	COL	1.59	1.34	1.45	0.67	0.77	1.19
	ECU	0.53	0.81	0.83	0.46	0.33	0.58
	PER	0.64	0.59	0.88	1.37	0.55	0.43
	PRY	1.40	1.44	1.73	1.29	0.92	1.26
	URY	0.68	0.55	0.55	1.11	0.14	...
	VEN	1.29	0.94	0.87	1.15	0.95	1.21
<b>Total</b>		<b>1.29</b>	<b>1.19</b>	<b>1.29</b>	<b>1.30</b>	<b>0.81</b>	<b>0.85</b>

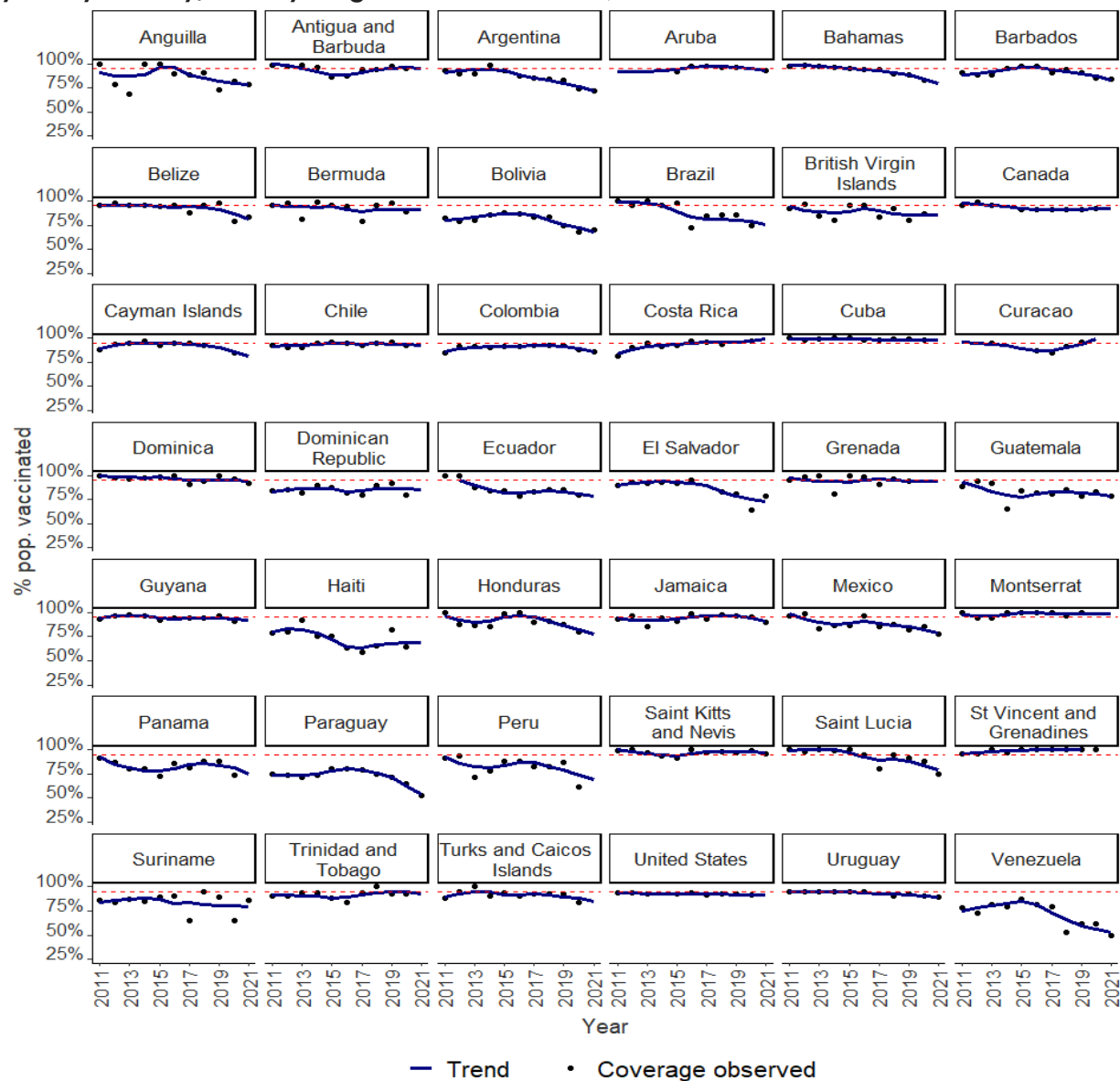
\*CAR includes reports from CARPHA member countries

**Source:** Country reports to FPL/IM-OPS. Available at: <https://www.paho.org/en/polio-weekly-bulletin>

Additionally, as shown in **Figure 2**, Polio3 coverage (either of the oral vaccine or the inactivated polio vaccine in children under 1 year of age) shows a downward trend or is below 95% in 33 of the 42 countries/territories for which data are shown.

If this trend continues in vaccination coverage and epidemiological surveillance, there is a high risk of outbreaks occurring after the importation of a virus (wild or derived from the vaccine) or the emergence of vaccine-derived poliovirus, and that these are not detected in time.

**Figure 2. Immunization coverage of the third dose of polio (% of vaccinated population) per year by country/territory. Region of the Americas, 2011 to 2021\*.**



**Note:** \*some countries/territories have information available until 2020

**Source:** PAHO/WHO immunization coverage. Available at:

[https://ais.paho.org/imm/IM\\_JRF\\_COVERAGE.asp](https://ais.paho.org/imm/IM_JRF_COVERAGE.asp)

## Guidance for national authorities

Given these findings, the Pan American Health Organization / World Health Organization (PAHO/WHO) reminds Member States that the most effective measures to reduce the risk of poliovirus outbreaks is to maintain good levels of immunity of the population through high and homogeneous vaccination coverage, and through sensitive epidemiological surveillance that allows the timely detection and investigation of all AFP cases.

In addition, the following considerations on vaccination, surveillance, risk mitigation and outbreak response plans are provided for national authorities.

## Vaccination

PAHO/WHO recommends all countries achieve and maintain high levels of polio vaccine coverage ( $\geq 95\%$ ), both nationally and subnationally. Countries that have not introduced the second dose of inactivated polio vaccine (IPV2) should do so as soon as possible.

## Surveillance

It is important that all countries/territories in the region strengthen surveillance of AFP cases to facilitate a timely response to the detection of an import or emergence of vaccine-derived poliovirus:

- Detection and reporting of cases of AFP in children under 15 years of age: Train health personnel at all levels in the detection and notification of AFP. The number of AFP cases reported each year is used as an indicator of a country's ability to detect polio, even in countries where the disease no longer occurs. A country's surveillance system must be sensitive enough to detect at least one case of AFP for every 100,000 children under the age of 15, even in the absence of polio.
- Collection and transport of stool samples for analysis: At the onset of paralysis, polio can be difficult to differentiate from other forms of AFP such as Guillain-Barré syndrome, transverse myelitis or traumatic neuritis. All children with AFP should be screened for wild poliovirus within 14 days of the onset of paralysis. For polio testing, fecal samples are tested for the presence of poliovirus. Samples must arrive at the laboratory within 72 hours of collection. Otherwise, they must be frozen (at  $-20$  degrees Celsius) and then sent frozen.
- Laboratory confirmation: The sample is inoculated into cell cultures where the virus can infect and replicate. The isolated virus is then typified by molecular assays (RT-PCR) to determine the serotype and whether it is a wild virus, or a vaccine virus. Then genetic sequencing tests confirm its genotype. The genetic sequence obtained is compared with a reference bank of known polioviruses, allowing inferences to be made about the geographical origin of the virus isolated from the sample.

## Risk mitigation plan

Countries/territories are recommended to develop a risk analysis and implement the necessary actions to mitigate the risk by achieving high vaccination coverage and maintaining a sensitive surveillance system.

## Outbreak response plan

Countries/territories are urged to have an up-to-date outbreak response plan in place to be prepared to respond in a timely manner the occurrence of an imported WPV1 or vaccine-derived poliovirus case or to the emergence of vaccine-derived poliovirus.

## Additional information

- Global Polio Eradication Initiative. Available at: <https://bit.ly/3NFEPQD>
- WHO - Global eradication of wild poliovirus type 3. Available at: <https://bit.ly/33YW8EK>
- WHO - Polio Factsheet. Available at: <https://bit.ly/2m1wajg>
- Global Polio Eradication Initiative - WHO Global Circulating Vaccine-derived Poliovirus (cVDPV) as of 22 March 2022. Available at: <https://bit.ly/39gVSJR>
- WHO - GPEI guidelines on Classification and reporting of VDPV. Available at: <https://bit.ly/3QcmUCB>
- WHO - Statement of the Thirty-first Polio IHR Emergency Committee. Available at: <https://bit.ly/3xoMkEo>
- Global Polio Eradication Initiative - GPEI: Outbreak Countries. Available at: <https://bit.ly/3xmb4gz>
- Global Polio Eradication Initiative - GPEI: Surveillance. Available at: <https://bit.ly/3zvoucM>
- PAHO/WHO - 13th Meeting of the Regional Certification Commission for the Polio Endgame in the Region of the Americas Report. Available at: <https://bit.ly/3HakAbj>
- PAHO/WHO - Reports of the Technical Advisory Group (TAG) meetings. Available at: <https://bit.ly/3aKuW5p>