

POLIO ERADICATION STRATEGY

GPEI response to the midterm review



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DEDICATION

For their invaluable contributions to world health by vaccinating children and delivering other health services to their communities, the Global Polio Eradication Initiative (GPEI) dedicates this report to frontline workers, particularly those workers who have lost their lives.

The report is also dedicated to children, adolescents, and adults affected by polio and to polio-affected advocates who have used their voices and experiences to play a defining role in the eradication effort.



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Acronyms

AFP	Acute Flaccid Paralysis
bOPV	Bivalent oral polio vaccine
CDC	U.S. Centers for Disease Control and Prevention
COVID-19	Coronavirus disease (2019)
cVDPV	Circulating vaccine-derived poliovirus
cVDPV1	Circulating vaccine-derived poliovirus type 1
cVDPV2	Circulating vaccine-derived poliovirus type 2
DD-INT	Direct detection with intratypic differentiation
DDNS	Direct detection by nanopore sequencing
EMRO	Regional Office for the Eastern Mediterranean
EMU	Executive Management Unit
EPI	Expanded Programme on Immunization
FRR	Financial resource requirements
GCC	Global Commission for the Certification of the Eradication of Poliomyelitis
GPEI	Global Polio Eradication Initiative
H2H	House-to-house (campaigns)
IA2030	Immunization Agenda 2030
IMB	Independent Monitoring Board
IPV	Inactivated polio vaccine
IPV1	Inactivated polio vaccine first dose
MR	Measles rubella (vaccine)
NID	National Immunization Day
Non-FRR	Non-financial resource requirements
nOPV2	Novel oral polio vaccine type 2
nOPV1	Novel oral polio vaccine type 1
nOPV3	Novel oral polio vaccine type 3
OBR	Outbreak response
OPV	Oral polio vaccine
PHC	Primary health care
POB	Polio Oversight Board
RUR	Reaching the Unreached (vaccination strategy)
SAGE	Strategic Advisory Group of Experts on Immunization
SC	Strategy Committee
SIA	Supplemental immunization activity
SNID	Subnational Immunization Day
TAG	Technical Advisory Group
UNICEF	United Nations Children's Fund
VDPV	Vaccine-derived poliovirus
WASH	Water, sanitation, and hygiene
WHO	World Health Organization
WPV	Wild poliovirus
WPV1	Wild poliovirus type 1
WPV2	Wild poliovirus type 2
WPV3	Wild poliovirus type 3

Executive summary

The Global Polio Eradication Initiative (GPEI) draws upon the strengths of national governments and six core partners, in collaboration with independent advisory bodies, donors, and health, immunization, and humanitarian partners, to protect children around the world from the debilitating effects of polio. Through this public–private partnership, an estimated 20 million people are walking today who otherwise would have been paralyzed.

In 2022, the GPEI launched a new strategy centered on two goals: permanently interrupting all poliovirus transmission in the endemic countries of Afghanistan and Pakistan (Goal One); and stopping circulating vaccine-derived poliovirus (cVDPV) transmission and preventing outbreaks in non-endemic countries (Goal Two). Because the work is complex and the stakes are high, the [Polio Eradication Strategy 2022–2026](#)¹ called for a rigorous review in 2023. The GPEI entrusted this midterm review to the Independent Monitoring Board (IMB), a panel of external advisors who collectively serve as a critical partner in programme accountability.

This report offers the GPEI’s response to the IMB midterm review. It was developed by the Strategy Committee (SC) with the support of the Executive Management Unit (EMU). The report was presented to the Polio Oversight Board (POB) on 14 October 2023 for their endorsement and engagement toward the work that lies ahead. The information contained in this report is current as of 10 October 2023. For the latest information, visit the GPEI website at www.polioeradication.org.

The Midterm Review

In [Closing in on Zero: Adapting to Complexity and Risk on the Path to End Polio](#), the IMB delivers its assessment of the status of the strategy’s two goals, enumerates risks that could impede eradication, and proposes actions for the GPEI’s consideration². Among identified risks, the IMB emphasizes stagnating essential immunization coverage, emerging outbreaks of circulating vaccine-derived poliovirus type 1 (cVDPV1), and missed opportunities for integrated programme delivery. Adding complexity to the eradication effort, several geopolitical risks present formidable challenges, particularly through conflict, insecurity and inaccessibility.

¹ Global Polio Eradication Initiative (GPEI). Polio Eradication Strategy 2022–2026: Delivering on a promise. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf>, accessed 20 November 2023).

² Independent Monitoring Board (IMB). Closing in on zero: Adapting to complexity and risk on the path to end polio; September 2023 (<https://polioeradication.org/wp-content/uploads/2023/09/22nd-Report-of-The-Independent-Monitoring-Board-IMB.pdf>, accessed 20 November 2023).

- **In Afghanistan**, an acute humanitarian crisis continues to deteriorate with few international health actors left in the country.
- **Pakistan** is experiencing economic instability, political uncertainty and rising insecurity.
- **Parts of the Democratic Republic of the Congo, Nigeria, Somalia, and Yemen** face severe challenges including banditry, kidnapping, famine and weakened health systems.

Risks identified by the IMB have been integrated within the GPEI's risk register, which is regularly reviewed to track and implement mitigating measures, wherever possible (see **Annex A**).

In view of the risks to eradication and the complex contexts in which the GPEI must operate, the IMB concludes that the target milestone for Goal One of interrupting wild poliovirus type 1 (WPV1) transmission in 2023 is off track, while the goal of ending circulating vaccine-derived poliovirus type 2 (cVDPV2) outbreaks by the end of 2023 will be missed.

The GPEI agrees with the IMB's assessment that efforts to reach interruption will extend beyond 2023, even as the programme remains confident that WPV1 certification will be achieved in 2026, in alignment with the strategic goal. The programme also agrees with the IMB assessment that the 2023 milestone for cVDPV2 interruption will be missed; however, the GPEI has scaled up outbreak response to ensure interruption can be achieved in 2025.

Goal One

In Afghanistan and Pakistan, the programme stands unequivocally behind the vaccines, methods and tools at its disposal. These resources have brought the world to the threshold of global polio eradication. Crossing that threshold requires continued dedication and urgency. The programme is working to accomplish this through ongoing advocacy with political leadership at all levels, collaboration with humanitarian actors engaged in integrated delivery of health services, and tailored interventions in subnational areas.

Despite severe challenges, both country programmes have not only remained operational but have also achieved critical health gains that have brought the world closer than ever to the goal of WPV1 interruption. Most notably, historic reservoirs are no longer endemic, and the virus circulates in just four of 34 provinces in Afghanistan and seven of 164 districts in Pakistan. Recognizing that such gains are fragile, the GPEI has introduced a risk categorization framework to focus efforts and implement context-driven campaigns.

Furthermore, mitigation plans are in place to bolster essential immunization, increase cross-border coordination, strengthen engagement with provincial and local leadership, and enhance community engagement.

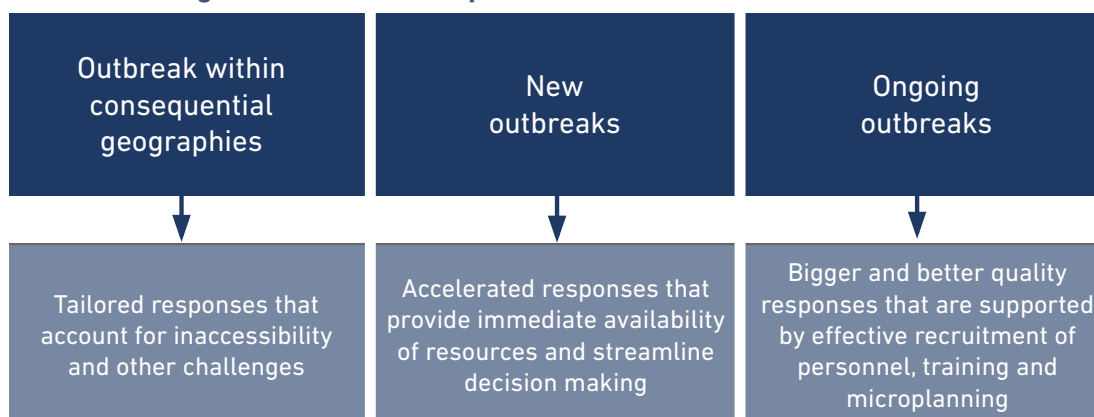
The GPEI has demonstrated its ability to adapt to challenging and rapidly changing circumstances. The programme anticipates achieving WPV1 interruption in 2024, which would leave the 2026 target for certifying eradication within reach as revised guidance from the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC) replaced what was previously a fixed three-year period of non-detection with a period of not less than two years in duration in countries with strong surveillance indicators³.

Goal Two

At the outset of the strategy, efforts to interrupt cVDPV outbreaks were set back by the importation of WPV1 in southeast Africa and an explosive cVDPV1 outbreak in the Democratic Republic of the Congo. The programme nevertheless made headway which is yet insufficient to meet the goal’s target for cVDPV2 interruption.

Key to progress in this complex environment has been an operational adjustment to assess and respond to the most consequential geographies, where weak systems and high rates of zero-dose children have resulted in intractable outbreaks and international spread. In 2022 and 2023, these consequential geographies include parts of the Democratic Republic of the Congo, Nigeria, Somalia, and Yemen. The programme has also restructured its planning and budgeting processes with precise requirements to meet country-level needs and respond more effectively to consequential geographies, ongoing outbreaks and new outbreaks, with the objective of supporting bigger, better and faster responses necessary for achieving interruption (**Table 1**).

Table 1. Strategies for outbreak response



³ Global Polio Eradication Initiative (GPEI). Report from the twenty-second meeting of the Global Commission for the Certification of Poliomyelitis Eradication, 28–29 June 2022. Geneva: World Health Organization; September 2022 (<https://polioeradication.org/wp-content/uploads/2022/09/22nd-GCC-report-20220907.pdf>, accessed 20 November 2023).

The GPEI will build on the momentum of declining cases and cVDPV2 emergencies with a scaled-up outbreak response footing through 2024 and into 2025, if needed. While the programme is attentive to the increased financial resources required, the restructuring of the outbreak budget and planning framework is an operational improvement that will enable intensified efforts in consequential geographies driving the bulk of transmission. Improvements in supply of the novel oral polio vaccine type 2 (nOPV2) also will strengthen outbreak response in this critical period. As engines of transmission slow, programmatic focus will shift to stopping circulation in countries with ongoing outbreaks.

There is a complex task ahead for cVDPV2 interruption. The 2023 milestone for cVDPV2 interruption will be missed, yet the programme is in a vastly improved position to answer the challenge and reach cVDPV2 interruption by 2025. The GCC is considering the criteria to determine cVDPV2 certification. Based on these criteria, a revised certification timeline, plan, and budget will be submitted to the POB in the second quarter of 2024.

The way forward



As the GPEI follows through on recommended actions and risk mitigation activities identified in this report, several forthcoming decisions of the POB are expected. These include: a formal extension of the strategy period; renewed milestones for Goal Two; confirmation of new criteria brought forward by the GCC to certify cVDPV2 interruption; and a revised multi-year budget.

Annex B will be updated to ensure that all partners in the polio eradication effort have ready access to key decisions that define the way forward.

It is now more urgent than ever to remain focused and intensify proven approaches. The world is on the verge of achieving WPV1 interruption, and this momentum will help fuel the commitment to eradicate poliovirus in all forms. No country nor partner should underestimate the historic position the world is in with respect to eradication.

As the world closes in on zero polio cases, the way forward is clear: serious challenges must be overcome while the programme maintains intensity of approach in the endemic countries, expands response activities in countries experiencing outbreaks, maintains momentum, and continues to closely manage the complex geopolitical risks and insecurity that represent the biggest barriers to interruption. The mitigating actions and corrective measures detailed in this report, informed by the thoroughness and candor of the independent monitors, will help to overcome remaining hurdles, optimize response, and deliver a world in which no child suffers paralysis or death from polio.

Overview

The promise of a polio-free world has been the focus of the GPEI for more than three decades. In pursuit of this mission, the GPEI has drawn upon the strengths of national governments and six core agencies—Rotary International, the World Health Organization (WHO), the United Nations Children’s Fund (UNICEF), the U.S. Centers for Disease Control and Prevention (CDC), the Bill & Melinda Gates Foundation (BMGF), and Gavi, the Vaccine Alliance—in collaboration with independent advisory bodies, donors, and health and immunization partners. Collectively, the programme has marked notable achievements: from the certification of the South-East Asia Region as free of wild poliovirus type 1 (WPV1) in 2014, to the declaration of the eradication of wild poliovirus type 2 (WPV2) in 2015 and type 3 (WPV3) in 2019, to the African Region’s certification as free of WPV1 in 2020.

Polio Eradication Strategy 2022–2026

At the start of this decade, however, the GPEI faced a deteriorating epidemiological context exacerbated by the COVID-19 pandemic. While WPV1 transmission had been limited to the final two endemic countries of Afghanistan and Pakistan, programmatic and epidemiological challenges demanded new approaches to the long tail of transmission. Furthermore, the eradication effort was forced to grapple with cVDPVs. As cVDPV outbreaks emerged in 2016 due to type 2 immunity gaps that followed the removal of type 2–containing vaccines from immunization programmes in the wake of WPV2 eradication, pandemic-related disruptions to polio eradication campaigns and essential immunization elevated the risk of outbreaks.

In recognition that historical approaches would be insufficient to meet these last-mile challenges, the GPEI launched a new strategy centered on two goals: permanently interrupting all poliovirus transmission in the endemic countries of Afghanistan and Pakistan (Goal One); and stopping cVDPV transmission and preventing outbreaks in non-endemic countries (Goal Two)⁴. The Polio Eradication Strategy 2022–2026 offered a holistic approach by sharpening the core strategies that enabled the success of the programme while also identifying innovative ways to overcome intractable barriers to eradication.

The strategy’s timeline made 2023 a pivotal year with the interruption of WPV1 transmission and the reporting of the last cVDPV2 isolate targeted for year-end. These milestones were deemed necessary for reaching the goals of certifying WPV1 eradication and cVDPV2 interruption by end–2026. A rigorous review of the programme was earmarked for the end of 2023. The GPEI entrusted this assessment to its IMB.

⁴ Global Polio Eradication Initiative (GPEI). Polio Eradication Strategy 2022–2026: Delivering on a promise. Geneva: World Health Organization; 2021 (<https://apps.who.int/iris/bitstream/handle/10665/345967/9789240031937-eng.pdf>, accessed 20 November 2023).

The Independent Monitoring Board

Throughout the GPEI's history, progress toward polio eradication amid often steep challenges has depended on candidly assessing epidemiological realities, identifying missteps and failures, and implementing course corrections where needed.

A critical partner in accountability, the IMB is composed of external global health advisors who regularly conduct programme assessments by reviewing materials, convening experts within and beyond the GPEI, and conducting field visits to polio-affected countries. Established in 2010, the IMB has a threefold mandate⁵:

1. to evaluate GPEI progress toward goals as on track, at risk, off track, or missed;
2. to identify areas where corrective action plans are required by countries, partners, donor agencies, or other parties; and
3. to evaluate the quality, implementation, and impact of corrective action plans.

The midterm review

For its 22nd report, the IMB was tasked with providing a midterm review of the [Polio Eradication Strategy 2022–2026](#). In [Closing in on Zero: Adapting to Complexity and Risk on the Path to End Polio](#), the IMB delivers its assessment⁶. The report recognizes progress in the endemic countries, which have geographically restricted the virus against a challenging environment and are now as close as ever to WPV1 interruption. It also recognizes that the burden of cVDPV2 transmission has been reduced. Despite these improvements, the midterm review determines that 2023 milestones will be missed. Throughout the review, the IMB explores risks that threaten to further delay interruption or complicate efforts. In view of the risks to eradication and the complex contexts in which the GPEI must operate, the IMB encourages the GPEI to avoid “[being] selective in what it tackles, dismissive of the need to work on the human factors, and ducking the most difficult, intractable obstacles.”⁷ To point the GPEI to what the IMB prioritizes as areas of focus, the midterm review concludes with recommended actions that apply to Goals One or Two or carry programme-wide implications.

⁵ Revised terms of reference for the Independent Monitoring Board (IMB) and the Transition Independent Monitoring Board (TIMB). Geneva: World Health Organization; 2020 (<https://polioeradication.org/wp-content/uploads/2020/02/ToR-IMB-TIMB-Jan2020-Dec2021-20200122.pdf>, accessed 20 November 2023).

⁶ Independent Monitoring Board (IMB). Closing in on zero: Adapting to complexity and risk on the path to end polio; September 2023 (<https://polioeradication.org/wp-content/uploads/2023/09/22nd-Report-of-The-Independent-Monitoring-Board-IMB.pdf>, accessed 20 November 2023).

⁷ Ibid., 7.

GPEI response to the midterm review

The independent assessment performed by the IMB is a valuable component of the polio eradication programme, and the partnership is committed to optimizing its approach to the remaining obstacles.

This report offers the GPEI’s response to the IMB midterm review. It presents the current state of eradication before responding to recommended actions and outlining mitigation measures underway to address risks. The GPEI response was developed by the SC with the support of the EMU. The report was presented to the POB on 14 October 2023 for their endorsement and engagement toward the work that lies ahead. The information contained in this report is current as of 10 October 2023. For the latest information, visit the GPEI website at www.polioeradication.org.

Review risks to eradication and develop risk mitigation activities

Recom. action:	“The GPEI is asked to review the IMB’s list of 20 risks, add any important risk omissions from its perspective, and set out the action being taken to resolve or mitigate each in a way that facilitates monitoring.”	GPEI
1		AGREES

The first action recommended by the IMB is for the programme to review the risks to eradication and establish actions to mitigate their impact. Such an exercise is necessary given the scope of the eradication effort, challenges in closing immunity gaps and narrowing in on timely and effective responses, and the unthinkable costs to the world should paralysis from polio continue threatening children in the years to come.

The GPEI maintains an internal risk register tracking potential threats, and risks identified by the IMB have been integrated within this register. The GPEI also rates each risk.

Risk ratings distinguish:

- inherent risk, meaning the severity of the risk in the absence of mitigating actions; and
- residual risk, characterizing the ongoing severity of the risk after mitigating actions are applied.

Some risks are readily amenable to mitigation. A risk with a high inherent risk rating will carry a low residual risk rating if mitigation is expected to resolve it.

In other cases, such as risks that are outside of the programme's control (including geopolitical risks), the GPEI alone is not in a position to resolve the risk. The programme will take all mitigating measures possible for all risks, but certain challenges will only be resolved by countries themselves or will require multilateral collaboration.

Annex A contains a risk inventory that comprises both the risks identified by the IMB and additional risks identified through the GPEI's internal register.

As the GPEI follows through on the recommended actions and risk mitigation activities identified in this report, several forthcoming decisions of the POB are expected. These include: a formal extension of the strategy period; renewed milestones, particularly for Goal Two; confirmation of new criteria to be brought forward by the GCC of the Eradication of Poliomyelitis to certify cVDPV interruption; and a revised multi-year budget. Annex B will be updated to ensure that all partners in the polio eradication effort have ready access to key decisions that define the way forward.



Goal One

Current state

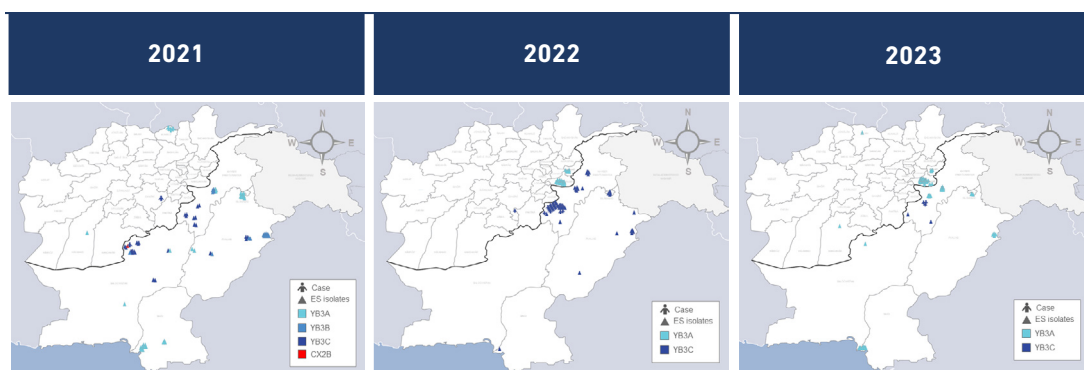


The endemic countries of Afghanistan and Pakistan show considerable progress despite unprecedented difficulty. Pakistan faces intense economic instability, political uncertainty, and rising insecurity. In Afghanistan, the world's largest humanitarian crisis has intensified, contributing to setbacks across the country's health sector. Despite these challenges, both programmes have not only remained operational but have also achieved success in key areas, including:

- a resumption of house-to-house (H2H) campaigns in most of Afghanistan;
- a return to subnational cross-border coordination across the epidemiological block;
- in Pakistan, sustained performance amidst changes in national leadership; and
- in Afghanistan, extensive coordination with humanitarian partners.

Epidemiology confirms the impact of these efforts (**Fig. 1** and **Annex C**). The proportion of children missed during campaigns is decreasing, and overall population immunity is improving. Transmission of cVDPV, which complicated planning at the outset of the strategy, was quickly interrupted due to strong outbreak response. Historic reservoirs for wild poliovirus type 1 (WPV1) are no longer endemic, and the chains of transmission have been reduced to two. The virus remains endemic in seven of 164 districts in Pakistan and just four of 34 provinces in Afghanistan.

Fig 1. WPV1 cases and positive environmental samples by generic cluster, Afghanistan and Pakistan, 2021-2023



Source: WHO. Data as of 10 October 2023.

However, several challenges place this progress in jeopardy.

- Both country programmes face uncertainty as WPV1 survived the 2022–2023 low-transmission season.
- There is still no agreement for H2H campaigns in southern Afghanistan, and the history of disruption of H2H campaigns throughout the country has contributed to potential pockets of susceptibility in children 5–10 years old.
- Positive samples in Kandahar suggest the potential for a large outbreak in southern Afghanistan that could potentially spill over into Pakistan.
- The deteriorating security context in both countries, with low-intensity conflict in the southern Khyber Pakhtunkhwa region of Pakistan, may further impede access to high-risk populations.

The IMB characterizes the WPV1 interruption milestone as off track and likely to be missed by year-end but achievable in 2024, provided the intensity of effort is maintained and current and future risks are successfully managed. Interruption in 2024 would leave the 2026 target for certifying eradication within reach as revised guidance from the GCC of the Eradication of Poliomyelitis replaced what was a previously fixed three-year period of non-detection with a period of not less than two years in duration for countries with strong surveillance indicators⁸.

⁸ Global Polio Eradication Initiative (GPEI). Report from the twenty-second meeting of the Global Commission for the Certification of Poliomyelitis Eradication, 28–29 June 2022. Geneva: World Health Organization; September 2022 (<https://polioeradication.org/wp-content/uploads/2022/09/22nd-GCC-report-20220907.pdf>, accessed 20 November 2023).

Recommended actions

Increase the number of campaigns

Recom. action:	“More polio vaccination rounds should be carried out in the final quarter of 2023 in the endemic countries than currently planned, as well as coordinating them between the two countries.”	GPEI
5		Agrees in principle

The achievements of both endemic country programmes, while hard-won, are also fragile. The IMB is concerned about the resilience of such precarious gains when it highlights a series of risks for Pakistan, Afghanistan, and the epidemiological block they represent—where both countries must interrupt transmission for either country to achieve and sustain eradication. The IMB encourages the GPEI to stay focused on prevention rather than reactively chasing the virus when it recommends that country programmes increase the number of large immunization rounds and strengthen cross-border coordination.

The GPEI is committed to carrying out all necessary immunization activities to interrupt WPV1 transmission. Campaign schedules are guided by the Technical Advisory Group (TAG), which confers extensively with country programmes. It should be noted that more vaccination rounds were scheduled for the second half of 2023 than at the time of the IMB’s assessment in spring 2023 (**Table 2**).

Table 2: Former vs. current SIA calendar, July–December 2023

Afghanistan						Pakistan					
JUL	AUG	SEP	OCT	NOV	DEC	JUL	AUG	SEP	OCT	NOV	DEC
SNID			SNID	SNID		SNID			SNID	SNID	
SNID, OBR	NID	NID	SNID	SNID	SNID	RUR	SNID (OBR)	OBR, RUR	NID	OBR, NID	SNID

Former plan
Current plan

NID= National Immunization Day; OBR= outbreak response;
 RUR= Reaching the Unreached (strategy);
 SNID= Subnational Immunization Day

The GPEI stands by the TAG’s work and endorses its recommendations. Because the geographic spread of WPV1 has been reduced, campaigns have become more focused—and the operational approach under the TAG’s guidance has increasingly prioritized campaign quality over size. In 2022, the TAG introduced a risk categorization framework that defined supplementary immunization activities (SIAs) according to the immunity profiles of targeted areas (**Table 3**). This risk categorization framework guides campaign implementation to focus programme efforts and develop context-driven campaigns. Endemic zones, the areas of highest priority, draw upon a range of strategies to close immunity gaps. For example, southern Khyber Pakhtunkhwa has implemented the “Reaching the Unreached” strategy in the 69 highest-risk union councils, and eastern Afghanistan has carried out essential immunization catch-up to reach zero-dose children.

Table 3. Campaign approach to target areas under the risk categorization framework, Afghanistan and Pakistan

Risk area	Endemic zones	Outbreak response	Risk reduction*	Maintenance districts
Campaign approach	Specific SIA schedules are independent of national schedules and tailored to each context.	A minimum of three large-scale campaigns that aim to reach at least 2 million children.	No fewer than four campaigns in high-risk districts.	At least two SIAs as part of NIDs and additional doses when in outbreak response.

***Note: Many designated risk reduction districts are also included in outbreak response campaigns and receive additional SIA doses.**

NID= National Immunization Day; SIA= supplementary immunization activity

RISK 1.2.	The risk of weakening newly established resilience in Pakistan's former polio reservoir			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Over the past twelve months, the Pakistan programme has demonstrated its resolve by implementing extended aggressive outbreak response to multiple detections of WPV1 isolates in environmental samples. The programme is further intensifying this robust outbreak response strategy to address the increased risk of transmission becoming re-established in the former reservoirs.

Mitigation plans are in place to bolster campaigns and essential immunization in the historic reservoirs, with particular emphasis on Peshawar. Furthermore, the SIA calendar has been intensified (see **Table 1** above), and provincial and district taskforce meetings are held prior to each SIA to ensure the Pakistan programme maintains peak performance.

RISK 1.3.	The risk of re-establishing transmission in Quetta Bloc			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

In contrast to other former reservoirs like Karachi which have withstood WPV1 emergencies, Quetta Bloc has yet to be challenged in the same way. The programme recognizes this vulnerability, particularly in northern areas such as Chaman and Killa Abdullah where essential immunization remains poor and immunity is decreasing. Underscoring the threat, a WPV1 isolate was detected in an environmental sample collected in Pishin on 4 September 2023; the virus was closely matched to WPV1 detected in Kandahar in May 2023, representing a new importation from southern Afghanistan.

The programme is mitigating this risk through additional immunization rounds, further efforts to strengthen SIA quality, and intensified surveillance. An experienced senior polio official from WHO headquarters has been deployed to Quetta to support programme success. Further developments include a newly appointed chief secretary who has demonstrated the province’s resolve in prioritizing polio eradication activities.

RISK 1.10.	The risk of a loss of momentum to close the immunity gap in eastern Afghanistan			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Eastern Afghanistan has been recovering from two years of disruption in campaigns, but this momentum is susceptible to setbacks due to inaccessibility from heightened conflict and insecurity. In June 2023, campaigns were briefly suspended, though this pause was short-lived in part due to engagement by regional Ministers of Health—a sign of the value of advocacy efforts, such as the Eastern Mediterranean Regional Subcommittee for Polio Eradication and Outbreaks.

Top-level engagement with regional ministers and local leadership, particularly within prioritized communities, remains imperative to ensure the polio eradication programme is insulated from political disruption, and the GPEI will continue to cultivate this engagement.

RISK 1.12.	The risk of cross-border transmission			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Cross-border transmission threatens each endemic country’s capacity to sustain gains, as neither country can achieve WPV1 eradication until they both succeed. Coordination across the epidemiological block includes a range of collaborative actions country programmes are taking to address this risk. Such cross-border coordination has become more effective at both the national and subnational levels, supported by the GPEI Hub in Amman.

At the national level, three face-to-face coordination meetings have been held. Recent steps forward include:

- synchronized national SIAs with increased focus on the joint corridors;
- vaccination at cross-border points;
- monitoring of vaccination and surveillance in the bordering areas;
- enhanced coordination to ensure consistent messaging for social and behavioural change communication; and
- joint risk assessment with national and subnational involvement, including the immediate sharing of information about the detection of new isolates.

At the subnational level, each of the three cross-border corridors conduct regional/provincial-level meetings to address ongoing concerns. Since January 2023, a monthly cross-border coordination call includes representation from the National Emergency Operations Centre, Regional/Provincial Emergency Operations Centres, and the Hub. Additionally, an October 2023 face-to-face meeting of national and subnational staff resulted in strengthened action plans and grassroots coordination.

Lastly, in addition to engaging meaningfully with one another, Afghanistan and Pakistan have collaborated effectively with TAG consultations. A joint follow-up session on TAG recommendations will be held in late 2023.

Focus on Pakistan’s chief secretaries

Recom. action:	“The GPEI leadership should continue to work extremely closely with the Chief Secretaries of the Pakistan provinces and ensure immediate engagement and Polio Programme induction with any change of post-holder.”	GPEI
6		Agrees

Risks within Pakistan’s political landscape present steep challenges to the eradication effort. Illustrative of the severity of these risks, the IMB highlights the number of boycotts within the Khyber Pakhtunkhwa province, where communities leveraged polio vaccination to get the government to meet demands for a range of issues, such as a lack of health care, electricity, or water supply. Pakistan was able to resolve these boycotts through the efforts of provincial chief secretaries. Because of their critical role in resolving boycotts and the amount of time required to achieve a resolution, the IMB goes so far as to suggest that chief secretaries “will define the course of Pakistan’s struggle to eradicate polio.”⁹

The GPEI likewise credits the essential contributions of provincial chief secretaries. Since 2019, the GPEI has maintained a full strategy of subnational engagement in key provinces, and chief secretaries are key contacts in that political environment. Furthermore, all provinces maintain rigorous oversight of polio eradication activities through regular Provincial Task Force meetings prior to each campaign, along with semi-annual meetings of the National Task Force chaired by the Prime Minister. The programme will maintain its engagement with Pakistan leadership and expand outreach to local-level officials, including district commissioners and additional district commissioners who make decisions in the field.

The GPEI is firmly committed to high-level engagement with Pakistan officials. The POB has demonstrated this commitment through numerous delegations to Pakistan in the past few years, including six visits by the POB chair.

⁹ Independent Monitoring Board (IMB). Closing in on zero: Adapting to complexity and risk on the path to end polio; September 2023; 25 (<https://polioeradication.org/wp-content/uploads/2023/09/22nd-Report-of-The-Independent-Monitoring-Board-IMB.pdf>, accessed 20 November 2023).

The chair of the Rotary Foundation’s board of trustees visited Pakistan as recently as September 2023. WHO Director for Polio Eradication and SC Chair Aidan O’Leary met newly appointed Minister of Health Dr. Nadeem Jan during a recent Pakistan visit (August 29–September 1, 2023), visited the National Emergency Operations Centre as well as Provincial Emergency Operations Centres in Lahore and Peshawar, and held high-level meetings with provincial chief ministers and chief secretaries.

RISK 1.1.	The risk of a loss of continuity of political commitment, alignment and security support			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

While the IMB is attentive to risks presented by the turnover of national and provincial leadership, an additional factor worth noting is that deputy commissioners across approximately 164 districts will rotate in the coming months, and the scale of these shifts will be a challenge to manage. The GPEI recognizes the risks posed by changes of government in Pakistan, and the programme has mitigation plans in place. The programme has demonstrated its ability to adapt to rapidly changing circumstances. The GPEI acknowledges the IMB’s security concerns regarding the potential diversion of army and police resources to election duty: while such a diversion is beyond programme control, the GPEI expects that any impact on campaign operations would be short-lived.

RISK 1.8.	The risk of disruptions posed by community boycotts			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Many boycotts are not polio-specific: they either include polio eradication among other longstanding disagreements or they leverage the government’s prioritization of polio eradication in pursuit of unrelated goals.

As highlighted by the IMB, this risk is best mitigated through active engagement with provincial chief secretaries and sustaining engagement with chief secretaries amid any turnover. In addition, strengthened engagement with provincial and local leadership and enhanced community engagement will be necessary parts of the solution.

Order an independent audit in eastern Afghanistan

Recom. action:	"The GPEI should order an immediate independent external audit of the acute flaccid paralysis investigation and data gathering processes in east Afghanistan."	GPEI
7		Agrees

In the case investigation of five polio cases in Afghanistan, parents reported that their children received a high number of oral polio vaccine (OPV) doses, from 16 to 28 doses each. As the IMB conducted its interviews, the possibility that children who were vaccinated to such a degree would nonetheless become paralyzed raised concerns about vaccine effectiveness in cases of severe malnutrition. It was this concern that prompted the IMB to request an audit of acute flaccid paralysis (AFP) surveillance and a serology study (see **Rec. action 8**, below).

The GPEI welcomes an independent audit even as the programme underscores the considerable data supporting vaccine effectiveness in eastern Afghanistan and elsewhere, including under conditions of widespread malnutrition. If malnutrition were contributing to vaccine failure, the programme would see continued infection, disease, and paralysis in young children in Afghanistan. Instead, the ages of the children investigated (from 4–11 years) align with periods of inaccessibility in eastern Afghanistan. Parental recall has its challenges, and it would be difficult to specify with certainty the number of doses received from years before. Notwithstanding these caveats, it remains the case that a full schedule of polio vaccination is more than 95% effective at preventing paralysis from the disease. In extremely rare cases, children who have received all recommended doses of the vaccine may still become infected and suffer polio-related morbidity. Such cases are often related to diarrheal diseases and other intestinal infections present at the time of oral polio vaccination. A fuller scientific study on this phenomenon is being planned in the region.

Conduct a serology study in eastern and southern Afghanistan

Recom. action:	"The GPEI should carry out a serology study in east and south Afghanistan to enable better estimates of polio immunity levels to be made."	GPEI
8		Agrees

Drawing a connection to the previous recommendation, the IMB proposes the GPEI conduct a serology study as a means of assessing the cumulative effect of multiple vaccination rounds on population immunity.

The GPEI welcomes all data that might shed light on progress toward strategic goals. While the programme's immediate priority is on intensifying efforts to reach all children with vaccines, serology studies are valuable tools,

particularly when assessing the longer-term resilience of endemic countries as they advance toward interruption and plan to transition from GPEI support. When a study moves forward, however, it will be important to bear in mind the lessons from a serology study in southern Khyber Pakhtunkhwa province of Pakistan. The study found implausible results (in excess of 90% seropositive) for the simple reason that the children accessible to researchers came from the same population accessible to vaccinators. Similarly for Afghanistan, serology data will likely come exclusively from highly accessible populations given that a blood draw is more intrusive than an OPV drop. Consequently, the challenge is that such a study will miss the same children that are missed in vaccination campaigns.

Support the transition of leadership in the Eastern Mediterranean Region

Recom. action:	"The new Regional Director of the WHO Eastern Mediterranean Regional Office (EMRO), when elected, should give immediate priority to convening the Regional Subcommittee for Polio Eradication and Outbreaks."	GPEI
9		Agrees

Noting the enormously influential role of the Regional Subcommittee under the leadership of EMRO Regional Director Dr. Ahmed Al-Mandhari, whose appointment ends January 2024, the IMB seeks continuity in the Subcommittee's work to ensure collective ownership of the eradication mission in the endemic countries.



"I assure you that I will be committed to continue the efforts to eradicate polio within my first term."

Dr. Hanan Balkhy
in her acceptance speech

In an October session of the EMRO Regional Committee, Member States voted to nominate Dr. Hanan Balkhy as the next Regional Director. A Saudi national, Dr. Balkhy is a leading expert in infection prevention and control who has provided critical guidance on to the WHO Regional Office for the Eastern Mediterranean and WHO headquarters. In her acceptance speech, she affirmed a "hands-on" commitment to achieving polio eradication within her first term. Following review by the WHO Executive Board at its 154th session in early 2024, Dr. Balkhy will begin her five-year term on 1 February 2024. The chair of the POB and the co-chairs of the Regional Subcommittee will engage Dr. Balkhy on the Subcommittee's work, and the WHO Director-General and other POB members will conduct further discussions. Dr. Al-Mandhari will also brief Dr. Balkhy on polio eradication, the Subcommittee and its priorities.

RISK 1.7.	The risk of weakened cohesiveness of the Eastern Mediterranean Regional Subcommittee on Polio Eradication and Outbreaks after the retirement of the current WHO Regional Director		
	Inherent risk:	MEDIUM	Residual risk: LOW

The GPEI shares the IMB’s recognition of the important work of the Regional Subcommittee. While the leadership transition represents a change, it also presents an opportunity for POB engagement. In the GPEI’s view, continuity is likely, particularly as Member States appear firm in their commitment.

Dr. Al-Mandhari’s contributions of leadership

The GPEI joins the IMB in recognizing the defining role of Dr. Al-Mandhari in the Eastern Mediterranean Region. When the Regional Office first organized the Regional Subcommittee for Polio Eradication and Outbreaks in October 2020, the programme was recovering from a four-month pause in vaccination activities due to the COVID-19 pandemic, and Afghanistan and Pakistan were facing co-circulation of cVDPV2 with WPV1. The Regional Subcommittee’s central goal was to reach every last child with polio vaccine by, in the words of its terms of reference, “ensuring any remaining cultural, operational, programmatic, political or societal barriers are overcome.”

With Dr. Al-Mandhari at its helm, the Regional Subcommittee:

- advocated for increased domestic polio eradication investments on the part of member states;drove collaborative public health action; and
- pushed for a regional response to the public health emergency of polio transmission.

Under Dr. Al-Mandhari’s leadership, Ministers of Health joined together in purpose and collective ownership of polio eradication and outbreak response. The programme owes a debt of gratitude to him not only for spearheading this new body, but also for providing a model of leadership that epitomizes what regional advocacy and coordination uniquely contribute to the eradication effort.

Engage southern Afghanistan’s provincial governor

Recom. action:	“There should be immediate discussions with the provincial governor in south Afghanistan to seek his support for delivery of house-to-house campaigns; an invitation to the WHO Eastern Mediterranean Regional Subcommittee on Polio Eradication and Outbreaks may be a key element in these discussions.”	GPEI
12		Agrees

Since mid–2021, an estimated 350 000 children are still inaccessible to the programme as southern Afghanistan remains the only area in the country where the GPEI has been unable to resume H2H immunization. Instead, vaccinators operate through site-to-site and mosque-to-mosque campaign modalities which are suboptimal. An enhanced site-to-site method that prioritizes smaller groups of houses offers some benefits, but this is still no substitute for the gold standard for campaign modalities.

In May and September 2023, environmental surveillance detected WPV1 in Kandahar, raising concerns about the risk of an explosive outbreak. Noting the need for quick action, the IMB highlights the role of the provincial governor, recommending that the programme begin discussions to seek his support for H2H campaigns.

The GPEI recognizes the vulnerability in southern Afghanistan, and engagement with Afghan leadership has been ongoing since mid–2021. Conversations are continuing across all channels, not all of which can be discussed publicly due to the sensitivities involved. The proposal to involve the Regional Subcommittee in advocating on this point may not be politically feasible. Still, the partnership will evaluate any and all potential dialogue opportunities conducive to a future in which no child in Afghanistan or any other country suffers the effects of this disease.

RISK 1.9.	The risk of re-establishment of wild poliovirus circulator in Kandahar		
	Inherent risk:	HIGH	Residual risk:

The GPEI is attentive to the risk of an explosive outbreak in Kandahar. At present, the possibility of any resumption of H2H campaigns in the southern region appears unlikely, and thus mitigation efforts will continue. These include expanding the health camp strategy to 40+ zones in Kandahar city, expanding satellite camps, and coordinating with humanitarian actors to reach more children to deliver integrated health services that include polio vaccines.

Convene a high-level meeting on strengthening Afghanistan’s health system

Recom. action:	“A high-level, widely representative meeting should be convened to agree how Afghanistan can be supported to develop a health system as a legacy of polio eradication.”	GPEI
14		Agrees in principle

Afghanistan is in an acute humanitarian crisis, and its needs for functional health systems are very real. In observing the country’s fragmented and bleak health landscape, the IMB recommends that a meeting be convened to support Afghanistan toward strengthening its health system. This recommended action echoes a consistent theme of the midterm review: that the goals of polio eradication and transition are intertwined and interdependent—and that polio eradication can only be sustained when country ownership and health system capacity can manage the transition from GPEI support.

A widely representative meeting of the kind proposed would be a step toward sustaining health gains from the polio eradication programme into the transition period and beyond, but this is ultimately not a decision for the GPEI to make. Like all polio-affected countries, Afghanistan’s future will depend on its willingness and ability to resolve its health problems and strengthen its health systems. Any such effort could be regionally supported, potentially with the involvement of the Regional Subcommittee. The programme could participate by identifying possible partners. If members of the GPEI partnership elected to participate, they would do so as independent agencies, not as representatives of the GPEI.

RISK 1.11.	The risk of a lack of funding preventing Afghanistan from sustaining gains in interrupting wild poliovirus transmission			
	Inherent risk:	HIGH	Residual risk:	HIGH

A resilient, polio-free Afghanistan will require external funding to strengthen essential immunization and develop a comprehensive primary health care system. This fundamental circumstance is undeniable. Also undeniable are the geopolitical constraints the country faces when it comes to soliciting support from international donors. While a thoroughgoing solution in this area exceeds the mandate of the polio eradication programme, the programme will review a primary health care development roadmap (currently under development by the Afghan Ministry of Health) once it is available.

Additional risks

RISK 1.4.	The risk of solely incremental, instead of transformative, improvements in access and programme performance in south Khyber Pakhtunkhwa			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

The intensifying low-level insurgency in southern Khyber Pakhtunkhwa creates security constraints that the programme does not have the ability to resolve. The GPEI continues to advocate with the federal Minister of Health for more support. While improvements in access are dependent on political actions at the national and local levels, improved programme performance is within the GPEI's control. Evidence of progress includes the "Reaching the Unreached" strategy, which has been implemented in the province's 69 highest-risk union councils and has led to the vaccination of approximately 160 000 more children as of June 2023. In September 2023, the federal Minister of Health commissioned an appraisal mission to assess the southern Khyber Pakhtunkhwa programme. A plan is now underway to convert the findings into action items that focus on a transformation of the operating environment that will include worker motivation, community engagement, and closer integration with security support. As part of that effort, synergy between Pakistan's polio eradication programme and the Expanded Programme on Immunization (EPI) will improve coverage for both essential immunization and oral polio vaccines.

RISK 1.5.	The risk of a lack of critical mass of integrated methods of Polio Programme delivery			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Integration is not limited to co-delivery of antigens but can and should extend to other areas of consequence for public health, including integration with humanitarian partners. In its review of integration efforts in the endemic countries, the IMB mentions a UNICEF-backed initiative in southern Khyber Pakhtunkhwa focused on maternal health, nutrition, and water, sanitation, and hygiene; a separate integrated effort in Karachi to boost essential immunization; and integrated nutrition interventions in Sindh. In fact, there are more efforts underway than those listed. As discussed below (see **Rec. action 15**), the programme is now building out its integration function, and a plan for this work received POB endorsement in October 2023.

Collaboration with humanitarian groups on integrated delivery

Ongoing collaboration with humanitarian groups in Afghanistan demonstrates the value of integrating polio eradication with other health needs. Enlisting 10 international organizations in an effort focused primarily on the southern region, the collaboration identified high-risk polio districts with active humanitarian partners, mapped areas that lack basic health service delivery, and collected data on nine polio-specific indicators as partners delivered OPV doses to children.

In 2023, humanitarian partners have vaccinated 944 736 children across nine provinces, including 28 153 children missed by the polio eradication programme.

Given this success, the TAG recommended that the programme continue to identify opportunities to leverage platforms with humanitarian partners to increase polio and essential immunization coverage in underserved areas.

RISK 1.6.	The risk of the continuation of poor sanitary conditions in polio-endemic areas and fhoxd places vulnerable to re-established transmission		
	Inherent risk:	not included	Residual risk:

The GPEI agrees with the IMB’s view that access to safe water, sanitation, and hygiene (WASH) is essential for human health and well-being and that WASH initiatives are critical to public health. The partnership has made investments to this end in Pakistan that have reached over 600 000 people with improved water, over 800 000 with improved hygiene, and 300 000 with better sanitation. Larger-scale WASH undertakings exceed the combined resources of the programme—a fact highlighted by the US\$ 442 million World Bank investment in a WASH project in the Punjab province of Pakistan benefiting scarcely more than 6 million residents. GPEI parnters will continue to advocate within their agencies and across the global development sector to prioritize long-term WASH investments for communities in polio-affected countries.

Goal Two

Current state

The burden of outbreaks of cVDPV2 is in decline, whether measured as the number of transmission chains, cases, or districts with evidence of circulation (Figs. 2 and 3, Annex C). Indicative of this trend, cases are increasingly geographically concentrated. This progress comes despite challenges related to a temporary supply disruption of an important new tool—the nOPV2—developed to reduce the frequency of vaccine-derived poliovirus (VDPV) emergences in low-immunity settings. Among the positive developments:

- decreasing numbers of new and unique cVDPV2 emergences year over year since 2019;
- nearly 750 million nOPV2 doses have now been administered; and
- most cVDPV2 outbreaks can be stopped after two high quality nOPV2 campaigns.

Fig. 2. Emergences of cVDPV2, 2016–2023

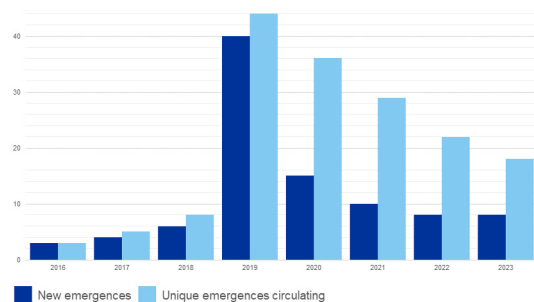
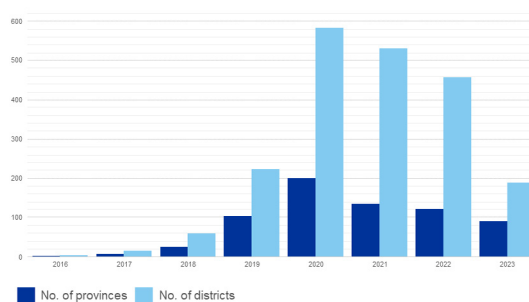


Fig. 3. Provinces and districts with cVDPV2, 2016–2023



cVDPV2= circulating vaccine-derived poliovirus type 2

Source: WHO.

Data as of 10 October 2023

In the wake of the pause in campaigns in 2020 due to COVID-19 that led to a dramatic rise in cVDPV2 cases, these developments are significant even if insufficient to meet the 2023 interruption milestone. Operational improvements are evident, such as a major increase in campaign size from 2021 (target populations tripled from 2019), giving campaigns the necessary reach to contain sprawling outbreaks. Better, faster responses are nonetheless still needed.

The GPEI has operationalized an adjustment to address risks faced by the most consequential geographies where complex operating environments and high rates of zero-dose children have resulted in intractable outbreaks and international spread (Table 4). While new cVDPV2 cases and emergences are declining, ongoing inaccessibility and security risks fuel transmission in these geographies.

Country	Area	Issues
Nigeria	Four northwestern states: Katsina, Kebbi, Sokoto, Zamfara	Insurgency, banditry, and kidnapping attacks
Democratic Republic of the Congo	Three eastern provinces: Haut-Lomami, Maniema, Tanganyika	Insecurity, armed conflict, and large internally displaced populations
Somalia	South-central region	Insecurity, inaccessibility and humanitarian emergency driven by drought and famine
Yemen	Northern governates	Anti-vaccine sentiment among leadership

While Goal Two of the strategy was largely focused on cVDPV2 outbreaks, two major developments since 2022 have required the programme to adapt quickly: (1) the importation of wild poliovirus type 1 (WPV1) in the southeast Africa region, with the final outbreak set to close by the end of 2023, and (2) outbreaks of cVDPV1 that emerged in the African Region due to immunity gaps from weakened essential immunization programmes and the deprioritization of preventive campaigns with the bivalent oral polio vaccine (bOPV). Prioritizing these two developments after the launch of the strategy impacted progress toward cVDPV2 interruption by diverting US\$ 271 million of the budget for cVDPV2 outbreak response to quickly stamp out WPV1 importations and cVDPV1 outbreaks.

In view of these and other challenges, the IMB concludes that the Goal Two milestone for cVDPV2 interruption will be missed. Given the intensified outbreak response that is underway in 2023 and will be maintained in 2024 and 2025, the GPEI anticipates a 2025 target for cVDPV2 interruption. The GCCof the Eradication of Poliomyelitis is currently evaluating certification requirements for VDPVs. Based on these criteria, a revised timeline, plan and budget will be submitted to the POB in the second quarter of 2024. See Annex B on forthcoming POB decisions.

Recommended actions

Carry out a budgetary review

Recom. action:	“There should be an immediate, widely consultative review of the budgetary situation that is leading to prioritisation decisions that are compromising the prospects for stopping polio in 2024 and jeopardising the likelihood of a smooth journey to a polio-free world.”	GPEI
2		AGREES

The scale of cVDPV2 spread alongside WPV1 importations in the African Region and large cVDPV1 outbreaks in the Democratic Republic of the Congo and Madagascar have collectively required a significant portion of the budget. As a consequence, the GPEI has insufficient funds to meet the budget ask, which has led to a difficult prioritization—specifically, the choice to prioritize active outbreak response over preventive campaigns. The IMB raises concerns about this budgetary situation, noting “it is difficult to see how early, successful polio eradication can be achieved with the present resource levels.”¹⁰ They recommend a consultative review of budget.

A widely consultative review takes place as part of the GPEI’s normal budgeting process. To address the IMB’s core concern, the GPEI is attentive to the increased financial resources required by outbreak response and the corresponding tradeoffs this entails. Funding for preventive campaigns in high-risk areas remains a challenge given the need for larger outbreak response campaigns. If resumed, preventive campaigns would only address type 1 and type 3 immunity, as cVDPV2 response campaigns must take the form of outbreak response under the terms of the Emergency Use Listing for nOPV2. In the year ahead, the programme anticipates a still more aggressive approach that draws upon context-driven strategies to deliver bigger, better, and faster outbreak responses.

RISK 2.3.	The risk of insufficient resources necessitating unsatisfactory prioritisation decisions			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

The programme has costed out the scale of outbreak response necessary to speed up the trajectory to cVDPV interruption. At present, this leaves a US\$ 200 million shortfall in 2024. Additional guidance on managing this shortfall will come through GPEI budget discussions to be held before the end of 2023.

¹⁰ Independent Monitoring Board (IMB). Closing in on zero: Adapting to complexity and risk on the path to end polio; September 2023; 100 (<https://polioeradication.org/wp-content/uploads/2023/09/22nd-Report-of-The-Independent-Monitoring-Board-IMB.pdf>, accessed 20 November 2023).

There are three possible mitigating actions to manage the risk of insufficient resources: additional fundraising; better alignment on financial resource requirements (FRR) and non-FRR resources; or hard prioritization. The most likely outcome is some combination of the three. Donor contributions to polio eradication outside the GPEI budget (i.e., non-FRR funding), approaching US\$ 400 million annually in recent years, have at times been a source of surge financing for cVDPV2 outbreak response and could be leveraged to support progress. Absent the required funding, it would be necessary to address active outbreaks as a first priority over preventive immunity-boosting activities. Limited progress against outbreaks next year would ultimately prove more costly in financial terms, in numbers of paralyzed children, and in progress toward eradication.

Extinguish cVDPV1 in Africa

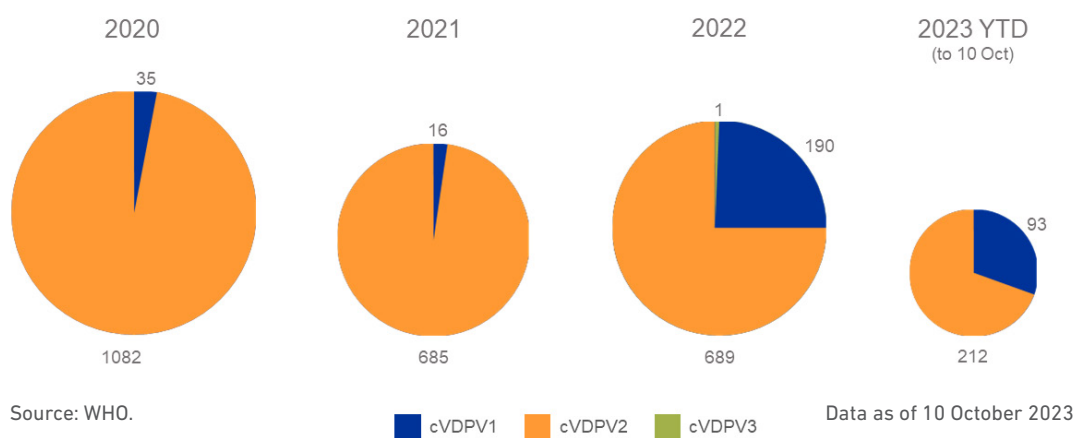
Recom. action:	“High priority and intensive polio programmatic activity should be concentrated on extinguishing all type 1 vaccine-derived poliovirus in the African Region.”	GPEI
3		AGREES

Outbreaks of cVDPV1 have gained in prevalence due to immunity gaps from decreased essential immunization coverage after the COVID-19 pandemic, particularly in subnational areas with already low coverage, and the suspension of preventive campaigns. The midterm review raises concern given the strain’s high transmissibility and higher morbidity than cVDPV2. In the IMB’s view, languishing type 1 immunity could spell disaster, as the establishment of cVDPV1 transmission in Nigeria or the Lake Chad Basin area would become a showstopper for Goal Two and possibly destabilize the programme in its entirety.

While Goal Two deals largely with cVDPV2, the GPEI exists to deliver upon the promise of a world in which no child is paralyzed from polio, regardless of which poliovirus is involved. The programme has incorporated cVDPV1-related activities into cVDPV2 outbreak response—an activity which has borne fruit. In 2021, cVDPV1 cases declined before an explosive outbreak in 2022. Following major response activities for type 1 in 2022 and 2023 which took up 37 percent of the outbreak budget, cVDPV1 case counts have been brought down significantly (**Fig. 4**).

cVDPV1 responses in the Democratic Republic of the Congo and Madagascar—the only two countries currently impacted by cVDPV1—are a key part of 2023 and 2024 outbreak response plans. Furthermore, as any cVDPV1 outbreak requires immediate action, the GPEI anticipates a full-scale response similar to its response to WPV1 importation in the African Region. The programme will respond quickly and aggressively to any new outbreak, regardless of poliovirus type, and the restructured approach to planning and budgeting outbreak response will support these efforts.

Fig. 4. Total cVDPV cases by type and year, 2020–2023



cVDPV1= circulating vaccine-derived poliovirus type 1; cVDPV2= circulating vaccine-derived poliovirus type 2; cVDPV3= circulating vaccine-derived poliovirus type 3; YTD= year-to-date

WPV1 importations and lessons learned

In February 2022, a WPV1 infection was confirmed in a child living in Malawi. In March 2022, a child in Mozambique experienced onset of paralysis by WPV1 linked to the imported case in Malawi, which resulted in eight other cases. Based on genetic sequencing, this importation was linked to Pakistan, providing further evidence that no country can remain polio-free while the virus circulates anywhere in the world.

The programme coordinated an immediate and effective response in the two affected countries plus Tanzania, Zambia, and Zimbabwe, with a total of 21 rounds of campaigns conducted as of June 2023. The last detected transmission from this outbreak took place in Mozambique in August 2022.

Lessons learned from the outbreak can inform the programme's approach to cVDPV1 outbreaks.

- Fast, well-executed, large-scale responses to type 1 outbreaks can prevent those outbreaks from spreading.
- WPV1 cases in transition countries in the African Region reaffirm the importance of high-performing essential immunization.
- A cVDPV1 outbreak in Malawi and Mozambique that coincided with the WPV1 cases underscores ongoing type 1 immunity gaps in the southern African Region.

RISK 2.5.	The risk of large outbreaks of type 1 vaccine-derived polio		
	Inherent risk:	HIGH	Residual risk:

The GPEI is attentive to the risk large outbreaks of cVDPV1 pose to the programme and remains concerned that low rates of essential immunization and deprioritized preventive bOPV campaigns create type 1 immunity gaps. The programme welcomes initiatives like the Big Catch-Up and the efforts of Gavi, the EPI, and other immunization partners to address these gaps, especially for zero-dose children. Preventive bOPV campaigns can also play a role in highest-risk countries, but programme budget demands (while fully aligned with the 2022–2026 Strategy’s multiyear budget) have exceeded available funding for 2022 and 2023 and may do so again in 2024 (see **Rec. Action 1**, Goal Two). Employing non-FRR funds for this purpose, particularly in the case of integrating bOPV campaigns with measles or other antigens, is one possible mitigating action. The incorporation of cVDPV1 into outbreak response also has shown success, and the GPEI will continue this approach into 2024, emphasizing speed of response for new outbreaks while also expanding campaign breadth and improving quality.

Immediately introduce direct detection technologies

Recom. action:	“The rapid poliovirus detection technology that has been evaluated recently should be immediately introduced into outbreak management across the whole Polio Programme.”	GPEI
4		AGREES IN PRINCIPLE

The programme is currently evaluating two direct detection methods to support surveillance for AFP: direct detection by nanopore sequencing (DDNS) and direct detection with intratypic differentiation (DD-ITD). Both would eliminate the need for virus isolation by cell culture and reduce containment-related risks associated with growing live viruses. Given that direct detection has been reported to enable “a near-real-time approach” to outbreak detection and response, the IMB questions why the GPEI has not introduced them already.

While early indicators are favorable, evaluations of both methods are ongoing, and the scientific process must ultimately determine the effectiveness and pace of rolling out new technologies. DD-ITD is currently under data review with a decision on routine implementation expected in the first half of 2024. DDNS will begin data review in November. To support rollout, the African Region has begun DDNS preparedness activities: a pilot has been underway in the Democratic Republic of the Congo, another is planned in Nigeria, and training was conducted in July for laboratories in Algeria, the Central African Republic, Côte d’Ivoire, and Madagascar, with the objective of at least three additional labs contributing DDNS pilot data this year.

Despite grounds for optimism, evidence to date suggests that timeliness gains from direct detection would likely fall short of a “near-real-time” approach. There is hope that it could reduce the timeline for laboratory processes by 7-14 days.

Efforts to improve the timeliness of response aren’t limited to direct detection. Logistics infrastructure remains a central component in outbreak response timeliness, with sample transport delays a key driver. The VillageReach sample transport project has shown some promise in countries without national laboratory capacity, and the programme is continuing to work on improving logistics on a country-by-country basis. Moreover, assessment and expansion of sequencing capacity is underway, with the potential to address logistics challenges: training and rollout at six new laboratories is currently in progress.

The Global Polio Surveillance Action Plan (GPSAP), which defines surveillance priorities and sets a course for their implementation, is currently under biannual review with the GCC¹¹. The GPEI’s Surveillance Group (SG) developed a revised direct detection timeline at its October meeting and will continue to provide regular updates to the Strategy Committee (SC) on ways to further optimize and improve surveillance.

Reconvene Nigeria’s Presidential Task Force

Recom. action:	“The Presidential Task Force on Polio Eradication in Nigeria should be reconvened.”	GPEI
10		AGREES

As a consequential geography, Nigeria faces severe challenges toward interrupting cVDPV transmission. Insurgency, banditry, and kidnapping attacks in key northwest states have left over 3.9 million children in 31 000 settlements inaccessible to the programme. Additionally, financial instability has brought the country to the brink of crisis, which risks deprioritizing polio eradication amidst competing country priorities. In light of the potential for further setbacks, the midterm review urges the new administration to reconvene the Presidential Task Force on Polio Eradication, Routine Immunization, and Primary Health Care in Nigeria.

In September 2023, the country’s Expert Review Committee for Polio Eradication and Routine Immunization endorsed reactivating the task force. Since the task force also concerns itself with essential immunization and primary health care, the significance of this development extends to integration and the Nigerian health landscape writ large.

¹¹ Global Polio Eradication Initiative (GPEI). Global Polio Surveillance Action Plan 2022–2024. Geneva: World Health Organization; 2022 (<https://polioeradication.org/wp-content/uploads/2022/05/GPSAP-2022-2024-EN.pdf>, accessed 20 November 2023).

Furthermore, the reactivation of the task force aligns with the appointment of Dr. Muhammad Ali Pate as Nigeria’s Minister of Health and Social Welfare. Formerly a member of the IMB, Dr. Pate is an unparalleled champion of health priorities, including polio eradication. His appointment represents a considerable opportunity for Nigeria and the entire GPEI programme.

Organize a high-level summit on strengthening Nigerian primary health care

Recom. action:	“A high-level, politically-engaged, health summit should be convened to seek support for Nigeria for strengthening its primary care (including essential immunisation) system in preparation for the post-certification period.”	GPEI
13		AGREES IN PRINCIPLE

After Nigeria was certified as WPV1-free, a lack of resiliency in the country’s health system ultimately fuelled VDPV outbreaks across the African Region, affecting hundreds of children in at least 19 countries and costing the programme hundreds of millions of dollars. The midterm review connects the scale of Nigeria’s outbreaks and their spread with its weakened health system. It argues that the country’s polio eradication effort overshadowed essential immunization. To address ongoing risks related to Nigeria’s health system, the IMB recommends a high-level summit to strengthen essential immunization and primary health care.

The GPEI welcomes a summit, and developments are underway toward such an event. The programme, however, notes the importance of Nigeria leading this effort and investing in its health system. The reconvened Presidential Task Force will likely be a driver, and Dr. Pate’s involvement will be pivotal. Given Dr. Pate’s history in pushing for polio eradication and essential immunization, the GPEI looks forward to supporting initiatives brought forward under his leadership.

RISK 2.6.	Nigeria eliminating polio again and remaining vulnerable to another slide back because of lack of development of long-standing vision to develop strong, comprehensive primary care		
	Inherent risk:	HIGH	Residual risk:

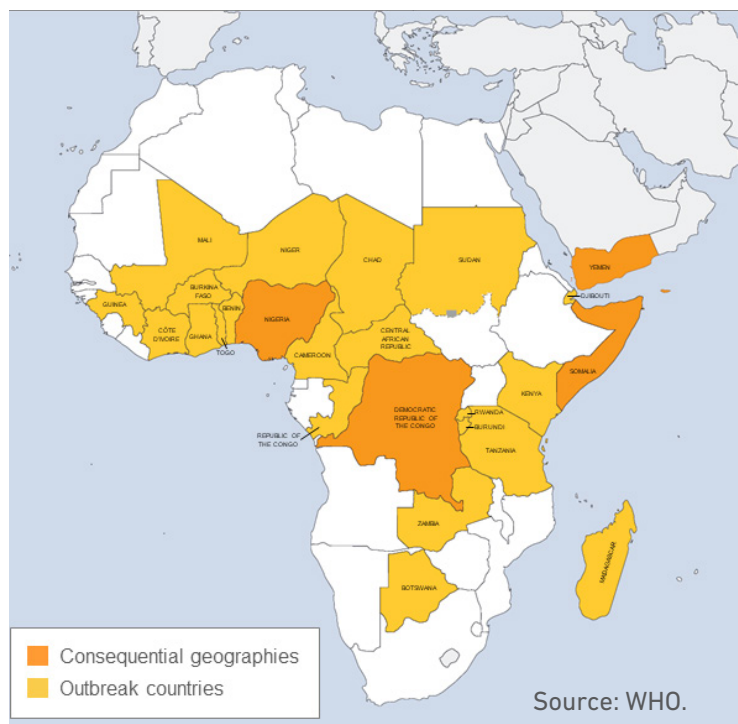
The risks of Nigeria’s health system not sustaining cVDPV interruption are significant, specifically in the northwest where considerable past investments have failed to deliver health gains. The GPEI remains attentive to challenges in this area even while acknowledging that primary responsibility for the country’s health system lies with its government and people. The appointment of Dr. Pate as Minister of Health and the reinstatement of the Presidential Task Force represent new opportunities for health systems strengthening. There is also a push to reactivate the state scorecard for performance and monitoring on polio eradication, essential immunization, and primary health care.

Additional risks

RISK 2.2.	The risk of emergency outbreak response implementation continuing to be weak			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Given that the GPEI anticipates a significantly scaled-up outbreak response in 2024, the programme has restructured planning and budgeting based on the context of the outbreak (**Fig. 5**).

Fig. 5. Consequential geographies and ongoing outbreak countries



- In consequential geographies, the focus will be on tailoring responses to these difficult operating environments, which often involve insecurity and inaccessibility challenges among other factors. To set the programme on a path toward cVDPV interruption, the immediate priority will be to stop cVDPV2 transmission in Nigeria and the Democratic Republic of the Congo in 2024.
- For new outbreaks, response timeliness is key. Funds have been set aside to ensure immediate availability of resources and streamlined internal decision-making.
- Ongoing outbreaks in 20 countries require bigger and better quality responses. By identifying these countries now, the programme will be able to conduct the recruitment of personnel, training, and microplanning that drive campaign quality.

The financial and vaccine resources allocated by the 2024 budget will further enable bigger, better, and faster responses to achieve Goal Two.

RISK 2.4.	The risk of a failure to get vaccine strategy right		
	Inherent risk:	HIGH	Residual risk: LOW

The GPEI recognizes the risks related to securing the right vaccines through, to, and beyond certification. The Outbreak Response & Preparedness Group (ORPG) and the Vaccine Supply Group (VSG) have launched workstreams to improve demand and supply forecasting. Additional efforts to expand the number of OPV suppliers, while important to undertake, face serious obstacles.

The withdrawal of several key polio vaccine manufacturers has created vulnerabilities in supply chains. Suppliers perceive risks in a low-revenue and sunseting market, a situation further complicated by programme financial constraints, changing product requirements, and long lead times across products (6–18 months). The GPEI is working closely with vaccine manufacturers to improve mutual understanding of requirements; aiming through its procurement spend to diversify and expand the supply base in support of healthy vaccine markets; and supporting technology transfers and driving innovations toward products more suitable for a polio-free future.

The programme will work to ensure vaccine security through the development and refinement of mechanisms for effective supply management, e.g. the Global OPV Stockpile Strategy 2022–2026¹², the bOPV stockpile, roadmaps for Gavi-supported vaccine supply, etc. The Polio Vaccine Supply Security Framework is being developed to harmonize objectives and actions across a broad spectrum of functional areas and stakeholders. This includes every facet of the vaccine lifecycle, from research and development and poliovirus containment to production and distribution. Crucially, this framework is designed to span beyond the current eradication strategy, extending into the bOPV cessation as well as post-cessation periods.

A working group has been established to look at policy and supply requirements related to bOPV withdrawal, drawing on experiences from the trivalent oral polio vaccine (tOPV) switch, including immunity boosting campaigns, triggers, and prerequisites for withdrawal, with guidance from the Strategic Advisory Group of Experts on Immunization (SAGE). The bOPV Cessation Team anticipates presenting policy options to the SAGE working group on polio vaccines in February 2024.

¹² Global Polio Eradication Initiative (GPEI). Global OPV Stockpile Strategy 2022–2026. Geneva: World Health Organization; November 2022 (<https://polioeradication.org/wp-content/uploads/2023/06/Global-OPV-Stockpile-Strategy-31052023.pdf>, accessed 20 November 2023).

RISK 2.8.	The risk of a collapse or major disruption of supply of novel oral polio vaccine			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

Temporary nOPV2 supply disruptions in 2023 underscored the risks inherent to a sole supplier for this vaccine. While its projected full-year release of 550 million–600 million doses is expected to meet 2023 programme needs, the GPEI is fortifying the supply base by funding technology transfer to a second manufacturer. Production at the new supplier may start before the end of 2024. The programme considers the 2024 supply outlook stable.

RISK 2.7.	The risk of temporary diminished commitment if 2023 goals are not achieved			
	Inherent risk:	HIGH	Residual risk:	MEDIUM

While the 2023 milestone for cVDPV2 interruption will be missed, it is now more urgent than ever to remain focused, intensify proven approaches, reach every last child with vaccine, and deny the poliovirus the foothold to continue devastating young lives.



There is a complex task ahead for cVDPV interruption, and yet the programme is in a vastly improved position to answer the challenge. The GPEI will aggressively scale up outbreak response in 2024—sustaining that momentum into 2025, if necessary—to accelerate progress. The world is on the verge of celebrating WPV1 interruption, and the programme believes the momentum from this achievement will fuel the collective commitment to eradicate poliovirus in all forms.



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Cross-cutting areas

Recommendations

Prepare polio resilience plans

Recom. action:	“Each polio-affected and polio-vulnerable country in the African and Eastern Mediterranean Regions should be helped to prepare a polio resilience plan, listing and costing what is needed to prevent or respond effectively to polio emergences over the next five years.”	GPEI
11		AGREES IN PRINCIPLE

In the midterm review, the IMB suggests that forward-looking resilience plans are not merely a matter of transition: to the contrary, eradication will fail unless transition is already underway.

The GPEI views resilience planning as an opportunity to support the Regional Offices who have a role in keeping countries engaged on the threat of outbreaks and the need for timely response. This is already common practice in the Eastern Mediterranean Region, where countries systematically and regularly review and update outbreak response plans and carry out simulation exercises for outbreak preparedness. The investment is frequently small, and the return substantial. The process imposes a discipline by which countries stay focused on preparedness. By the same token, the challenges of staff turnover are reduced as simulation exercises acquaint incoming personnel with outbreak risks for cVDPVs and required responses. The African Region is likewise conducting simulations. Seven countries have completed these exercises, including multiple countries that subsequently faced outbreaks. Beyond simulations, detailed response plans are a worthwhile undertaking in countries that have not yet prepared them. Regional-level planning is also warranted given the scale of the risk.

Such planning at the regional and country level also presents an opportunity for the global programme to formalize the framework for vaccine stockpiling and deployment. Stockpiling of the bOPV, type 2 noval oral polio vaccine (nOPV2) and eventually types 1 and 3 novel oral polio vaccines (nOPV1 and nOPV3) will provide the tools for outbreaks. Meanwhile, bOPV, the first and second doses of inactivated polio vaccines (IPV1, IPV2) and the hexavalent vaccine will be administered by essential immunization programmes.

Support integrated immunization campaigns

Recom. action:	“The Polio Programme, the [Expanded] Immunisation Programme and Gavi should open up and act on the many opportunities to run more vaccination initiatives that build in polio.”	GPEI
15		AGREES

Under the 2022–2026 Strategy, expanded integration efforts and unified partnerships are prioritized as strategic objectives. However, integration efforts have not been well coordinated across global, regional, and country teams. Consequently, the midterm review calls for scaled-up co-delivery of antigens, including the co-delivery of bOPV during measles and yellow fever campaigns, for example. The IMB challenges the GPEI to anticipate opportunities for integrated campaigns, with both GPEI and Gavi Alliance partners leveraging their voices to make sure in-country polio eradication teams are at the table when wider campaigns are being planned.

The GPEI broadly agrees and is strengthening its collaboration with the Gavi Alliance, the EPI, as well as other partners involved in health emergency and humanitarian response. An integration function will be established across the country, regional, and global levels, and a plan for this work has been endorsed by the Polio Oversight Board (POB). The effort will require reciprocal engagement from the programme’s counterparts. It also will include articulating the roles and responsibilities of the different actors and providing a more deliberate structure for seizing opportunities of the kind the IMB flags.

Importantly, final accountability lies with countries themselves. The Africa Centres for Disease Control and Prevention is among the partners highlighting the need for a bottom-up approach. Under country leadership, various integrated efforts have been launched.

- The Democratic Republic of the Congo conducted a weeklong integrated campaign for polio and measles in the North Kivu province in May 2023. The country has also set up 7 804 community health care sites in hard-to-reach areas, where community relays will be trained to search for cases of AFP and zero-dose and under-vaccinated children as well as educated on family health practices.
- Malawi conducted an integrated campaign in May 2023 for bOPV, measles-rubella (MR), and typhoid conjugate vaccines (TCV) along with vitamin A supplements.
- In northwest Syria, polio and MR vaccines were given to children under age 5 as part of multiantigen national immunization days in March 2023.
- Somalia conducted an integrated supplementary immunization activity (SIA) in November 2022 to provide polio and measles vaccines plus vitamin A and albendazole (for deworming), reaching about 2.6 million children.

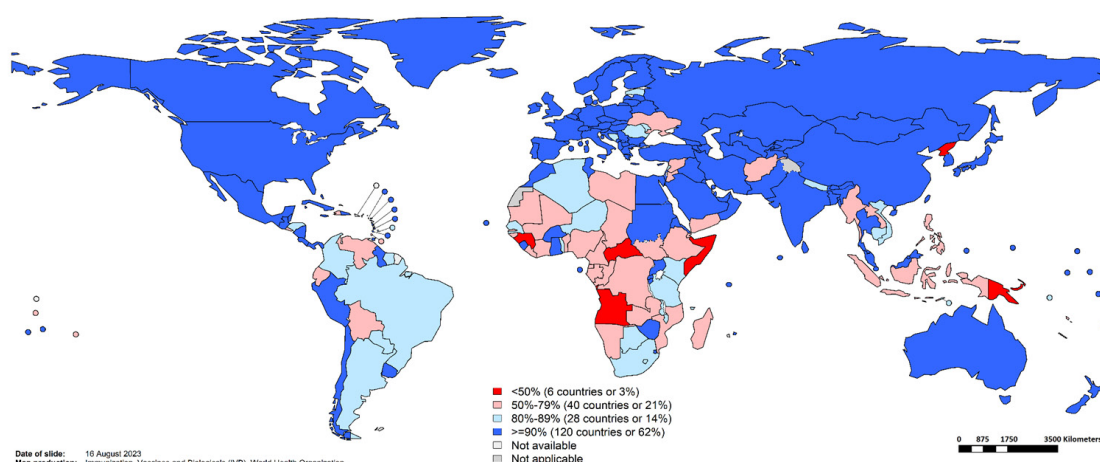
The GPEI will develop an enabling environment for integration that helps to identify and support country-led efforts so they become the norm rather than opportunistic elements of programme operations. In addition, the programme is working with Gavi Secretariat and Alliance partners to explore immediate integration opportunities with countries approved by Gavi’s Independent Review Committee for measles or MR campaigns in 2024—a list that includes Burkina Faso, Chad, Mali, and Tanzania, among others.

RISK 2.1.	The risk of essential immunisation coverage remaining at low levels			
	Inherent risk:	HIGH	Residual risk:	HIGH

Countries must take ownership of essential immunization, albeit with the support of immunization partners, such as EPI and the Gavi Alliance, and platforms such as the Immunization Agenda 2030 (IA2030). Success in this area has clear implications for the polio eradication programme, since essential immunization defends against cVDPVs and impacts the intensity of response required to close outbreaks. While recognizing the constraints of the GPEI’s role, the programme champions country-led immunization efforts and seeks to support and collaborate with them. Still, the latest UNICEF and WHO coverage data confirm that most countries in the African and Eastern Mediterranean Regions have coverage rates stagnating at pre-pandemic levels.

The GPEI welcomes the introduction of Gavi-supported hexavalent vaccine into EPI programmes. Likewise, the GPEI supports the introduction of IPV2 in the remaining 41 countries where it has yet to be introduced. However, for the programme’s aggressive response to immunity gaps that pose a threat to eradication, the main priority must be on improving IPV1 coverage in those countries of the African Region with suboptimal vaccination rates at national and subnational levels (Fig. 6).

Fig. 6. IPV1 immunization coverage in infants, 2022



IPV1= inactivated polio vaccine first dose

Source: WHO.

GPEI-identified risks

RISK 3.1.	The risk of inaccessibility and insecurity			
	Inherent risk:	HIGH	Residual risk:	HIGH

The GPEI suggests inaccessibility and insecurity as an addendum to the risks detailed in the midterm review. These interrelated challenges represent one of the most formidable obstacles to reaching every last child with polio vaccine.

The programme has several workstreams in place to mitigate their consequences, including: negotiating access; pre-positioning funding and vaccines, where feasible; consistently monitoring inaccessible children; working closely with the United Nations Department for Safety and Security; and ensuring staff are prepared to go into the field during those windows when security can be provided. Despite the GPEI’s experience in finding solutions to these challenges, some geographies remain totally or predominantly inaccessible to campaigns at the time of writing.

RISK 3.2.	The risk of suboptimal operational effectiveness			
	Inherent risk:	MEDIUM	Residual risk:	LOW

There is room for improving the operational effectiveness of the partnership at the global, regional, national, and subnational levels. The GPEI will adjust where necessary. Senior leadership of GPEI partners should continue advocating for programme priorities and bolstering support within their respective agencies, with key political and community leaders, and with the donor community. The restructuring of the outbreak budget and planning framework is an operational improvement that will enable a clearer focus on consequential geographies, ongoing outbreaks, and new outbreaks, thereby supporting bigger, faster, and better outbreak responses. The programme will also additionally benefit from greater visibility into non-FRR investments.

Conclusion

The GPEI recognizes serious challenges lie ahead. While the world is not yet in a position to celebrate the interruption of the last remaining strain of wild poliovirus (WPV), the programme believes—and the evidence suggests—that by intensifying proven approaches in the endemic countries, reaching every last child with vaccine, and stopping the last chains of transmission from regaining their footholds, this goal will be achieved within months, placing the world on track to certify eradication of wild poliovirus type 1 (WPV1) by 2026. Meanwhile, the progress to date in addressing outbreaks of cVDPVs needs to be accelerated, something the GPEI will seek to accomplish in 2024 through



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improved outbreak response budgeting and a speed-focused operational framework for any new emergencies. The programme expects certification of WPV1 eradication in 2026 to inspire and energize partners, including national governments, as the world stamps out cVDPVs.

This optimism is underpinned by the work of the IMB and many other counterparts whose deep, critical analyses of the eradication mission and its obstacles have led to the present report. The GPEI is grateful for their diligence, their insight, and their generosity. By looking squarely at challenges and risks and investing in corrective actions, the programme will build on existing momentum, optimize response, improve campaigns, accelerate detection, and ultimately overcome the remaining hurdles to deliver the polio-free world the children of today and tomorrow deserve.

Annexes

Annex A. Summary of risks

Tables A1 and A2 summarize risks identified in the IMB midterm review. Table A3 presents GPEI-identified risks. The GPEI has categorized risks, with inherent risk defined as the severity of the risk in the absence of mitigating actions and residual risk characterized as the ongoing severity of the risk after mitigating actions are applied. (Last updated: 10 October 2023)

Table A1. Summary of Goal One risks

No.	Rec. action	Inherent risk	Residual risk	Description	Notes
1.1	6	High	Medium	Loss of continuity of political commitment and alignment and security support in Pakistan	<ul style="list-style-type: none"> Mitigation plans in place Deputy commissioners being rotated Election-related security gaps should be short-lived
1.2	5	High	Medium	Weakening of newly established re-silience in former polio reservoirs in Pakistan	<ul style="list-style-type: none"> Steps underway to bolster campaigns and essential immunization in historic reservoirs; emphasis on Peshawar
1.3	5	High	Medium	Re-establishment of transmission in Quetta Bloc	<ul style="list-style-type: none"> Extra immunization rounds, renewed attention to SIA quality, and intensified surveillance
1.4	n/a	High	Medium	Solely incremental, instead of transformative, improvements in access and programme performance in southern Khyber Pakhtunkhwa	<ul style="list-style-type: none"> Advocating with federal health minister "Reaching the Unreached" strategy; synergies with EPI
1.5	n/a	High	Medium	The lack of a critical mass of integrated methods of polio programme delivery	<ul style="list-style-type: none"> Programme building out integration function; developing detailed workplan for POB review
1.6	n/a	-	-	The continuation of poor sanitary conditions in polio-endemic areas and those places vulnerable to re-established transmission	<ul style="list-style-type: none"> Large WASH investments exceed programme resources but GPEI continues to advocate w/ development partners on WASH investments in polio-affected countries
1.7	9	Medium	Low	The cohesiveness of the Eastern Mediterranean Regional Subcommittee on Polio Eradication and Outbreaks weakening after the retirement of the current WHO Regional Director	<ul style="list-style-type: none"> Commitment remains firm amongst Member States; October committee meeting; POB to engage with new RD
1.8	6	High	Medium	Disruptions posed by community boycotts in Pakistan	<ul style="list-style-type: none"> Engaging provincial chief secretaries and enhanced community engagement
1.9	12	High	High	Re-establishment of wild poliovirus circulation in Kandahar	<ul style="list-style-type: none"> Lack of H2H campaigns remains most significant challenge; mitigation efforts and diplomacy continue
1.10	5	High	Medium	Loss of momentum to close the immunity gap in east Afghanistan	<ul style="list-style-type: none"> Engaging regional Ministers of Health and Regional Subcommittee
1.11	14	High	High	Lack of funding preventing Afghanistan sustaining gains in interrupting wild poliovirus transmission	<ul style="list-style-type: none"> GPEI agrees, and efforts should be led by regional actors; external funding and PHC critical; programme to review a roadmap currently under development
1.12	5	High	Medium	Cross-border transmission	<ul style="list-style-type: none"> GPEI approaches the area as a single epidemiological block; increasing coordination throughout, including specific SIA schedules in endemic zones, three large outbreak response campaigns targeting 2M+ children, four risk-reduction campaigns in high-risk districts, and SIAs as part of National Immunization Days

EPI= Expanded Programme on Immunization; GPEI= Global Polio Eradication Initiative; H2H= house-to-house (campaign modality); PHC= primary health care; POB= Polio Oversight Board; RD= Regional Director; SIA= supplementary immunization activity; WASH= water, sanitation and hygiene; WHO= World Health Organization

Table A2. Summary of Goal Two risks

No.	Rec. action	Inherent risk	Residual risk	Description	Notes
2.1	15	High	High	Essential immunization coverage remaining at low levels	<ul style="list-style-type: none"> Countries must own essential immunization programmes; EPI, Gavi and IA2030 partners need to support countries to improve EI and reach zero-dose children. Big Catch Up targeting key polio-affected states
2.2	n/a	High	Medium	Implementing emergency outbreak responses continuing to be weak	<ul style="list-style-type: none"> Aggressive scale-up planned in outbreak response
2.3	2	High	Medium	Insufficient resources necessitating unsatisfactory prioritisation decisions	<ul style="list-style-type: none"> Aggressive outbreak response is costed at US\$1.1B for 2024 but the programme currently has US\$0.9B. If new funds cannot be secured, use of non-FRR funds may be a route forward
2.4	n/a	High	Low	Failure to get vaccine strategy right	<ul style="list-style-type: none"> GPEI has anticipated this risk and has acted by developing a vaccine security strategy, establishing a bOPV cessation team, and undertaking a lessons-learned exercise from the 2016 switch Workstreams ongoing to improve demand and supply forecasting; expanding OPV suppliers
2.5	3	High	High	Large outbreaks of type 1 vaccine-derived polio	<ul style="list-style-type: none"> Immunity gaps continue due to poor EI; preventive bOPV rounds may reduce risk but depends on sufficient funding or non-FRR funds being made available GPEI prioritizes active outbreak response above prevention; GPEI will respond to any type 1 outbreak quickly and comprehensively
2.6	13	High	High	Nigeria eliminating polio again and remaining vulnerable to another slide back because of lack of development of long-standing vision to develop strong, comprehensive primary care	<ul style="list-style-type: none"> Dr. Pate appointment and Presidential Task Force represent opportunities; also a push to establish statewide scorecard for performance and monitoring on polio, EI, and PHC
2.7	n/a	High	Medium	Temporary diminished commitment if 2023 goals are not achieved	<ul style="list-style-type: none"> Aggressive intensification of outbreak response is a core focus for the programme Robust advocacy planning and donor engagement under development; we must remain focused and intensify efforts
2.8	n/a	High	Medium	Collapse or major disruption of supply of novel oral polio vaccine	<ul style="list-style-type: none"> Projected supply expected to exceed programme needs in 2024, but risk of disruption remains; GPEI is funding tech transfer to a second manufacturer, which may come online in 2024

bOPV= bivalent oral polio vaccine; EI= essential immunization; EPI= Expanded Programme on Immunization, IA2030= Immunization Agenda 2030; non-FRR= non-financial resource (budgetary) requirements; GPEI= Global Polio Eradication Initiative; OPV= oral polio vaccine; PHC= primary health care

Table A3. Summary of additional GPEI-identified risks

No.	Rec. action	Inherent risk	Residual risk	Description	Notes
3.1	15	High	High	Inaccessibility and insecurity	<ul style="list-style-type: none"> The programme has several mitigating workstreams in place, including negotiating access, pre-positioning funding and vaccines where feasible, monitoring inaccessible children, working closely with the U.N. Department for Safety and Security, and ensuring staff are prepared to go into the field when security can be provided The GPEI has a track record of finding a way even in the most difficult circumstances
3.2	n/a	Medium	Low	Operational effectiveness	<ul style="list-style-type: none"> The operational effectiveness of the partnership at global, regional, national, and subnational levels can be improved; the GPEI will adjust where necessary. Senior leadership of GPEI partners need to continue advocating for programme priorities and bolster support within their respective agencies and with key political and community leaders as well as the donor community Given the importance of a scaled-up outbreak response, the outbreak budget and planning frame has been restructured to enable a clearer focus on: consequential geographies, ongoing outbreaks, and new outbreaks. Greater visibility over non-FRR investments, especially in consequential geographies, will also be required

GPEI= Global Polio Eradication Initiative; non-FRR= Financial Resource Requirements

Annex B. Decisions of the Polio Oversight Board

As the GPEI follows through on the recommended actions and risk mitigation activities identified in this report, several forthcoming decisions from the Polio Oversight Board (POB) are expected. As materials reflecting these decisions become available, they will be added below.

These include:

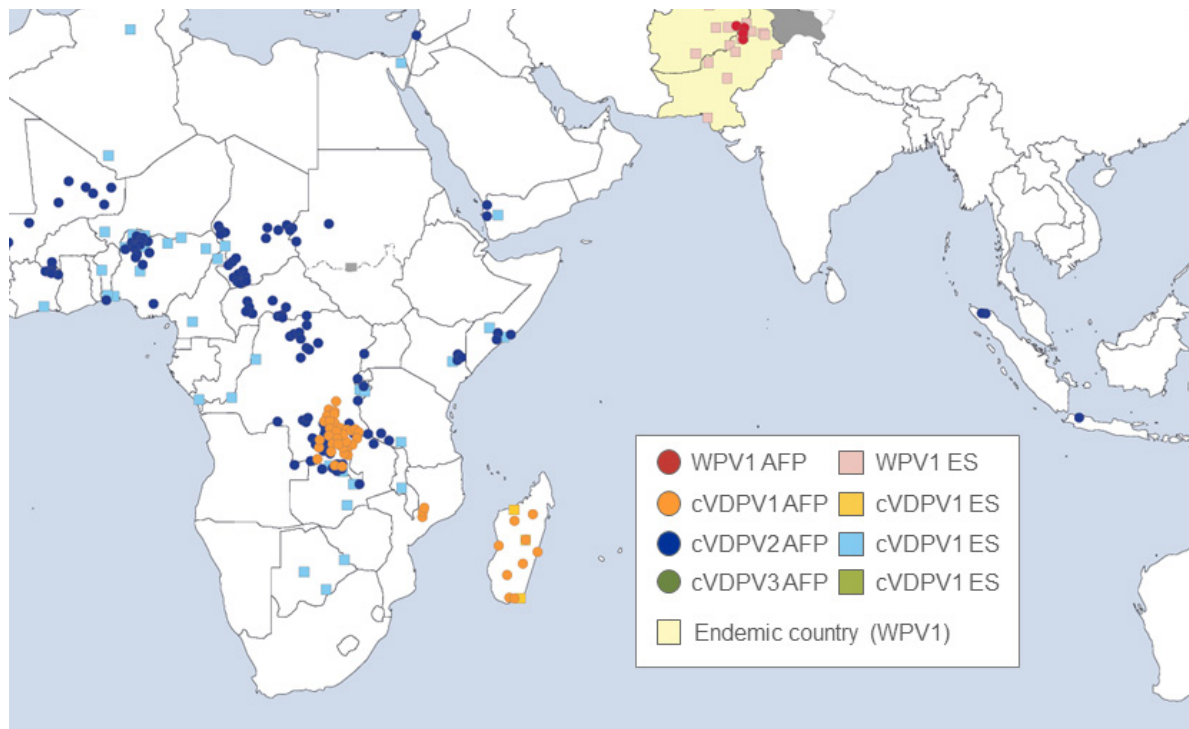
- formal extension of the strategy period;
- renewed strategy milestones, particularly for Goal Two;
- confirmation of new criteria brought forward by the GCC of the Eradication of Poliomyelitis to certify the interruption of cVDPVs; and
- a revised multi-year budget.

(Last updated: 14 November 2023)

Annex C. Current epidemiological state

Global overview

Fig. C1. Overview of global WPV1 and cVDPV positive isolates in 2023



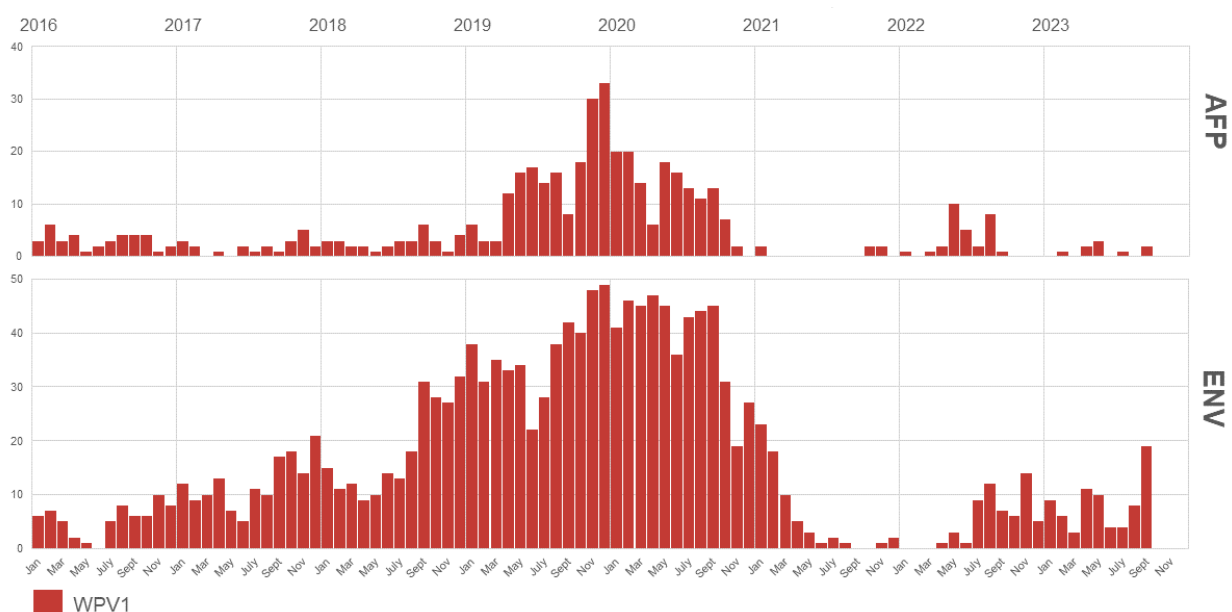
AFP= acute flaccid paralysis; cVDPV= circulating vaccine-derived poliovirus; cVDPV1= circulating vaccine-derived poliovirus type 1; cVDPV2= circulating vaccine-derived poliovirus type 2; cVDPV3= circulating vaccine-derived poliovirus type 3; ES= environmental surveillance; WPV1= wild poliovirus type1

Source: WHO. Data as of 10 October 2023

All data is from WHO POLIS and is up to date as of 10 October 2023.

Goal One: Endemic transmission in Afghanistan and Pakistan, WPV1 importations

Fig. C2. Global WPV1 AFP cases and environmental surveillance isolates, 2016–2023



AFP= acute flaccid paralysis; WPV1= wild poliovirus type 1

Source: WHO

Endemic countries	
Afghanistan	<ul style="list-style-type: none"> • Six WPV1 cases reported this year, all from Nangarhar. • Nangarhar was covered during the recent subnational immunization days (SNIDs) in May and July as part of intensified efforts to interrupt persistent local WPV1 transmission in the area.
Pakistan	<ul style="list-style-type: none"> • Three WPV1 cases reported this year. • Intensified efforts continue to be implemented in the country, particularly in the southern area of Khyber Pakhtunkhwa, to urgently eradicate the remaining endemic WPV1 transmission.
Non-endemic WPV1 importations	
Zero WPV1 cases this year, down from	<ul style="list-style-type: none"> • one case in Malawi with date of onset in November 2021; and • eight cases in Mozambique in 2022.

All data is from WHO POLIS and is up to date as of 10 October 2023.

Post-publication update:

The latest epidemiology for Goal One

The main body of this report reflects the epidemiological context as of 10 October 2023. Since the time of writing, there have been two additional WPV1 cases reported in Sindh province, bringing the total number of cases this year to five in Pakistan and six in Afghanistan. Detection through environmental surveillance found 34 new WPV1-positive samples were reported across Pakistan and Afghanistan, bringing the 2023 total to 108. In Pakistan, the WPV1-positive environmental samples were reported in Balochistan (7), KP (8), Sindh (9), and Punjab (3). In Afghanistan, new WPV1-positive environmental samples were reported in Kabul (1), Kandahar (1), Nangarhar (4), and Zabul (1).

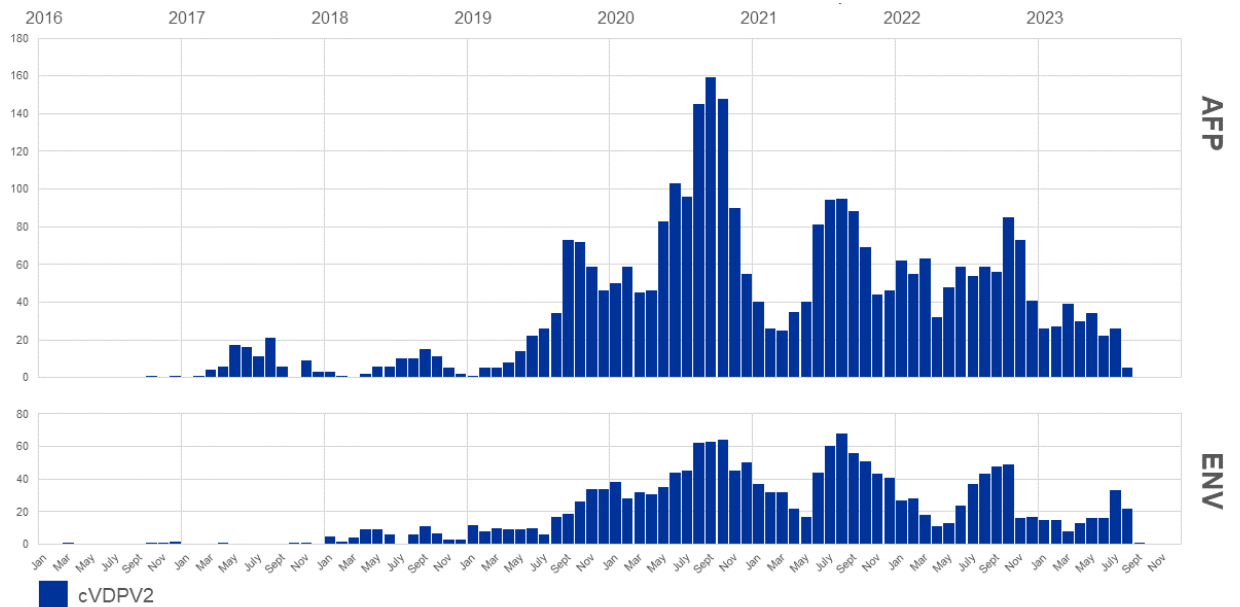
Geopolitical developments

On 3 October, the Government of Pakistan announced plans to repatriate “illegal foreigners,” with a deadline of 1 November for affected populations to leave the country. An estimated 1.3 million undocumented Afghans reside in Pakistan. The impact of this mass movement on the polio eradication programme in both countries is yet to be fully determined, but GPEI partners are working closely with the United Nations High Commissioner for Refugees (UNHCR) to provide immunization (e.g. between 5 and 11 November, more than 59 000 returnees were vaccinated with OPV) and disease surveillance, as well as broader health emergency support.

Situation as of 14 November 2023

Goal Two: cVDPV outbreaks in non-endemic countries

Fig. C3. Global cVDPV2 AFP cases and environmental surveillance isolates, 2016–2023

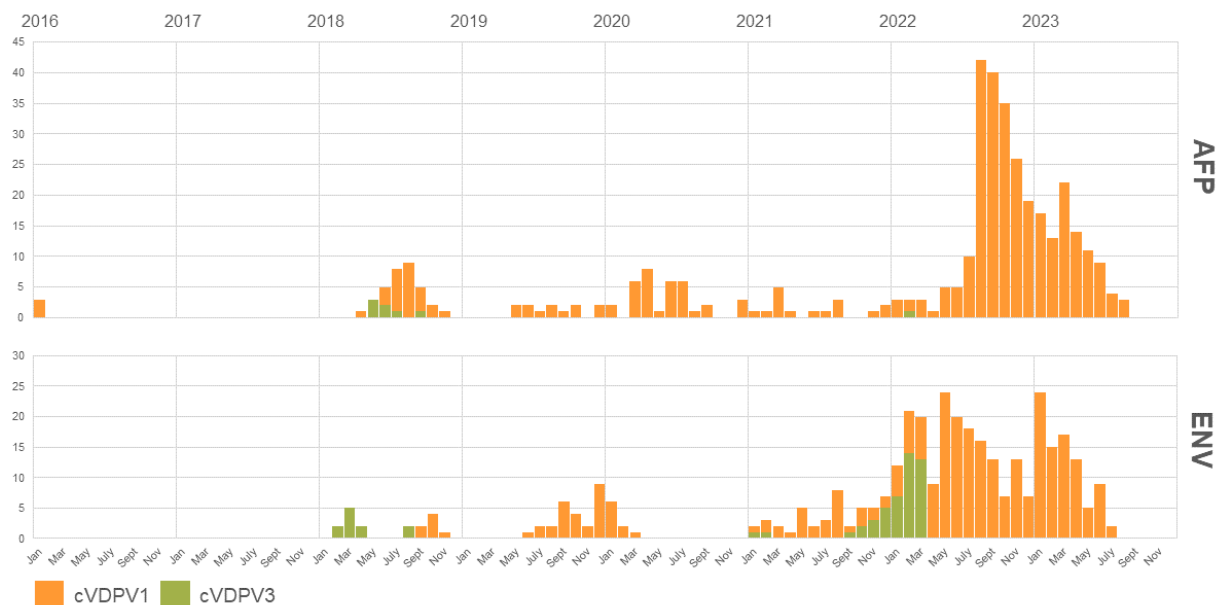


AFP= acute flaccid paralysis; cVDPV2= circulating vaccine-derived poliovirus type 2
Source: WHO

cVDPV 2 - 2023 update

- To date, there have been 211 cVDPV2 cases.
- The number of AFP cases since 2020 is consistently down.
- Since January 2022, cVDPV2 cases in Democratic Republic of the Congo, Nigeria, Yemen and Somalia have accounted for over 70% of global cases.
- The number of cVDPV2-infected districts is declining year-over-year.

Fig. C4. Global cVDPV1 and cVDPV3 AFP cases and environmental surveillance isolates, 2016–2023



AFP= acute flaccid paralysis; cVDPV2= circulating vaccine-derived poliovirus type 2
 Source: WHO. All data is from WHO POLIS and is up to date as of 10 October 2023

cVDPV 1 - 2023 update

- Since 2016, 14 cVDPV1 outbreaks have been reported across 10 countries.
- In 2023, 92 cVDPV1 cases have been reported across three countries: Democratic Republic of the Congo, Madagascar and Mozambique.
- In countries experiencing cVDPV1 outbreaks, poor coverage of bOPV and IPV from essential immunization and the deprioritization of preventive bOPV campaigns have negatively affected population immunity.

Post-publication update: The latest epidemiology

The main body of this report reflects the epidemiological context as of 10 October 2023. Since the time of writing, there have been 16 new cVDPV1 cases, bringing the total for the year to 108. In cVDPV2 outbreaks, 49 new cases have been reported, bringing the 2023 total to 260. Detection through environmental surveillance found 55 additional cVDPV-positive samples, for a year-to-date total of 279.

Situation as of 14 November 2023

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