24

TWENTY-FOURTH REPORT

THE GLASS MOUNTAIN

ONLY **FRESH THINKING** WILL NOW DELIVER A POLIO-FREE WORLD

INDEPENDENT MONITORING BOARD
OF THE GLOBAL POLIO ERADICATION INITIATIVE

SEPTEMBER 2025

INDEPENDENT MONITORING BOARD

The Independent Monitoring Board (IMB) provides an independent assessment of the progress being made by the Global Polio Eradication Initiative (GPEI) in the detection and interruption of poliomyelitis (polio) transmission globally.

MEMBERS

Sir Liam Donaldson (Chair)

Former Chief Medical Officer of England, Professor of Public Health, London School of Hygiene and Tropical Medicine.

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President and CEO of Resolve to Save Lives and former Director, Centers for Disease Control and Prevention, Atlanta, USA.

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Managing Director SAMRC Centre for Health Economics and Decision Science, School of Public Health, University of Witwatersrand, South Africa.

PROCEDURAL NOTE

The IMB was again asked by the GPEI to make its 24th meeting in July 2025 a joint meeting with the Polio Transition Independent Monitoring Board (TIMB). This report deals only with the IMB's monitoring responsibilities. The TIMB will be producing its own report.

To avoid the cumbersome terminology of calling the July 2025 meeting "the IMB/TIMB meeting," it is simply referred to in this report as "the IMB meeting" for consistency with the scope and subject matter of the report.

The IMB meeting itself comprised over 30 hours of detailed discussions with many valuable points and insights about the Polio Programme made by almost 100 people. In addition, through the year before the meeting, the IMB's chairman and its small secretariat have held numerous discussions with individuals and groups who are involved in planning, delivering and funding the programme as well as those who closely follow its progress. In synthesising this volume of inputs to its work, the IMB will sometimes inevitably make small factual errors. The IMB is always happy to correct the online version of its report if these are drawn to its attention.

The IMB's reports are entirely independent. No drafts are shared with the Polio Programme prior to finalisation. Although many of the data are derived from the GPEI, the IMB develops its own analyses and presentations.

It is always the case, in any year, that there are further polio-related developments after the IMB meeting, but before the IMB report is finalised. These may involve initiatives taken by Polio Programme leaders, having gained new insights at the IMB meeting, or major changes to the operating environment in polio-affected countries, or the emergence of new GPEI policies, or developments in geopolitics or shifts in poliovirus epidemiology. In such areas, the IMB tries to include information on very recent events or changes that, although too late to be discussed with participants at its meeting, have a bearing on the understanding of the current polio context. The year 2025 has been one of major political and financial upheaval arising mainly from policy changes in the United States government. In a situation which is still changing, the full implications of these for polio eradication, securing a polio-free world, country infrastructure and funding, availability of United States technical expertise, as well as the impact on related global health programmes (such as essential immunisation, emergency response and surveillance) are not yet completely clear. The IMB has tried to capture all major post-IMB meeting developments as far as it could before publishing this 24th report.

A DEBT OF HONOUR

The IMB wishes to express its deepest gratitude and respect to three of the Polio Programme's longest serving and influential leaders. They are stepping down from their posts this year, with a distinguished record of service and achievement. Each will be greatly missed right across the Polio Programme and more widely in global health. Our very best wishes go to them for their futures.

Ellyn Ogden, USAID.

Jay Wenger, the Gates Foundation.

Hamid Jafari, the World Health Organization.

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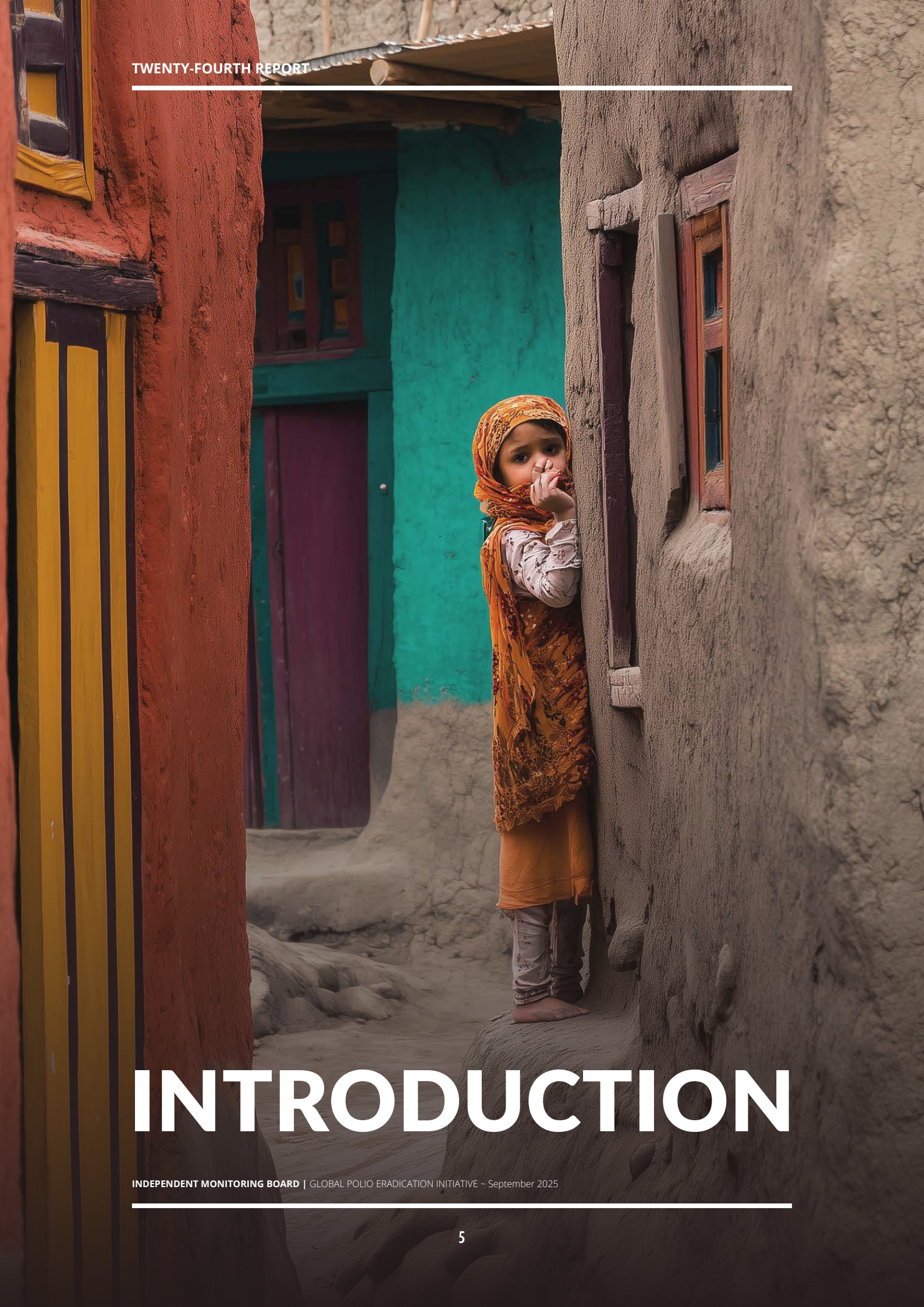

INTRODUCTION

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This is the 24th report of the Independent Monitoring Board (IMB) of the Global Polio Eradication Initiative (GPEI), marking over 14 years of independent scrutiny of the world's most ambitious disease eradication programme. The IMB convenes at a moment unprecedented in the history of global health governance – one that fundamentally alters the conditions within which the programme to eradicate polio must now operate. Some have described it as an "existential threat" to the dream of a polio-free world.

When the IMB published its 22nd report in September 2023, *Closing in on Zero: Adapting to Complexity and Risk on the Path to End Polio*, there was cautious optimism that the final corner to eliminating poliovirus transmission was being turned.

The mid-term review conducted by the IMB, for that report, found encouraging progress in restricting wild poliovirus geographically, yet concluded with stark clarity that both strategic goals of the *Polio Eradication Strategy 2022-2026: Delivering on a Promise* would be missed.

For **Goal One** – the interruption of wild poliovirus transmission globally by the end of 2023 – the IMB judged the programme to be "off track with a very high probability that the goal would be missed".

For **Goal Two** – the interruption of vaccine-derived poliovirus transmission by the same deadline – the IMB found that this poliovirus was "not under control".

The 23rd report, published in September 2024, *The Long Goodbye: Poliovirus Continues to Resist Extinction*, documented the grim validation of these assessments. Neither strategic goal was achieved by the end of 2023, and in the year 2024 there was a disturbing resurgence.

Wild poliovirus cases and positive environmental samples increased from the previous year in both Pakistan and Afghanistan. The historical polio reservoirs in Pakistan that had seemingly been cleared of wild poliovirus at the time of the IMB's mid-term review in 2023 were reinfected during 2024. This was a deeply concerning development casting a shadow over the "almost there," upbeat narrative of late 2023.

The July 2025 IMB meeting convened against a backdrop that could not have been foreseen when the Board first began its work in 2010. On January 20, 2025, through Executive Order 14155, the United States of America announced its withdrawal from the World Health Organization (WHO) for the second time in five years. This action brought about a fundamental rupture in the architecture of global health governance that, inter alia, has underpinned polio eradication work for nearly four decades.

The United States has historically been the WHO's largest donor, providing both assessed contributions based on Gross Domestic Product (GDP) and substantial voluntary funding for specific programmes. The United States withdrawal also eliminates a critical source of technical expertise, with American experts regularly seconded to WHO operations in Geneva and worldwide.

Parallel to the WHO withdrawal, the United States administration dismantled the United States Agency for International Development (USAID). The United States government has provided over $4.8 billion to polio eradication throughout the initiative's history. USAID's technical personnel and project operations were completely closed on July 1, 2025. Over 80% of its programmes were terminated, with remaining functions transferred to the State Department under the banner of "America First" priorities. The United States administration budget proposal for the next fiscal year, starting October 1, 2025, if implemented, would eliminate the US Centers for Disease Control (CDC) budget for polio eradication. A commitment of close to $200 million per year, it supports a wide range of global polio activities. In late August 2025, further turmoil occurred at CDC, with the firing

of its recently appointed director and the resulting resignation of a number of highly experienced and key senior staff. These events call into question CDC's role as a founding, and spearheading, partner of the Global Polio Eradication Initiative. The situation at CDC is still evolving.

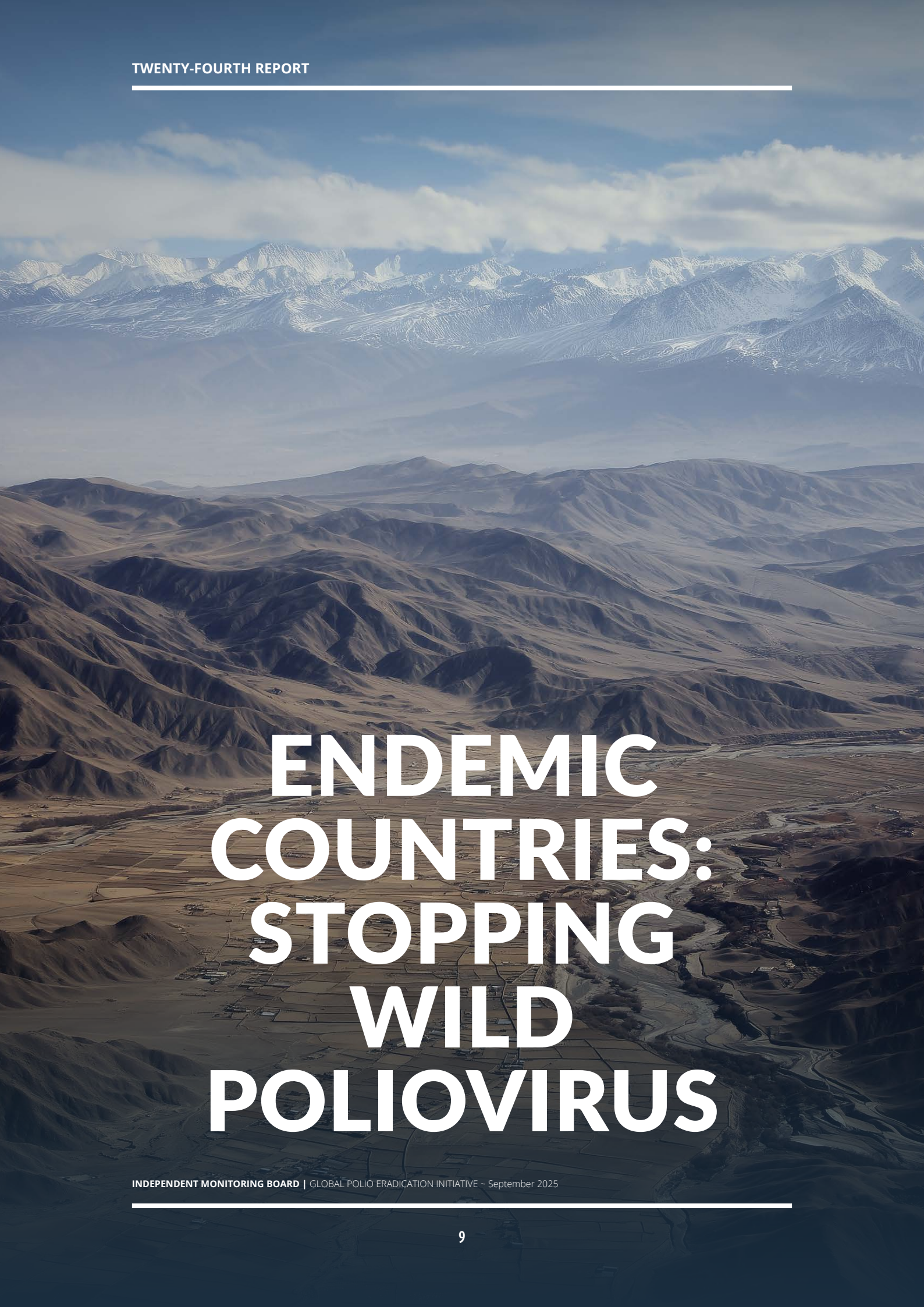
The convergence of these geopolitical shifts and funding cuts with the Polio Programme's existing challenges blows a hurricane-force wind of change through the Global Polio Eradication Initiative. Even before the American retrenchment, the GPEI faced a large funding gap if it were to meet its goal of eradicating polio by the new deadline of 2029.

The epidemiological situation in the first half of 2025 does not provide evidence of transformative change. There was a 13% reduction compared to 2024 (week 32) in polio cases in the endemic countries and a 23% reduction over the same period in vaccine-derived polio cases globally. Widespread transmission, through environmental detections, continues to be documented in Pakistan, control activities have often been slow and ineffectual in Nigeria and other countries with vaccine-derived polio outbreaks. A large outbreak in Yemen has gone unchecked, with access restricted for policy and security reasons.

Since its foundation, the IMB has always addressed the technical aspects of the Polio Programme alongside the geopolitical and the human factors. It is the interplay between these complex areas that determine whether the goals and policies of the Polio Programme can be successfully implemented.

This 24th report of the Board therefore addresses, in a new context, not only the technical and operational challenges that have long plagued the attempts to eradicate polio, but also how the global architecture for disease eradication can survive the seismic shifts in geopolitics that define this moment. The stakes could not be higher – not only for the millions of children at risk of paralysis, or death, but for the credibility of global health governance itself.

"The convergence of these geopolitical shifts and funding cuts blows a hurricane-force wind of change through the Global Polio Eradication Initiative."



ENDEMIC COUNTRIES: STOPPING WILD POLIOVIRUS

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The IMB's last report took stock of progress in July of 2024. This current report is able to look back at performance over the completed year of 2024 as well as two quarters of 2025.

During the period from late 2023 and throughout 2024, all the core poliovirus reservoirs that had apparently been cleared were repopulated and the poliovirus cemented its hold over the Polio Programme by surviving the low season.

As a result, polio cases in 2024 in the two endemic countries greatly exceeded those in the whole of 2023 and numbers of wild poliovirus-positive environmental samples surged.

The epidemiological analysis drives home the scale of this serious setback to polio eradication. Afghanistan reported a 300% increase in wild poliovirus cases between 2023 and 2024, while Pakistan experienced an 1100% surge, resulting in 99 total cases by the end of 2024. Environmental surveillance data mirrors this deterioration, with 741 positive samples detected throughout 2024, demonstrating sustained and expanding viral circulation.

The positive finding of elimination of the YB3C genetic cluster by late 2023 was not consolidated in gains in control of the YB3A. Its persistent circulation since mid-2022 has resulted in evolutionary branching into YB3A4A and YB3A4B variants. The second half of 2024 yielded pronounced expansion of both clusters throughout Pakistan, with YB3A4A achieving predominance in Afghanistan.

The geographic distribution reveals concerning patterns of viral resurgence in historically controlled areas. Transmission has re-established itself in core reservoir zones including Kandahar in Afghanistan and Peshawar, Karachi, and Quetta Block in Pakistan, while south Khyber Pakhtunkhwa and central Pakistan blocs maintained critical ongoing circulation.

A more positive development has been the substantial progress achieved in the northern corridor, extending from Pakistan's Peshawar division into eastern Afghanistan. This region, which had experienced persistent transmission since mid-2022, has demonstrated improvement through sustained programmatic activity cycles.

Environmental surveillance data show some signs of a trajectory toward transmission interruption in this corridor. The overall detection rate declined from 88 in 2023 to 57 in 2024, with the last paralytic case reported in February 2024. Environmental surveillance sites are increasingly showing negative results for wild poliovirus, and acute flaccid paralysis surveillance rates indicate adequate sensitivity.

The southern corridor, spanning southern Afghanistan and Pakistan's Quetta Block, still has extensive transmission. Central Pakistan, where three provinces converge, is another area of concern, alongside south Khyber Pakhtunkhwa (KP), which maintains epidemiological links to the Baluchistan transmission networks.

Cross-border dynamics are having a major influence on transmission patterns, with 22% of Pakistan's 2024 cases and 32% of Afghanistan's cases that same year occurring in border districts. This geographic concentration highlights the familiar but stubbornly persistent geographically interconnected nature of wild poliovirus transmission.

The epidemiological picture for type 1 wild poliovirus in 2025 is a story of some progress from the year before, but this is tempered by the survival of the wild poliovirus in traditional reservoirs.

The Polio Programme rightly looks at the endemic countries as a series of epidemiological "blocs" that connect areas of both Pakistan and Afghanistan

and enable the poliovirus to flow through long-established and predictable channels. Acting on this knowledge and experience is key to stopping poliovirus transmission. So too is the vital importance of cooperation between the polio programmes in the two countries to synchronise their essential activities.

Beyond these epidemiological and technical aspects of polio eradication, the geopolitical and human factors elements operating in the two countries also determine whether there will be success or failure in reaching the Polio Programme's goals. Following the IMB meeting, there were floods covering some major polio-affected areas. It is not yet clear how significant an impact this will have on the Pakistan Polio Programme's progress and prospects.

Events like this are why the IMB has always focused not only on the blocs, but also on the individual countries themselves.

AFGHANISTAN

The IMB conducted a hybrid meeting with Afghanistan's National Emergency Operations Centre (NEOC) Director online while IMB members and relevant GPEI officials were in a meeting room in Geneva. The Afghanistan Health Minister and his polio officials did not travel to Geneva, although all administrative arrangements were in place for them to do so. They did not attend the June 2025 Technical Advisory Group (TAG) meeting either.

The online meeting confirmed the presence of a complex and challenging operational environment marked by political constraints, coordination difficulties, and divergent approaches between Afghanistan's east and south regions.

While Afghanistan has achieved progress, with only two reported type 1 wild poliovirus (WPV1) cases in 2025, significant structural, geopolitical and operational challenges threaten the sustainability of polio eradication.

Programmatic achievements and progress

The Afghanistan National Emergency Operations Centre Director presented an overview of recent achievements, emphasising the programme's successful implementation of seven polio vaccination campaigns since the last IMB meeting, comprising two at national and five at subnational level. The most significant achievement that he highlighted was the reduced number of type 1 wild poliovirus cases in 2025.

He specifically drew the IMB's attention to the achievements in Afghanistan's eastern region, attributing success to strong community engagement, support from local elders, and effective partnership coordination. He emphasised the development and successful implementation of "pull and push strategies" for the polio eradication programme, which have proven effective for quality campaign implementation.

A key operational strength he identified was the establishment of robust coordination mechanisms with local authorities, including provincial and district governors and public health teams. He highlighted monthly task force meetings with local authorities as having "great importance for programme coordination with the government."

Operational challenges and resource constraints

The National Emergency Operations Centre Director also gave his view of the significant challenges facing the Polio Programme. He identified budget cuts as his primary concern, compounded by the substantial influx of returnees from Pakistan and Iran. The Director emphasised that whilst the government works diligently to deliver services across different areas, the massive number of returnees creates management difficulties that require sustained international support, particularly in health services, to prevent widespread poliovirus transmission.

He made a direct appeal for adequate resources from international GPEI partners. His resource concern centred on staffing, with a specific request to recruit Afghan nationals rather than international staff, both for cost-effectiveness and cultural appropriateness.

He gave a detailed analysis of staffing needs against his concerns about the cost-effectiveness of international staff deployment. The Director provided examples of provinces and regions maintaining two to three international staff members, arguing that capable Afghan replacements would better understand the current context and culture, making them more suitable for programme implementation. He made specific mention of international staff costs ranging from $10,000-20,000 monthly, compared to approximately $3,000 for Afghan personnel.

The presentation also highlighted a concerning reduction of approximately 2,000 regional staff working in community engagement and communications.

Infrastructure and technical capacity

The National Emergency Operations Centre Director also raised concerns about the polio laboratory inaugurated in February 2024, which he said remains non-functional despite its establishment. He told the IMB that this delay has created mistrust, and emphasised the urgent need for functionalisation to enable direct detection, genetic sequencing, and poliovirus culture capabilities.

Additionally, he criticised the Polio Legacy Challenge for a lack of practical implementation and absence of tangible outputs. The Director noted that this lack of progress has resulted in diminishing government confidence in the results-based financing initiative, potentially having broader programmatic implications.

Coordination and partnership

The presentation concluded with emphasis on the National Emergency Operations Centre's commitment to coordination and collaboration with all GPEI partners. The Director assured significant progress in the fight against poliovirus, contingent upon strong support from WHO and UNICEF as key partners. He identified coordination gaps with both organisations and requested their enhanced support for the National Emergency Operations Centre and government structures as essential for programme success.

The most challenging questions from the IMB to the Director were on the prospects for improved programme effectiveness in south Afghanistan, particularly regarding house-to-house vaccination and female vaccinator deployment.

The Director acknowledged fundamental contextual differences in the south region, specifically in Kandahar, Helmand, Uruzgan, and Zabul provinces. He stated categorically that female staff deployment would have "negative consequences" rather than positive impact, and that house-to-house modality would be "difficult" due to local opposition to even increased vaccination sites.

When questioned about advocacy for house-to-house modality mentioned in presentation materials, the Director clarified that such approaches were not coordinated with the National Emergency Operations Centre and emphasised that the government would not permit house-to-house modality, making site-to-site vaccination the preferred and most feasible approach.

Political dynamics and operational constraints

Major and complex political dynamics are affecting Polio Programme implementation in Afghanistan. Taken together, they are preventing the country conquering the poliovirus and leaving children in the country and in Pakistan liable to paralysis and death due to an explosive outbreak in Kandahar.

The Polio Programme in the east of the country has managed to maintain a public health focus in its approach. Its success stems from local initiatives, close coordination with provincial authorities, and the ability to maintain detailed tracking systems. Teams are more broadly representative and operate with smaller coverage areas (two to three houses per cluster) and maintain logbooks for systematic follow-up of missed children.

A potential weakness in the east is the relatively low number of environmental monitoring sites (compared to Pakistan) that risk poliovirus transmission being missed.

The western part of the country has seen large numbers of returnees from Iran. Infrastructure has been strengthened there, facilitating all-age vaccinations on the border.

Fundamental and dangerous operational differences from those in the east exist in the south of Afghanistan. These make no sense on public health or humanitarian grounds. In a sinister development, GPEI partners described arrests of vaccination teams by various authorities. The absence of clear leadership messaging in support of vaccination campaigns creates inconsistent responses from authorities across the region.

Most critically, the unrepresentative lack of female vaccinators in areas in the south eliminates the ability to identify and track unvaccinated children. Without access to households, teams cannot determine how many children remain inside homes or develop strategies for reaching them, resulting in coverage estimates of only 70-80% maximum, with potentially 20-30% of children remaining unprotected. Advocacy from local elders and traditional influencers could help narrow this vaccination gap, but the scale of the challenge is considerable.

The Afghanistan authorities receive substantial funding to lead the Polio Programme and the money continues to flow no matter how badly the programme is run. Indeed, to some, polio is viewed as "an economy".

> ***"There is currently no viable plan for zero transmission in south Afghanistan."***

There is a complex power structure in which there are parallel hierarchies. In the south, there is an impasse where the central government functions as a gatekeeper, limiting direct relationships with provincial and regional authorities that historically have enabled programmatic success.

Polio partners working locally are not able currently to replicate the more successful east region programme design in the south. The centralisation of decision-making is very friendly to the poliovirus.

The challenges facing polio eradication reflect broader immunisation system adversity. Essential immunisation partnerships have deteriorated markedly over the past six months, with increasing fear, retaliation concerns, and restrictions on speaking openly about programmatic challenges.

Declining essential immunisation metrics, restrictions on independent monitoring, and staffing and administrative problems are all major concerns. This broader context suggests that polio challenges mirror the difficulties in wider health programmes.

Nevertheless, integration in Afghanistan still offers opportunities for polio eradication. The Big Catch-Up campaign has provided the Polio Programme with 12 million vaccine doses over two years to support comprehensive vaccination, utilising polio site-to-site microplans for essential immunisation outreach sessions.

Although community acceptance of the polio vaccine is reported to be "good," there is a recognition that measles as a "high demand vaccine" may garner even stronger support, potentially providing another entry point for integrated vaccination delivery.

Ultimately, Afghanistan's polio eradication programme is at a critical moment where technical solutions exist but geopolitical constraints and rivalries prevent their implementation. Success will depend on developing innovative approaches that work within existing limitations while gradually expanding operational space for more effective interventions. The overall goal of the global Polio Programme in relation to Afghanistan must remain a house-to-house vaccination programme modality, whilst trying to make progress at local level where feasible. The current programme design poses risks to the Afghanistan population and to children in surrounding countries.

Impact of the Afghanistan earthquake

The magnitude 6.0 earthquake that struck eastern Afghanistan on the night of August 31, 2025, caused catastrophic damage to the health infrastructure serving populations in Afghanistan's eastern region. Early reports described at least 812 confirmed deaths and 2,800 injuries across Kunar and Nangarhar provinces.

The collapse of mudbrick and timber homes characteristic of mountainous terrain has not only displaced hundreds of thousands of people but also disrupted community networks. Road systems connecting remote villages to district centres have been severely damaged, creating access barriers that will persist long after immediate rescue operations conclude. These infrastructure deficits pose particular challenges for maintaining health services to affected populations.

Whilst casualty management, humanitarian disaster response and restoring essential infrastructure are the priorities, giving attention to health facilities, across the affected provinces that have sustained major damage, is also very important.

The earthquake came as the IMB report was being finalised and it is too early to assess the overall impact on the population's health and continuity of essential services, including immunisation.

The geographic scope of the earthquake's impact encompasses areas of critical importance to Afghanistan's polio eradication work. The disruption of population stability and health services in border regions threatens to create new pathways for poliovirus spread while simultaneously compromising vaccination, surveillance and outbreak response capacity.

PAKISTAN

The IMB met in person, in Geneva, with a high-level delegation led by the Minister of State for Health, which included the Prime Minister's focal person on polio eradication, the provincial chief secretaries and the National Emergency Operations Centre Coordinator. The four provincial emergency operations centre coordinators were on the line.

The meeting confirmed Pakistan's renewed commitment to polio eradication while candidly addressing persistent challenges. Despite reporting fewer polio cases in 2025,

compared to 2024, Pakistan faces continued transmission in core reservoirs, particularly south Khyber Pakhtunkhwa (KP), alongside ongoing operational challenges that include missed children, security constraints, and the urgent need for strengthened essential immunisation systems.

The Minister highlighted the whole-government approach now characterising Pakistan's polio work, with engagement spanning from the Prime Minister's office down through chief ministers, chief secretaries, commissioners, and deputy commissioners who personally lead frontline operations. This political commitment transcends party lines and is typified by regular evening review meetings and site visits which address real-time campaign challenges.

Programmatic achievements and progress

The Prime Minister's focal person on polio eradication presented a detailed analysis of Pakistan's polio situation, emphasising the programme's commitment to transparency and frank self-assessment. She acknowledged that while progress had been made, Pakistan had not reached the ambitious targets set for this stage of polio eradication.

Pakistan has successfully conducted six large-scale polio campaigns since September 2024, including three successive national immunisation days in the first half of 2025, consistently reaching 45 million children. Four campaigns were synchronised with Afghanistan, demonstrating improved cross-border coordination.

Systematic quality enhancements were evidenced: lot quality assurance sampling (LQAS) pass rates in May 2025 improved from 2024 rates. The numbers of missed children reduced in security-compromised areas.

Pakistan maintains over 15,000 acute flaccid paralysis (AFP) reporting sites and 127 environmental surveillance sites across 87 districts, supported by a world-class national laboratory. This robust system enables detection of cases even from remote areas like Kharan district in Baluchistan.

The Community-led Vaccination Initiative (COMVI) successfully covered 83% of missed children in previously inaccessible areas of south Khyber Pakhtunkhwa by leveraging relationships with local influencers and reducing the profile of security forces within access operations.

The Polio Programme identified and digitised data for 100,000 zero-dose children across 14 priority districts, with 75% of those identified in April 2025 campaigns being subsequently covered by essential immunisation teams.

The resulting epidemiological picture in Pakistan has been mixed.

By the July 2025 IMB meeting, no paralytic polio cases had been detected since September 2024 from the three traditional core reservoirs, and Peshawar-Khyber. The Quetta Block had shown an encouraging decline in environmental poliovirus detections whilst elsewhere in Punjab and Baluchistan they were declining.

However, major concerns remain. Karachi is experiencing intense viral circulation, Lahore maintains internally-linked detections, central Pakistan has shown frequent poliovirus detections and, most alarmingly, south Khyber Pakhtunkhwa circulation has been escalating. This part of the province reported six out of the seven cases in the most recent quarter of 2025, with over 100,000 children remaining unreached due to access constraints and community boycotts.

QUALITY OF SEQUENTIAL POLIO CAMPAIGNS IN PAKISTAN

Data to 31 May 2025; campaign is worse than predecessor if coverage is lower than the round before it; coverage: number of missed children divided by number of targeted children; n=435,747 campaigns. Trends remain consistent for national immunisation days and subnational days analysed separately. The intention of post campaign evaluation is to identify gaps and make improvements before the next round.

QUALITY OF SEQUENTIAL POLIO CAMPAIGNS IN PAKISTAN PROVINCES

PROVINCE	*Campaigns worse than predecessor (last 10 years)*	*Campaigns worse than predecessor (last 5 years)*	*Campaigns worse than predecessor (last 18 months)*
Baluchistan	*46%*	*47%*	*47%*
Punjab	*44%*	*50%*	*50%*
Sindh	*49%*	*49%*	*52%*
South KP	*47%*	*46%*	*40%*
Rest of KP	*45%*	*45%*	*45%*

Data to 31 May 2025; all campaign types included, campaign is worse than predecessor if coverage is lower than the round before it; coverage: number of missed children divided by number of targeted children; n=435,747. The intention of post campaign evaluation is to identify gaps and make improvements before the next round.

Strategic Framework: 2025-2026 Roadmap

The Pakistan government representatives presented their 2025-2026 Roadmap to the IMB. It has recently been endorsed by the Prime Minister-chaired National Task Force and informed by Technical Advisory Group recommendations. The strategy emphasises:

- **Risk-based targeting:** Implementing high-quality vaccination drives focused on interrupting transmission chains in core reservoirs, bordering districts, and central Pakistan;
- **Extended age vaccination:** Strategic use of 0-15 years fractional inactivated polio vaccine (fIPV) and oral polio vaccine (OPV) in zones with sustained circulation due to malnutrition levels and waning immunity among older children;
- **Integrated interventions:** Complementing vaccination campaigns with targeted integrated service delivery and nutrition, as well as water, sanitation, and hygiene (WASH), and aggressive essential immunisation interventions in access-challenged areas;
- **Enhanced accountability:** Implementing stronger accountability frameworks with independent third-party monitoring, as directed by the Prime Minister following campaign quality assessments;
- **Cross-border coordination and regional dynamics:** Continuing engagement with Afghanistan's Emergency Operations Centre enabling campaign synchronisation, with border vaccination of both incoming and outgoing populations, and information sharing on poliovirus detection and epidemiology.

New analysis casting doubt on current eradication effectiveness

A striking paradox has emerged. Between 2021 and 2023, type 1 wild poliovirus transmission in Pakistan and Afghanistan appeared to nearly disappear, creating what seemed like an unprecedented opportunity for eradication. However, this apparent success was accompanied by the most significant decline in population immunity these countries had experienced in over a decade. The contradiction between reduced transmission and weakened protection may reveal a fundamental misunderstanding of what actually drove the temporary interruption of wild poliovirus spread.

A new analysis was conducted by the two experts (Natalia Molodecky and Roland Sutter) who previously undertook the review of the oral polio vaccine "switch" decision in 2016. They examined data from the polio information system covering the period to May 2025.

Their findings have been shared with the IMB. They challenge the prevailing narrative that programmatic improvements in the polio-endemic countries were responsible for the near-elimination of transmission during this period. Instead, it now seems clear that the COVID-19 pandemic's unintended consequences may have been the primary driver of this temporary success, with profound implications for how current polio eradication strategies are viewed.

The reduction in wild poliovirus transmission between 2021 and 2023 was dramatic. The few remaining chains of transmission became concentrated in just two specific areas: south Khyber Pakhtunkhwa in Pakistan and east Afghanistan. Outside these endemic zones, the wild poliovirus seemed to virtually disappear, leading many to believe that the polio eradication programme had achieved a decisive breakthrough after decades of struggle.

However, this apparent progress occurred against a backdrop of deteriorating immunological protection. Population immunity dropped below 90 per cent in both countries. This decline was the result of multiple factors, including reduced vaccination campaigns due to COVID-19 restrictions, the need to address circulating type 2 vaccine-derived poliovirus outbreaks, and the consequent use of less effective vaccine formulations for type 1 protection.

The simultaneous near-disappearance of both type 1 wild poliovirus and circulating type 2 vaccine-derived poliovirus during this same period provides a crucial clue.

Type 2 immunity fell even more dramatically, dropping below 80%, yet transmission of this strain ceased despite much lower protection levels than had previously been required to control outbreaks.

The most compelling explanation for this paradoxical pattern lies in the comprehensive public health measures implemented during the COVID-19 pandemic. Lockdowns, movement restrictions, enhanced hygiene practices, and social distancing created an environment fundamentally hostile to poliovirus transmission, despite waning population immunity levels. This also highlights the critical importance that improved hygiene interventions should, in any case, have been an essential part of integrated services in polio high-risk areas; this aspect of Polio Programme design has not received sufficient priority in Pakistan.

Movement patterns have always played a critical role in sustaining poliovirus transmission in Pakistan and Afghanistan. The poliovirus has historically exploited well-established corridors of human migration and trade, particularly to and from major urban centres like Karachi, which serves as a distribution hub with high poliovirus export potential across both countries. Similarly, the strong transmission links between Peshawar and Nangarhar, and between Quetta Block and Kandahar,

have traditionally driven cycles of infection that maintain the poliovirus in the population.

When COVID-19 restrictions severely limited these movement patterns, they effectively severed the transmission chains that had kept poliovirus circulating for decades. This explanation is supported by mathematical modelling that demonstrates reduced reproductive rates for poliovirus during the COVID-19 period.

The timing provides additional evidence for this hypothesis. The Polio Programme had achieved its highest levels of type 1 poliovirus immunity in 2019, creating a solid foundation of protection just as COVID-19 restrictions began. This combination of reasonably high baseline immunity and dramatically reduced transmission opportunities created optimal conditions for interrupting viral circulation, at least temporarily.

The temporary nature of this interruption became starkly apparent in 2024 when a surge in cases then followed.

Political outlook and strategic implications

On the political leadership front, the IMB found strong and encouraging high-level political commitment from the Prime Minister through to provincial leadership, with polio eradication established as a national priority alongside the economy and security.

There have been demonstrable quality enhancements evidenced by improved lot quality assurance sampling scores, reduced missed children, and enhanced surveillance sensitivity enabling detection of previously unidentified cases.

However, there are worryingly persistent challenges.

Punjab Province, in particular, exemplifies that the Polio Programme in Pakistan is not yet on the home straight. Despite solid essential immunisation coverage and a past reputation for high resilience, poliovirus continues circulating indigenously in Lahore. This large city remains a major concern, with intense poliovirus circulation proceeding despite the absence of reported cases. Statistical modelling indicates a 50% probability of case emergence from Lahore, reflecting its role as an economic hub which attracts mobile populations from high-risk areas.

In good polio epidemiological times, Punjab has been the least concerning of Pakistan's provinces. Yet, its geographic position creates high vulnerability to poliovirus importation. Situated between northern Pakistan (the source of recent poliovirus reintroduction) and southern regions (including Karachi), Punjab is a transit corridor for extensive population movement. This movement follows established patterns, with families from northern areas maintaining rotating economic relationships with urban centres.

Indeed, all high force-of-infection areas – Karachi, Lahore, and Peshawar – are characterised by ongoing environmental detections despite improved campaign quality. These will require extraordinary consistency of quality and coverage to interrupt transmission.

In particular, Karachi's size and population movement patterns create inherent challenges for achieving universal coverage during standard campaigns. The recognition that 100% coverage during campaigns may be unrealistic necessitates systematic post-campaign interventions, adding complexity and cost to programme implementation.

Baluchistan Province's vulnerability is fundamentally rooted in very low essential immunisation coverage, creating an important immunity gap that provides ideal conditions for rapid poliovirus spread when circulation resumes. This essential immunisation failure reflects broader health system challenges. The province covers 347,000 square kilometres, accounting for 44% of Pakistan's total land area, with a scattered population and poor communication infrastructure. Primary healthcare coverage reaches less than half of the target population, creating large areas where children have limited access to any immunisation services.

Killa Abdullah district remains a particular concern, recording seven cases despite being a relatively small district. Following recognition of the outbreak's severity, Baluchistan implemented comprehensive interventions that demonstrated the potential for programme recovery when appropriate focus and leadership are applied.

The Quetta Block continues to show predominantly positive environmental samples, reflecting the ongoing challenge of poliovirus circulation in the provincial capital and surrounding areas. This persistence reflects both the concentration of population movement and continued immunity gaps in urban areas.

Escalating circulation in south Khyber Pakhtunkhwa with more than 100,000 unreached children represents the most immediate threat to interruption of transmission. Persistent access constraints and accumulated vulnerability,

where so many children remain missed round after round, require intensive new approaches.

The Polio Programme has divided south Khyber Pakhtunkhwa into three categories: green areas (71% of the population, 159 union councils) with good access but quality challenges; COMVI areas (20% of the population, 80 union councils) utilising community-led approaches; and black areas (9% of the population, 26 union councils) requiring intensive engagement to achieve house-to-house access.

Innovations and adaptive strategies

Creative approaches have been undertaken in Pakistan and show promise in addressing stubborn challenges. Initiatives include: community-led vaccination programmes, digital tracking systems, administrative support teams, refusal cluster management, and low-signature security models.

Meaningful advances in essential immunisation–polio integration with framework development, joint planning, and shared resource utilisation are also beginning to yield results.

Improved Pakistan–Afghanistan cooperation through synchronised campaigns, border management, and information sharing is taking place despite complex political relationships.

Security assessments have revealed a more nuanced picture than is often portrayed. Of Pakistan's 45.4 million target children, only approximately 1.2 million face direct security constraints, primarily those in south Khyber Pakhtunkhwa. The military leadership emphasised that traditional high-security approaches often compromise campaign effectiveness; this has led to innovative strategies where community influencers rather than security forces escort vaccination teams.

Over 50% of missed children have resulted from poor campaign quality rather than refusals; this emphasises management and frontline worker support as critical factors. The Polio Programme in Pakistan has acknowledged this challenge, noting that team visits without successful vaccination often reflect inadequate training, poor interpersonal communication

skills, insufficient supervision, or low morale amongst frontline workers operating in high-stress environments.

There is a need for enhanced technical support at provincial levels for real-time decision-making, better data utilisation, and technology integration for immediate programme adjustments.

A systematic digital transformation would be immensely beneficial. Comprehensive digitisation work is already underway, including tracking missed children by name and house, sharing data between essential teams, and real-time monitoring systems for improved accountability and coverage verification. The authorities have developed a national electronic immunisation registry with QR-coded immunisation cards, improved birth registration systems, and bolstered interoperability between health and civil registration systems.

Punjab province plans to recruit 20,000 additional "lady" health workers. Each will cover 500 households and will be equipped with digital tablets for comprehensive health service delivery, including essential immunisation, polio vaccination, and other programmes. However, historical methods, which have also identified basic health services to be co-delivered with polio vaccination, have not been fully implemented.

Major challenges remain in Pakistan. National birth registration rates are just 30%. Plans to raise this to 100% by 2028, whilst ambitious for improving national vital statistics, do not reflect the urgency required to achieve the GPEI's timeline for interrupting poliovirus circulation.

GPEI funding uncertainties threaten the Polio Programme's sustainability and its capacity to maintain eradication-standard operations in Pakistan.

Low essential immunisation coverage persists and there are particularly high levels of zero-dose children in high-risk areas. This continues to undermine population immunity and creates pockets of vulnerability.

Orphan poliovirus detections indicate ongoing transmission chains escaping surveillance, particularly in border areas and hard-to-reach populations. Many such orphan polioviruses originated in the Quetta Block, with potential cross-border circulation complicating epidemiological linkages.

Carefully adapted, differentiated approaches would maintain zone-specific strategies whilst recognising that solutions

effective in areas classified as "green" areas are unlikely to work in the "black" areas of south Khyber Pakhtunkhwa or urban reservoir settings.

Continued emphasis on campaign basics including team training, supervision, and frontline worker support is vital, alongside implementation of technological innovations.

Integration must be truly accelerated. This will mean expediting essential immunisation–polio integration in identified underperforming areas while using upcoming campaigns as integration platforms. Forthcoming measles-rubella vaccination and The Big Catch-Up campaigns represent major opportunities.

In its meeting with the IMB, the Pakistan government team demonstrated a healthy willingness to talk about their polio eradication challenges with unprecedented candour and commitment. Serious obstacles remain, particularly in south Khyber Pakhtunkhwa and the urban reservoirs. Yet, the combination of high-level political support, operational innovations, and more integrated programme design do give some hope for interruption of poliovirus circulation by the end of the next low transmission season. Yet, the Pakistan Polio Programme is still falling below the sustained level of technical excellence required to have any certainty about this optimistic outcome. It is committed to good management and quality improvement, but can only succeed through intensification of the areas of progress and continuous assessment and improvement of programmatic performance.

Impact of recent floods on polio-affected areas

The devastating monsoon floods of mid-2025 have added complexity to the operating environment for Pakistan's Polio Programme. This flooding crisis, which has affected millions across Punjab, Khyber Pakhtunkhwa, Sindh, Gilgit-Baltistan, and other provinces, presents both immediate operational challenges and longer-term implications for poliovirus elimination.

The most immediate impact has been the forced postponement of critical vaccination campaigns. The National Emergency Operations Centre's decision to delay the September vaccination campaigns in flood-affected areas, while operationally necessary, creates immunity gaps that could facilitate viral spread.

The geographic scope of the disruption includes areas where poliovirus has been detected in environmental samples, raising concerns about potential transmission amplification.

The 2025 floods have also inflicted substantial damage on Pakistan's health infrastructure. According to disaster management authorities, health facilities across multiple provinces have been damaged or rendered non-functional, creating service delivery gaps that extend beyond polio vaccination. The destruction of roads, bridges, and communication networks has further complicated access to vulnerable populations, particularly in remote areas where high vaccination coverage was already challenging to achieve.

Also, there has been impairment of cold chain systems essential for vaccine storage and distribution. Historical experience from Pakistan's 2022 floods demonstrated that such disasters can severely compromise immunisation infrastructure. The current floods present similar risks, potentially disrupting vaccine storage and distribution networks at a time when maintaining high-quality campaigns is critical for transmission interruption.

The flooding has created environmental conditions highly conducive to poliovirus transmission and spread. Compromised sanitation systems, contaminated water supplies, and population displacement have established the ideal circumstances for faecal-oral transmission of the poliovirus. The mixing of sewage with flood waters presents particular risks, as environmental

surveillance data consistently shows poliovirus circulation in sewage systems across Pakistan.

The floods threaten to exacerbate this circulation by creating new pathways for viral spread through contaminated water systems and by displacing populations from areas with known viral presence to previously unaffected locations.

Indeed, the displacement of hundreds of thousands of people across flood-affected areas has created massive difficulties for maintaining vaccination coverage and surveillance activities. Displaced populations in relief camps and temporary settlements require targeted vaccination, but reaching these mobile populations with consistent immunisation services is operationally complex.

Experience of previous flooding events in Pakistan shows that displaced populations also have reduced access to routine health services, including immunisation, creating pockets of susceptible children.

The IMB notes with concern that the flooding affects regions that include known poliovirus reservoirs and transmission corridors. The displacement of populations from these areas risks spreading the virus to new geographic locations where immunity levels may be insufficient to prevent sustained transmission.

The flooding presents challenges for maintaining the high-quality acute flaccid paralysis surveillance essential for detecting polio cases and monitoring viral circulation. Displacement of populations, damage to health facilities, and disruption of communication networks can compromise the ability to identify and investigate potential cases promptly. Similarly, environmental surveillance activities may be disrupted by damage to sewage collection systems and laboratory networks.

STOPPING OUTBREAKS OF POLIOVIRUS

INDEPENDENT MONITORING BOARD | GLOBAL POLIO ERADICATION INITIATIVE ~ September 2025

STOPPING OUTBREAKS OF POLIOVIRUS

The Africa region is where the largest number of polio outbreaks (mainly vaccine-derived poliovirus) have occurred. Africa's success or failure in achieving poliovirus elimination objectives carries global implications, particularly given the international spread of poliovirus strains originating in Nigeria. The Polio Programme's ability to interrupt transmission in remaining epicentres and prevent new emergences will determine whether the continent contributes to global eradication or continues to generate international spread risks.

The record of the Africa region's polio eradication programme is a complex catalogue of important achievements alongside persistent challenges that threaten overall success.

The type 1 vaccine-derived poliovirus response in Africa is the Polio Programme's most significant recent success story, with transmission interruption achieved across primary sources of spread. Madagascar has maintained zero detections for five consecutive quarters, showing that the fundamental principles of polio eradication i.e. sustained population immunity over large geographic areas through progressively improving essential immunisation, high-quality campaign implementation and robust surveillance systems, are critical to interrupting viral transmission. Many Polio Programme insiders and external observers view this achievement as reinforcing the need to apply these principles everywhere for definitive outbreak closure through high-quality sustained intervention.

Recent environmental detections of type 1 vaccine-derived poliovirus in Djibouti and Israel are strong reminders of vulnerabilities that persist in places that do not often garner attention.

The detection of type 3 vaccine-derived poliovirus in Guinea, with cases identified along the Guinea-Mali border, represents the first type 3 poliovirus circulation after an extended period without global detection. These outbreaks emphasise the critical importance of maintaining comprehensive surveillance and population immunity even for poliovirus types considered controlled. The Polio Programme's response included co-administration of bivalent oral polio vaccine and novel oral polio vaccine type 2; this is the first implementation of such a combined vaccination approach in the field.

This emergence highlights ongoing vulnerability across the Sahel region, where population immunity to types 1 and 3 poliovirus remains low amid ongoing conflict and the displacement of populations.

THE LANDSCAPE OF TYPE 2 VACCINE-DERIVED POLIOVIRUS IS VERY DIFFERENT

With more than 400 cases of type 2 vaccine-derived poliovirus reported globally in 2024, the highest burden was concentrated in Nigeria (36% of global cases), and it continues to challenge eradication activities across sub-Saharan Africa. The persistence of the Zamfara emergence group, now detected across 26 countries globally (including recently in Israel), highlights the international impact of the failures in the Nigeria Polio Programme.

Novel type 2 oral polio vaccine deployment shows superior genetic stability compared to traditional Sabin vaccines, but the continued emergence of new circulating vaccine-derived strains illustrates the challenges of type 2 poliovirus elimination in low-immunity populations.

The Lake Chad Basin, (particularly Nigeria) is the Africa Polio Programme's most significant challenge. It is a potential failure point for continental elimination objectives. The establishment of a Lake Chad Basin coordination forum aims to enhance regional cooperation through ministerial-level engagement, both virtually and in person. This mechanism, co-chaired by regional directors rather than ministers due to geopolitical complexities, provides a platform for coordinated planning and resource allocation across affected countries.

The Horn of Africa region is also a source of deep concern, with intensifying transmission in Ethiopia amid ongoing humanitarian crises. Challenges include inaccessibility, insecurity and large population movements. All hamper attempts to reach all children consistently. Here, the convergence of two World Health Organization footprints, the Africa and Eastern Mediterranean regions, further complicates coordination. Multi-year inaccessibility for polio and essential immunisation is worse in the Eastern Mediterranean region with northern Yemen and Somalia suffering unresolved conflicts that seriously affect the operating environment for the Polio Programme. In Yemen, there is a large, multiyear, and expanding outbreak.

Substantial progress has been made within the central/southern Africa epidemiological bloc. Case numbers are declining and geographical spread is contained. Detections in 2025 have remained concentrated near the Angola border. This is a substantial improvement from previous transmission intensity.

The Democratic Republic of the Congo appears to have achieved impressive progress. It is possible, though, that surveillance gaps may be obscuring continued infection spread. The regional Polio Programme closely follows ongoing infection status in both the Democratic Republic of the Congo and Angola. There is a need for continued intervention to achieve definitive transmission interruption.

The Africa Polio Programme's strategic approach, established in 2022, prioritised three distinct objectives based on epidemiological assessment and resource constraints.

The primary focus centred on ending wild poliovirus outbreaks, followed by addressing concentrated circulating type 1 vaccine-derived poliovirus transmission in Madagascar and the Democratic Republic

of the Congo. The final aim was to tackle the widespread circulating type 2 vaccine-derived poliovirus outbreaks. Here, the programme put particular emphasis on targeting its activities in the Democratic Republic of the Congo and the Lake Chad Basin countries.

This graduated approach reflected a realistic attitude to shortfalls in resource allocation, vaccine shortages and capacity limitations. Mounting a comprehensive continent-wide response was simply not possible. It exceeded immediate programme capabilities. The Polio Programme deliberately decided to live with an elevated risk of polio in lower-priority geographies whilst concentrating on achievable objectives. This approach was intended to create a foundation for sequential progress across the region. The prioritisation did have the distressing consequence for polio teams that they had to accept that some children in populations under their watch would be paralysed, and some would die.

The regional Polio Programme in Africa has long operated within a complex security environment characterised by ongoing conflicts, population displacement, and humanitarian crises. In particular, eastern Democratic Republic of the Congo has faced an escalating conflict, though a recently negotiated peace resolution creates a more positive outlook.

While the current conflict zones were not primary transmission epicentres before escalation, cross-border population movements into Burundi and Rwanda have created ongoing risks that require coordinated response planning. In the north of the Democratic Republic of the Congo, intercommunal conflicts are an additional challenge. They increase the chances of spread into historical transmission zones around Lake Tanganyika.

Northern Nigeria and southern-central Somalia are zones of persistent transmission. They have proven resistant to conventional polio programmatic interventions. Such areas epitomise the complex interplay of conflict, population movement, and programme access limitations in the most challenging operational environments. They require tailored approaches that tackle the diverse factors that enable viral persistence.

Nigeria's ability to replicate the programmatic performance of the Democratic Republic of the Congo and countries that have successfully closed outbreaks (e.g. Madagascar 2025, Ukraine, 2023, Sudan, 2022) will largely determine whether Africa can be cleared of polio.

NIGERIA

At its July 2025 meeting in Geneva, the IMB discussed the state of Nigeria's polio eradication programme with a national delegation, led by the Executive Director of the National Primary Health Care Development Agency (NPHCDA), and the Incident Manager of the Emergency Operations Centre (EOC). The meeting recognised both progress and persistent challenges in Nigeria's fight against circulating type 2 vaccine-derived poliovirus.

On the polio epidemiological front, geographic spread has expanded beyond historical northwestern focus areas. The viral transmission pattern of expansion from the original Sokoto and Zamfara states concentration to multiple states, including Kano and Katsina, is disturbing, though not a surprise.

The genetic analysis conducted at the WHO sequencing laboratory in Ibadan confirms the international spread of Nigerian strains. Polioviruses originating from Zamfara state have been found in Israeli waste water surveillance. This demonstrates the global reach of Nigeria's domestic transmission chains.

There has been measurable progress in reducing poliovirus transmission, with improvements in both scope and intensity. Year-on-year comparison shows that in 2025 cases, positive environmental isolates, and the number of states affected have all fallen. Retrospective sampling in previously "quiet" areas revealed substantial numbers of orphan viruses, indicating that detection capabilities had improved. The Polio Programme identified 20 orphan viruses in 2025.

Nigeria has already conducted multiple polio vaccination campaigns in 2025, reaching between 10 and 20 states.

There have been gradual improvements in reaching settlements where vaccinations were planned, particularly in security-compromised areas, though substantial proportions remained inaccessible due to either genuine security constraints or inability to deploy verification devices safely. Lot quality assurance sampling consistently achieved approximately 90% pass rates, indicating acceptable but still not optimal campaign quality. Sub-national gaps persist, particularly in southern local government areas where non-polio acute flaccid paralysis rates and surveillance adequacy indicators remained deficient. Persistent difficulties in northeastern Nigeria, particularly in areas affected by insurgency, have continued to limit access for, and validation of, vaccination activities.

The Nigeria polio team told the IMB of a range of major operational failings that they were still confronting.

These included:

- **Fake finger marking:** Comprehensive formative studies revealed that 13% of children were falsely marked during campaigns, indicating vaccination documentation in the absence of vaccine administration. This practice stemmed from various factors, including inadequate training, fear of reporting low coverage, and systemic accountability failures;
- **Data falsification:** Systematic analysis identified team-level infractions including data quality issues, protocol violations, and deliberate misrepresentation of activities;
- **Political interference in team selection:** Traditional patterns of political leaders selecting friends, family members, and community associates as vaccinators rather than qualified individuals has created some teams lacking competence and motivation for effective service delivery;
- **Supervision quality:** Team supervisors are frequently limited in competence and commitment, leading to inadequate oversight and deficient quality control during campaign implementation;
- **Community resistance and non-compliance:** Persistent refusal rates, particularly in large urban centres, continue to impair coverage. Major cities

experience clustered refusal patterns. Non-compliance increasingly involves well-educated individuals and affluent communities, particularly in gated compounds where traditional health worker approaches prove inadequate. Misinformation propagated by global social media networks is implicated in growing vaccine hesitancy.

Nigeria's team reported that they had implemented 64% (nine) of the recommendations in the 23rd IMB report.

Strategic reform initiatives

The work of the Polio Programme in Nigeria is being positioned strategically within the country's broader health system transformation agenda. President Bola Tinubu has prioritised health sector renewal, signing compacts with all 36 governors plus the Federal Capital Territory, on key health priorities, including polio eradication and essential immunisation coverage improvement. This whole-government approach has institutionalised polio as a national priority through several mechanisms:

- **Ad hoc national economic council subcommittee:** A monthly meeting chaired by a northern state governor focused specifically on polio-affected states, with updates provided directly to the Vice President-chaired National Economic Council;
- **Nigerian health sector renewal investment initiative:** Health Minister (and former IMB member) Pate's leadership of this comprehensive initiative demonstrates high-level commitment to health system strengthening, with specific targets for cutting maternal mortality, reducing mortality in children aged under 5 years, and increasing immunisation coverage;
- **Infrastructure investment:** Substantial investments in primary healthcare infrastructure, immunisation cold chain systems, vaccine delivery mechanisms, and healthcare worker training have been implemented across the federation.

The Nigeria delegation told the IMB meeting about "comprehensive operational reform initiatives" aimed at addressing these systemic problems while operating within increasingly constrained resource environments.

Although political leaders retain nomination rights, traditional rulers are now trained to be the final arbiters in vaccinator selection. They provide validation that nominees represent competent community members. Teachers and national youth service corps members (fresh college graduates performing mandatory national service) serve as independent observers outside traditional Polio Programme structures. They provide objective oversight of vaccination activities.

Directly observed house-to-house vaccine administration has been implemented, meaning children are brought out of the house for public vaccination. This enables supervisors to visually verify that vaccination has taken place.

Vaccination teams seek out and report acute flaccid paralysis cases which have occurred amongst the targeted community, bolstering existing surveillance methods.

The IMB was told that there was insufficient supervision "bandwidth" for 18 state campaigns to be conducted simultaneously. They are now staggered into two phases, allowing concentration of the best supervisory personnel for enhanced quality control.

Systematic identification and enumeration of eligible children is happening in priority locations, initially covering worst-performing wards and expanding across six states. This approach has enabled tracking of 78-82% of listed children in subsequent campaigns, providing specific targets, names, and contact information where available.

Analysis of team performance now identifies infractions and enables performance management. Consequences implemented range from contract termination (enacted for one-third of problematic teams) to pay reductions, sanctions and warnings based on infringement severity. Multiple verification mechanisms exist, including independent monitors, traditional leader oversight, and direct observation protocols. These seek to ensure data integrity and actual vaccination delivery.

Vaccine refusals among wealthy communities have been combated through a "Fathers for Good Health" initiative. This recognises the patriarchal decision-making structures that are present in northern Nigeria and utilises elite community members to engage male heads of households. They then become vaccination champions and overcome refusal patterns.

Risk-based geographic targeting

Nigeria has also developed sophisticated risk categorisation and response strategies.

A total of 70,000 settlements was identified containing 5.1 million children across three risk categories: inaccessible due to security constraints, partially accessible, and accessible populations requiring targeted interventions.

A focus on the 11 highest-risk states has required interventions beyond standard national immunisation-plus days or sub-national immunisation-plus days, based on comprehensive risk modelling incorporating multiple epidemiological and operational factors.

Specific approaches have been developed for different population categories including reaching inaccessible children, activities for security-compromised areas, fixed-post outreach for completely inaccessible settlements, and active follow-up for accessible populations with persistently missed children.

Resource constraints and efficiency measures in Nigeria

Multiple concurrent financial pressures are now stressing Nigeria's health sector.

The country is implementing difficult economic reforms including fuel subsidy removal, electricity tariff adjustments, substantial tax reforms, and increasing local government autonomy. This has hit resource distribution across governmental levels.

On top of this, there is reduced international funding for important programmes for AIDS, tuberculosis, malaria, as well as essential immunisation, reproductive and child health, and polio. This will necessitate increased domestic resource mobilisation, improved financial stewardship, and better coordination with Gavi and other disease control programmes.

Vaccine allocation adjustments have been made based on historical consumption patterns. States demonstrating consistent over-utilisation of vaccine, without commensurate improvements in campaign performance, will have their allocation reduced.

Efficiency innovations being introduced include: output-based funding which rewards states for measurable health outcome improvements rather than input-based funding, systematic integration of polio vaccination with nutritional interventions, seasonal malaria chemoprevention, and the maternal and newborn mortality reduction innovation initiative. Recognition programmes have also been implemented to reward the work of high-performing teams.

Zero-dose children targeting and wider integration

Nigeria has implemented comprehensive strategies to address essential immunisation gaps that contribute to polio transmission vulnerability. Around 100 local government areas have been identified, comprising 981 wards with high concentrations of zero-dose children.

Intensive interventions have been focused in these areas, including the deployment of community health workers for house-to-house enumeration and tracking.

Integration with primary healthcare services has long been a central aspiration in Nigeria's strategic approach to poliovirus eradication. During the IMB meeting, the delegation highlighted that a close partnership between the Polio Programme and services that improve nutrition, essential immunisation and maternal and child health is creating an opportunity to enhance value for money and programme sustainability.

Despite this intensive focus, Nigeria's essential immunisation coverage is still too low. Inactivated polio vaccine became part of the routine schedule in 2015, but coverage remains insufficient in high-risk areas. National coverage for oral poliovirus vaccine is also below the threshold required to maintain population immunity.

Novel oral poliovirus vaccine performance

Nigeria's experience as the primary user of novel oral polio vaccine type 2 provides critical insights into the vaccine's field performance and optimal deployment strategies. The country has administered over 450 million doses since March 2021, making it the most extensive testing ground for this genetically modified version of the vaccine.

Field effectiveness studies in Nigeria demonstrate that the new vaccine performs comparably to monovalent oral polio vaccine type 2 in stopping transmission, with susceptible populations reduced by approximately 42% and 38% per campaign, respectively. However, this effectiveness varies greatly across geographical areas and between different vaccination campaigns. This suggests that campaign quality influences effectiveness.

Multiple vaccination rounds with trivalent and bivalent oral polio vaccine have always been

needed to achieve a population immunity level sufficient to interrupt poliovirus transmission. The number of rounds has been a function of quality, coverage, size of geographic area, nutritional status, the presence of competing enteroviruses, and background immunity. Most countries stopped transmission with children under the age of 5 years receiving between seven and 10 doses of vaccine (the total of essential immunisation and supplementary immunisation activities). In some places further doses were needed. Novel oral polio vaccine is proving to be no different. Estimated per-dose effectiveness was identified in case-control studies at 12%, meaning that current standard operating procedures calling for two rounds of vaccination may be insufficient.

In particular, slow response to outbreaks has resulted in large, poorly implemented campaigns. More rapid, higher-quality campaigns could reduce the scale of transmission, greatly improve the efficiency of operations, and increase the odds of control.

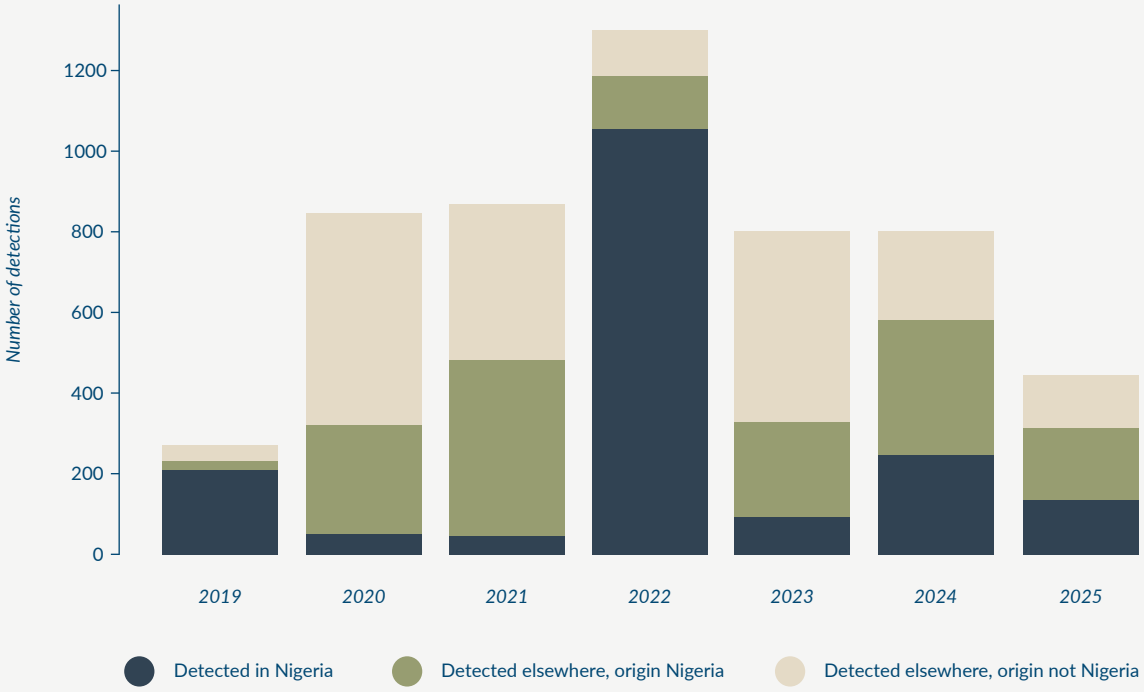
Regional coordination and cross-border dynamics

The Lake Chad Basin initiative is a vital strategy and demonstrates that regional coordination mechanisms can offer significant potential for enhanced effectiveness. A WhatsApp group administered by the WHO Africa Regional Office facilitates direct communication between health ministers from Nigeria, Chad, Cameroon, Niger, and the Central African Republic. This enables rapid decision-making and coordinated response planning. Civil society organisations, such as the CORE Group Partners Project are also playing a vital role reaching refugee camps and enabling vaccination and surveillance across the Nigeria-Niger border.

The countries' Polio Programmes have successfully synchronised joint launching ceremonies and aligned campaign timing across the Lake Chad Basin nations, demonstrating political commitment and operational coordination capabilities.

There is now wide recognition that substantial population movements, particularly nomadic migration patterns, must be responded to by coordinated approaches rather than country-specific strategies alone.

GLOBAL NUMBER OF DETECTIONS OF TYPE 2 VACCINE-DERIVED POLIOVIRUS : THE NIGERIA CONTRIBUTION



Detections include polio cases and positive environmental samples. To present the most up-to-date data, each year covers May to April.

Strategic and operational concerns

While Nigeria successfully eliminated wild poliovirus transmission and achieved certification as wild poliovirus-free in August 2020, type 2 vaccine-derived poliovirus was in circulation. It did not take long before Nigeria became the epicentre of a wave of type 2 vaccine-derived poliovirus outbreaks.

Nigeria's track record of being the primary source globally of circulating type 2 vaccine-derived poliovirus is one of the biggest strategic concerns of the GPEI.

The Nigeria Polio Programme leadership acknowledged, during the Geneva discussions with the IMB, that there had been "a degree of complacency" following the achievement of wild poliovirus-free status. This complacency contributed to failure to maintain high population immunity. This along with other factors described in previous IMB reports led to the subsequent transcontinental surge in type 2 vaccine-derived poliovirus cases.

The Nigeria Polio Programme has failed to rekindle the flame of passion and dynamism that drove it to leave the polio-endemic country list.

This deterioration has occurred precisely when Nigeria's role as a regional transmission hub makes its performance critical to continental and global eradication goals.

The Nigeria Polio Programme faces fundamental management and cultural challenges requiring wide-ranging and sustained transformation activities rather than technical fixes. Issues of fake finger marking, data falsification, political interference, and community resistance represent deep-rooted problems requiring comprehensive, long-term solutions.

Changes to the Nigeria Polio Programme involve new accountability mechanisms for staff at the operational level. It is important, though, that the leadership of the Nigeria Polio Programme recognises that seeking to improve performance through fear-based punitive approaches will compound deep-rooted operational cultural problems. Instead, they must adopt attitude change, motivation enhancement, staff valuation, and demonstrate active listening to frontline concerns.

Even accessible areas of Nigeria present formidable challenges, including some places with 40% malnutrition rates and substantial zero-dose child populations. Therefore, solutions to stop poliovirus circulation in Nigeria must also address broader social and health system factors beyond vaccination delivery alone.

The persistent circulation of type 2 vaccine-derived poliovirus, despite extensive vaccination initiatives, reveals fundamental weaknesses in campaign implementation and population immunity maintenance. Nigeria has administered over 450 million doses of type 2 novel oral poliovirus vaccine since March 2021. This is approximately 60% of global usage. Yet, transmission still continues in multiple states.

There is considerable non-acceptance of the oral polio vaccine in large urban areas. The Polio Programme's "non-compliance resolution teams" are successful in just 58% of cases. A deeper understanding of Nigeria's polio and essential immunisation communication capacity and approaches is needed to address the root causes of stagnation. Beyond identifying "non-compliance", the programme must seek to understand the issues that prompt refusals more deeply, in order to help combat scepticism.

Nigeria's surveillance system has strengths but also critical weaknesses. The country has implemented substantial innovations, including an extensive environmental

surveillance network covering 113 sites across 29 states and the Federal Capital Territory. Despite this, surveillance quality remains inconsistent across the country. In particular, conflict in northeastern Nigeria, notably in Borno state, limits access to populations at risk. This inevitably creates reservoirs of undetected transmission. Community-based surveillance and mobile teams have improved coverage of accessible areas, but fundamental gaps remain in areas controlled or influenced by insurgent groups.

The establishment of genetic sequencing capabilities in WHO's laboratory (accredited in February 2025) in Ibadan is a major step forward in surveillance capacity. Now, Nigeria can independently sequence poliovirus isolates. This reduces testing turnaround times from several weeks or longer to about one week. Nearly 100% concordance with reference laboratories provides assurance in the quality of in-country sequencing capabilities.

That fake finger marking continues to happen – even at a reduced level – undermines not just vaccination coverage, but the Nigeria Polio Programme's entire credibility.

The persistence of type 2 vaccine-derived poliovirus transmission in Nigeria for so long, despite unprecedented vaccine deployment and international support, reveals fundamental architectural weaknesses in the current approach. The Polio Programme's continued reliance on vertical campaign structures, while achieving short-term coverage targets, has failed to build the sustainable population immunity required to prevent ongoing transmission. The goal of high coverage essential immunisation systems and widely available primary care services has been a long-held aspiration of successive Nigeria governments.

It is true that security constraints in northeastern Nigeria continue to pose fundamental challenges to polio eradication. The most recent assessments show some 39% of settlements in Borno state remain inaccessible due to ongoing insurgency. Insecurity was also present in the period when Nigeria eradicated wild poliovirus. Gaining accessibility in security compromised areas of Nigeria has been achieved before. Tried and trusted methods as well as new thinking must be the basis for progress. The deep engagement of local political, community and religious leaders is essential.

Recent developments have intensified geopolitical threats in this vital polio geography.

The persistent insurgency activities in Borno State have created a cascading humanitarian emergency that directly impacts Polio Programme operations. Current estimates indicate approximately 1.4 million internally displaced persons across northeastern Nigeria, with significant concentrations in garrison towns such as Gwoza, where populations seek protection from military installations while remaining vulnerable to ongoing security threats.

The displacement pattern reflects not merely temporary relocation but systematic abandonment of traditional settlement areas, creating large inaccessible zones where essential immunisation services cannot be maintained and acute flaccid paralysis surveillance becomes impossible.

The withdrawal of international humanitarian support has accelerated the collapse of essential service delivery mechanisms upon which vulnerable populations depend. Recent funding reductions have eliminated food security programmes that previously served as platforms for integrated health interventions, including vaccination campaigns. The cessation of some humanitarian aid distribution networks removes critical infrastructure that programme implementers have historically leveraged to reach hard-to-access populations.

This infrastructure degradation extends beyond immediate service provision to affect the fundamental social contract between displaced populations

and government services. When basic survival needs cannot be met through legitimate channels, alternative power structures become increasingly attractive, potentially including those hostile to public health interventions. The erosion of humanitarian presence also eliminates crucial intelligence networks that have previously provided early warning of security threats and population movements essential for Polio Programme planning.

The documented doubling of severe acute malnutrition cases in Borno in the first half of 2025 represents more than a humanitarian tragedy; it constitutes a direct threat to vaccination programme effectiveness. Malnourished children have reduced immunological responses to vaccines, requiring modified vaccination strategies and potentially compromising herd immunity thresholds. The reported 652 child deaths from malnutrition-related causes in health facilities alone suggests far greater community-level mortality that may mask polio surveillance signals and create epidemiological data gaps.

The relationship between malnutrition and vaccine-preventable disease transmission is particularly concerning in the context of circulating vaccine-derived poliovirus. Immunocompromised children may experience prolonged viral shedding, creating community transmission risks that standard surveillance systems may fail to detect. The convergence of a malnutrition crisis with existing security constraints creates optimal conditions for sustained poliovirus circulation in populations that remain largely invisible to programme monitoring systems. This situation reflects the risk in other polio-affected and polio-vulnerable countries.

The IMB's assessment reveals a programme in Nigeria battling geopolitical complexity but still unable to successfully implement well-established technical solutions. The Polio Programme requires continuing strong political will,

management competence, and sustained accountability that have been lacking in recent years. The international community's response to Nigeria's performance will also determine whether the global eradication initiative can recover from this critical setback and achieve its ultimate goal.

DEMOCRATIC REPUBLIC OF THE CONGO

At its meeting in July 2025, the IMB met with representatives of the Democratic Republic of the Congo's (DRC) Polio Programme. The delegation was led by the National Coordinator of the Emergency Operations Centre, the WHO GPEI Coordinator and UNICEF Chief of Health for the country.

It was clear from the presentations and discussion that the Democratic Republic of the Congo's Polio Programme has made major progress despite formidable challenges.

The country has successfully eliminated type 1 poliovirus transmission and has also made substantial improvements in essential immunisation coverage, while implementing innovative rapid outbreak response mechanisms. However, expanding armed conflict has resulted in suboptimal surveillance coverage.

The delegation from the Democratic Republic of the Congo impressed the IMB with their calm and adaptive approach to programming. It balances pragmatic responses to security constraints with an emphasis on maintaining programmatic quality and the integrity of surveillance systems.

The Democratic Republic of the Congo has also made measurable progress in controlling circulating type 2 vaccine-derived poliovirus transmission. Since 2022, the Polio Programme has moved from broad campaigns managing over 500 cases to focused responses targeting specific transmission chains.

Environmental detections reached zero in mid-2025, indicating successful interruption in historical transmission zones. The outbreak is now geographically contained to eastern provinces.

All in all, these changes amount to an impressive epidemiological breakthrough in a country that, along with Nigeria, was a worrying epicentre for wider international spread.

Despite overall progress, the emergence of a new type 1 vaccine-derived poliovirus strain in Tshopo Province (one of 21 provinces) in the Democratic Republic of the Congo, shows starkly the Polio Programme's persistent vulnerability even in areas of apparent success.

This detection, the first new emergence since September 2022, means that there are ongoing population immunity gaps with the obvious potential for viral evolution in under-immunised communities.

Persistent detections of type 2 vaccine-derived poliovirus in remote provinces including Mai-Ndombe and Haut-Katanga are evidence of continued circulation of that virus needing sustained vaccination responses.

The Polio Programme's recent outbreak response history demonstrates its enhanced surveillance and laboratory capabilities. Direct detection nanopore sequencing facilities in Kinshasa are enabling identification, in some cases, within 14 days, enabling immediate follow-through responses. This rapid detection and response capacity is a big operational improvement.

Two recent circulating type 2 vaccine-derived poliovirus cases detected – one through environmental surveillance in Kinshasa, and another in the Central Congo province involving a 10–11 month old unvaccinated child with suspected immunodeficiency, confirms both surveillance sensitivity and persistent risk from unvaccinated populations.

Political commitment and strategic framework

The Democratic Republic of the Congo delegation to the IMB meeting described a convincing picture of sustained political commitment to polio eradication, despite the presence of competing national priorities and security challenges. The Polio Programme operates within a broader health system strengthening framework that includes universal health coverage initiatives and essential immunisation reinforcement supported by Gavi and other partners.

The Polio Programme in the country operates with four key strategic pillars:

- **Quality-focused response:** Emphasis on high-quality campaigns rather than broad geographic coverage;
- **Surveillance intensification:** Systematic efforts to address silent zones and improve acute flaccid paralysis detection;
- **Integrated approach:** Coordination with essential immunisation, nutrition interventions, and other health services;
- **Adaptive programming:** Flexible responses to rapidly changing security and operational contexts.

Innovation in rapid response

The Democratic Republic of the Congo and GPEI have worked hard to implement outbreak response guidelines to improve response times and quality of campaigns. Technological innovations in testing have been important, but interpersonal and community engagement are invaluable. The country has demonstrated that following the guidelines works.

These guidelines, after a case confirmation, require that a "Round 0" response is initiated. This is a rapid, geographically limited polio vaccination campaign within 14 days of detection. The rationale is that, even if small in scale initially,

the early launch of a campaign raises some degree of polio immunity before poliovirus circulation gets deeply embedded. This makes it possible to tamp down spread, reducing the need for large, expensive, and often suboptimal campaigns later.

To operate this approach effectively, advanced preparation is essential, and it is enabled by:

- Pre-positioned emergency funds and vaccine stocks;
- Rapid risk assessment and geographic targeting protocols;
- High-quality campaign implementation verified through post-campaign assessments;
- Direct Detection and Nanopore Sequencing (DDNS) capabilities reducing result turnaround from 30-40 days to 7-8 days.

The response to a 2025 polio case detection illustrates the value of this approach. Intervention was limited to 14 of 31 health zones based on transmission risk analysis, achieving high-quality coverage while minimising spending.

The conflict landscape and access negotiation

The security situation in the Democratic Republic of the Congo is one of the most complex operational environments in the global Polio Programme. Multiple layers of armed conflict are affecting programmatic implementation.

There has been a crisis in the eastern provinces where the Rwanda-supported M23 rebellion's advance culminated in the capture of Goma. This fundamentally altered operational access in North

Kivu, South Kivu, and Ituri provinces. It has created a "state within a state" dynamic where traditional negotiation mechanisms with armed groups were largely ineffective. M23 appeared to have gained a hold over the country's mineral-rich zones. This could have prolonged hostilities and had ongoing repercussions for Polio Programme-related access. However, in late July 2025, the United States and Qatari governments brokered a proposed long-term peace deal that, if it holds, could be very beneficial for polio eradication.

Beyond M23, the Democratic Republic of the Congo Polio Programme must navigate relationships with other armed groups and regional militias, each with different operational procedures and demands.

The drawdown of United Nations agencies and its peacekeeping operations have eliminated crucial intermediaries who previously facilitated dialogue with armed groups and provided logistical support for vaccination activities.

Surveillance in conflict areas is also problematic. The Polio Programme faces critical surveillance challenges with 56% of silent districts located in conflict-affected provinces. A range of adaptive surveillance methods have been implemented to maintain programmatic access despite security constraints.

Essential immunisation and health system strengthening

The Democratic Republic of the Congo's essential immunisation system faces structural challenges that directly affect polio eradication sustainability. There have been substantial variations in coverage across provinces, again affected by inaccessibility in conflict-affected and remote areas. The Big Catch-Up campaign experience illustrated how vaccines may be made available, but operational funding doesn't necessarily follow. This prevented implementation of planned 2024 activities which were then postponed until June 2025.

Operational funding must always be aligned with campaign implementation. This is relevant both to large-scale strategic campaigns and outbreak responses. The country's public health leaders are pushing strongly on integration strategies. The focus is on service delivery to systematically coordinate polio campaigns with essential childhood vaccines, vitamin A supplementation, deworming treatment, and other health interventions. The aim is to maximise resource use efficiency and population engagement.

At a broader strategic level, alignment with universal health coverage and primary healthcare

strengthening initiatives aims to build sustainable immunisation delivery capacity, including for polio eradication. These are the right goals but show the scale and degree of coordination of action required if it is to resolve the complexities of maintaining true nationwide population immunity. The poliovirus cannot be allowed to reinfect polio-free areas.

Community engagement and vaccine acceptance

The Democratic Republic of the Congo's team presented, to the IMB, a nuanced analysis of vaccine acceptance patterns.

Unlike many settings where vaccine refusal concentrates among less educated populations, the country also finds hesitancy among intellectual elites and medical professionals. This requires targeted engagement strategies.

Approximately 13% of polio vaccine refusals are recorded as stemming from religious beliefs. Although this affects less than 5% of the overall population, it represents over five million people, and justifies specialised community engagement approaches.

There has also been a post-COVID impact on oral polio vaccine acceptance. Increased hesitancy is attributed to infodemic effects and misinformation propagated by social media. The Polio Programme is using an inventory of tailored communication strategies to address these different sources of vaccine refusal and hesitancy.

Strategic progress and complex challenges

The Democratic Republic of the Congo has made remarkable progress in one of the world's most complex operating environments, successfully eliminating type 1 vaccine-derived poliovirus transmission and adhering to the GPEI outbreak response guidelines to rapidly stop new outbreaks while introducing new technology. The Polio Programme's adaptive approach to security constraints and integration with broader health system work exemplifies a determined focus on delivering the fundamental activities of polio eradication under extreme conditions.

The Democratic Republic of the Congo government and polio team leadership recognise the scale of the challenge ahead; at the IMB meeting, they said: "We need to achieve excellence in everything we do. Anything less risks leaving pockets of vulnerability where transmission could take hold again."

The country has developed the use of 14-day rapid response protocols, direct detection capabilities, and adaptive technological approaches to shorten outbreak response times. Eradication-standard containment of outbreaks is therefore possible.

Silent areas, acute flaccid paralysis and community-based surveillance in remote areas, reverse-cold-chain sample transport to the laboratories and care-seeking behaviour are ongoing challenges that, if not addressed, could mask low level transmission. The country has eradicated polio many times over the past 25 years. Continuing to sustain high levels of quality nationally has proven to be more difficult, even when well-funded and with the support of numerous donor partners and programmes.

The Democratic Republic of the Congo provided valuable examples of initiatives to overcome geographical barriers to polio vaccination. The country's polio team described using drone technology for vaccine transport to isolated communities.

Vaccine and stool sample transport through conflict-affected areas remains insecure as typical routes of travel may be unavailable. Political tensions with neighbouring Rwanda have created challenges for diversion through that country's territory. The recently negotiated peace deal may reduce this barrier.

The Polio Programme's emphasis on integration with essential immunisation and broader health system strengthening is critical to achieving and

maintaining population immunity and surveillance through the pre- and post-certification periods. It is absolutely crucial for the eventual withdrawal of oral polio vaccines. Understanding and overcoming barriers to integration are vital to building the foundations for long-term sustainability.

The Democratic Republic of the Congo's ongoing challenges in stopping poliovirus circulation also involve population mobility. Substantial population movements between the country and its neighbours (Rwanda, Uganda, Burundi) necessitate coordinated vaccination strategies at border crossings. Partnership with, and funding from, a broader range of organisations is important for operationalising activities and for regional policy development. The International Organisation for Migration, UN High Commission for Refugees, health-relevant and reliable non-governmental and civil society groups and the African Union can all play a part in achieving and maintaining vaccination coverage and disease reporting for mobile populations during conflict-related displacement.

The IMB is hopeful that the country will be able to achieve and sustain population immunity and surveillance quality across the country, through coordinated and funded partnerships, breaking the cycle of viral re-emergence. At the same time, ongoing struggles with resource allocation and conflict management highlight systemic challenges requiring global Polio Programme attention and support.

AFRICA WIDE CONCERNS

The type 2 vaccine-derived poliovirus situation in Nigeria and the Democratic Republic of the Congo must be seen in the broader African context. This poliovirus remains a major threat for many countries. The massive sums of money needed to fight outbreaks due to this poliovirus are beyond the domestic budget capacity of most African countries and continue to drain the GPEI global polio fund.

Although there has been a downward trend in the case count from the beginning of 2025, that encouraging decline is not fully reflected in the large number of positive environmental surveillance samples still being detected.

The immediate challenge for the Polio Programme in Africa is the multiple outbreaks posing complex problems across a very wide geography.

More than 37 graded health emergencies were documented in 2024. Many are in the critical geographies that polio teams are working in. They are due to traditional vaccine-preventable disease outbreaks, plus new emerging pathogens like mpox, and many other causes.

The number of countries affected by type 2 vaccine-derived poliovirus detections decreased from 25 in 2024 to 16 by mid-2025, yet major barriers remain across different geographic blocs. The Polio Programme's analysis highlighted four common regional barriers: lack of high-level political engagement, insufficient domestic financial contributions, competing health priorities, and persistently low essential immunisation coverage.

"The urgent necessity for systematic integration has moved from aspiration to operational imperative."

Each part of the region faces its own distinct challenges requiring tailored solutions.

In the West of Africa, leadership and coordination difficulties are compounded by broader geopolitical tensions. The situation has been significantly complicated by the official withdrawal of Niger, Mali, and Burkina Faso from the Economic Community of West African States (ECOWAS) and the cessation of their collaboration with Nigeria. This decision, formalised in January 2025, follows a period of heightened tensions and diplomatic disputes, particularly regarding the restoration of democratic rule after military coups in these countries. The move signals a significant shift in regional dynamics, with these nations forming their own bloc, the Alliance of Sahel States (AES).

This political rupture is potentially bad news for the Polio Programme. It has created unprecedented challenges for cross-border coordination, making official meetings between Niger and Nigeria regarding polio vaccination and broader health issues very difficult. The breakdown in formal diplomatic relations directly impacts technical cooperation that has historically been essential for controlling cross-border poliovirus transmission.

The Lake Chad Basin region, encompassing Nigeria, Chad, Niger, and Cameroon, has emerged as a critical engine of polio transmission across Africa. Over the past 12 months, type 2 vaccine-derived poliovirus has been detected extensively across these four countries. The interconnected nature of these outbreaks is clear. For example, over 50% of polio cases in Chad in 2024 were genetically linked to strains circulating in Cameroon and Nigeria.

Cross-border spread is fuelled by high population mobility, with an estimated 30 million people living in the Lake Chad Basin region who move frequently across porous borders. Security challenges further complicate operations in Chad, Niger, and Nigeria, limiting accessibility to certain settlements and populations.

Communication and community engagement challenges predominate in major urban centres of Cameroon like Yaoundé and Garoua, as well as various Nigerian states. Vaccine refusals in these areas reflect broader trends toward scepticism about vaccination programmes, requiring sophisticated communication strategies adapted to metropolitan contexts.

Chad and Niger face distinct operational challenges, particularly regarding the logistical difficulties of reaching scattered communities.

In the Horn of Africa there are both administrative barriers and operational complexities. In Ethiopia, even deploying personnel from Addis Ababa to other provinces means obtaining visas, a process that can take considerable time and cost over $200 per person. These bureaucratic obstacles create delays and additional expenses that impede rapid response capabilities.

Surveillance and cross-border coordination challenges affect Eritrea and Somalia, though improvements are being made through monthly meetings between WHO regional teams. The ongoing conflict and inaccessibility of certain areas in Eritrea are significant barriers to comprehensive programme implementation.

Kenya and Somalia have large migrant and displaced populations that are difficult to track and vaccinate consistently. Adherence to the Polio Programme's standard operating procedures creates additional complexity.

South Sudan has suffered due to the withdrawal of USAID support for surveillance activities, leaving a gap in monitoring capabilities that had previously been well-supported.

The absence of USAID support in smaller, non-outbreak countries will also leave a major gap. These countries must urgently identify domestic or alternative funding arrangements to avoid a collapse of surveillance capacity.

Algeria faces difficulties with surveillance gaps and the implementation of polio vaccine campaigns. The country has opted for a fixed-site strategy rather than house-to-house vaccination, which greatly limits the ability to reach all children comprehensively.

Guinea has a concentration of both type 2 and type 3 viruses, along with continuous postponement of campaigns. Implementation often occurs several months after initial planning due to administrative obstacles and approval delays. Multiple outbreaks and emergences with suboptimal coordination further hamper polio outbreak response capabilities.

In Mali there has been no poliovirus detection despite all five bordering countries regularly notifying environmental poliovirus detections. The country's surveillance systems appear strong, but the situation requires continued vigilance.

Senegal is a stable country, but differences in perspective have emerged between technical and political authorities regarding the implementation of polio vaccination campaigns. Technical personnel recommend use of the inactivated poliovirus vaccine eschewing the novel oral poliovirus vaccine type 2. Addressing this divergence has required engagement at the highest levels of governance.

Surveillance infrastructure and capability enhancement

The Polio Programme in Africa has achieved important advances in regional laboratory capabilities, reducing dependence on external facilities while maintaining high-quality diagnostic and sequencing services.

Despite laboratory improvements, surveillance gaps remain a critical concern, particularly due to orphan poliovirus detections. The presence of such viruses signals missed transmission. The Polio Programme has implemented systematic surveillance enhancement, including retroactive case studies, and identified substantial numbers of previously undetected acute

flaccid paralysis cases; 580 true cases were identified from 1,196 suspected cases across three Nigerian states.

The environmental surveillance network now covers wastewater sites in 46 of 47 African countries, with quality improvements boosting enterovirus detection rates by 20%. Despite this improvement, environmental surveillance only covers a small proportion of the population.

Continued investment in diagnostic innovation, including expanded sequencing capacity and direct detection nanopore technology, provides essential tools for rapid outbreak detection and response. The steps necessary to scale up these technological improvements are discussed in a separate section later in this report.

Broader strategic implications

In addition to the tailored measures necessary for Nigeria and the Democratic Republic of the Congo, there are key strategic implications for polio eradication in Africa as a whole:

Political re-engagement: Success requires renewed engagement at the highest political levels, comparable to the commitment shown during wild poliovirus eradication;

Resource transition: Funding constraints necessitate accelerated domestic resource mobilisation and more efficient use of available resources while protecting the WHO's ability to procure standard commodities that countries may not be able to;

Implementation focus: With proven strategies available, success depends primarily on disciplined implementation and performance management rather than technical innovation;

Gender integration: Programme effectiveness requires systematic integration of gender considerations into all aspects of planning and implementation;

Communication evolution: Modern communication strategies must address contemporary information consumption patterns and counter global misinformation campaigns; global and regional leadership is urgently needed to help steer this work;

Regional coordination: Cross-border coordination remains essential, requiring both political and technical cooperation despite diplomatic challenges.

OTHER LOCATIONS OF TYPE 2 VACCINE-DERIVED POLIOVIRUS

Beyond the endemic country challenges, the Eastern Mediterranean region polio teams are managing multiple type 2 vaccine-derived poliovirus outbreaks that threaten both local populations and neighbouring countries. This complex epidemiological picture includes importations from outside the region, internal spread, and exportation to other regions.

Sudan's outbreak response exemplifies both challenges and successes in outbreak management. Despite conflict conditions, Sudan has responded effectively to outbreaks, with no circulation detected for over six months. However, surveillance weaknesses in conflict-affected areas mean that the true transmission status in the country is uncertain.

The situation in **Gaza** is emblematic of the challenges posed by conflict. After detecting type 2 vaccine-derived poliovirus in environmental samples in March 2025, the programme managed to conduct three vaccination rounds despite significant operational difficulties. A fourth round has been deferred due to ongoing insecurity, but teams remain ready to resume as soon as conditions permit. This highlights the importance of adaptability and partnership in responding to outbreaks in complex humanitarian contexts.

Somalia's long-standing outbreak shows encouraging signs of improvement, with enhanced campaign quality,

engagement of the CORE Group Partners Project, and expanded access. The last detection was in June 2024, and the country participates in focused vaccination campaigns within the Horn of Africa.

The epidemiological landscape in **South Central Somalia** reflects wider consequences of governance fragmentation. An estimated 500,000 children remain beyond the reach of systematic vaccination campaigns due to territorial control exercised by various opposition and militant groups across the region. This substantial population represents not merely a coverage gap but a persistent reservoir for sustained poliovirus circulation that undermines broader regional eradication actions.

In these areas, operational complexities extend beyond simple security concerns. Each controlling faction maintains distinct policies regarding external intervention, requiring programme implementers to navigate multiple, often conflicting, authorisation processes. The absence of unified governmental control eliminates the possibility of comprehensive, territory-wide campaign implementation, forcing the Polio Programme to operate through patchwork arrangements that inevitably leave important populations unreached.

This access pattern contributes directly to the persistence of what has been characterised as a "slow-burning" type 2 vaccine-derived poliovirus outbreak. The intermittent nature of vaccination activities, combined with incomplete population coverage, creates ideal conditions for continued viral evolution and transmission. The inability to achieve uniform vaccination coverage across contiguous geographical areas hinders the establishment of population

immunity thresholds necessary for interrupting transmission.

The situation in Northern **Yemen** presents a distinct but equally problematic access barrier, with an outbreak rooted in explicit policy restrictions rather than security considerations alone. The majority of the paralytic polio cases have occurred in northern areas where vaccination campaigns have been impossible to implement. Controlling authorities have implemented policies that effectively prevent the deployment of sufficiently intensive outbreak response measures, despite ongoing paralytic polio transmission and concurrent measles outbreaks that have resulted in the deaths of hundreds of children.

This policy environment demonstrates how administrative decisions can nullify technical capacity and resource availability. Programme teams possess the epidemiological knowledge, vaccine supplies, and operational frameworks necessary for effective outbreak response, yet remain constrained by restrictions that limit campaign frequency, geographical scope, or population targeting strategies. The disconnect between technical capability and operational authorisation represents a fundamental governance challenge that transcends traditional programme implementation barriers. It is an increasingly common operating environment for the Polio Programme, especially in the East Mediterranean region.

Ongoing military operations and regional geopolitical tensions create additional layers of access restrictions that further limit programme flexibility and responsiveness. Active conflict conditions create operational constraints that effectively render standard outbreak response protocols inadequate for achieving epidemiological objectives.

Recent negotiations with Houthi authorities have delivered agreement on a health emergency response plan focused on primary healthcare refurbishment combined with outreach vaccination services.

In the Western Pacific region, the outbreak of type 2 vaccine-derived poliovirus in **Papua New Guinea** is ongoing and follows a similar pattern to countries in Africa, where low essential immunisation, a lack of preventive campaigns and a dearth of funding left critical pockets of vulnerability.

In **Europe,** environmental surveillance has detected type 2 vaccine-derived poliovirus in waste water samples from several countries, including **Germany** (28 detections, in April 2025), the **United Kingdom, Israel, Poland, Finland,** and **Spain.** These detections are linked to importations from outbreak zones in Africa and the Middle East, and there is currently no evidence of local circulation.

The global Polio Programme is closely monitoring the situation in collaboration with European partners to ensure early detection and rapid response if needed. In Europe, as a polio-free region, ongoing resource needs for maintenance are not included in the GPEI budget and Polio Programme funding has not been received for many years. With USAID's non-financial resource requirement support ending, the WHO European region has few resources to enable staff to respond to the current situation. Domestic funding is, of course, available in high-income countries to mount an outbreak response to such poliovirus emergences. However, there are middle-income countries that, if infected, could add to the global list of countries with repeated vaccine-derived poliovirus outbreaks. This highlights the need for budgeted maintenance funding in polio-free regions.

The Polio Programme has a clear focus on preventing the establishment of persistent transmission in previously polio-free areas by "stopping the virus pump" in large polio-exporting countries. Yet, responding to re-established poliovirus circulation is hugely more expensive than preventive polio activities. The Polio Programme has moved focus away from maintaining population immunity and preventing the conditions for international spread. **Papua New Guinea** and **Ethiopia** are the latest in a long list of previously polio-free countries now responding to expensive importations as a result. They did not have sufficient investment, nor oversight of their resilience capability to maintain high population immunity. This made them vulnerable to importations.

DELIVERING POLIO GOALS THROUGH INTEGRATED SERVICES

DELIVERING POLIO GOALS THROUGH INTEGRATED SERVICES

As the Polio Programme grapples with persistent wild poliovirus transmission in endemic countries and recurring outbreaks of vaccine-derived poliovirus across multiple geographies, the urgent necessity for systematic integration with essential immunisation and broader health systems has moved from aspiration to operational imperative.

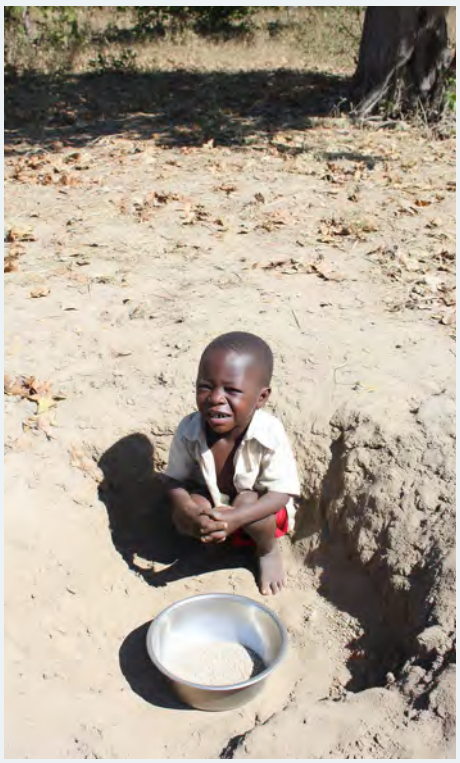
This is reflected in the preceding sections of this report, where the IMB has considered the variety of approaches already being used, tried out, or scaled up in order to reach a greater proportion of children with the oral polio vaccine and to raise the base of population polio immunity. Generally, this is effected through delivery processes that provide additional amenities and services popular with communities and that add oral polio vaccine to existing and planned essential immunisation and primary care systems. These include birth dose vaccination and innovations such as UNICEF's Baby-Friendly Hospital Initiative.

Integration may therefore be looked at in terms of its value in reducing current levels of poliovirus circulation.

The concept of integration also needs to be seen as vital to achieving and maintaining a level of immunity that allows a safe journey to a polio-free world. This involves using integrated approaches to accelerate coverage with inactivated polio vaccine and current and future oral polio vaccines.

The technical foundation for integration rests on understanding how different polio vaccine formulations serve complementary but distinct roles in population immunity.

Inactivated polio vaccine, either in existing, standalone, form, or within the new hexavalent vaccine, provides protection against paralytic disease through injection at fixed facility sites. This requires trained healthcare providers and sterile equipment. The demonstrated operational effectiveness of new needle-free jet injector technology to provide fractional doses of inactivated polio vaccine in house-to-house or campaign settings is a relatively new addition to the ways of boosting polio immunity. Applications in Pakistan and Nigeria demonstrate high community acceptance, ease of use by trained volunteers, and the potential to extend existing inactivated polio vaccine supplies. The quick delivery, lower number of injections, and reduced infant crying are valuable for overcoming health worker and parental barriers. However, although inactivated polio-containing vaccines can protect children from paralysis, they cannot alone interrupt poliovirus transmission in populations with existing circulation.



Conversely, oral polio vaccines prevent both paralytic disease and infection, creating mucosal immunity that stops transmission. Delivered through house-to-house campaigns or outbreak response activities, oral polio vaccine can reach populations that facility-based services cannot. However, multiple repeat doses are necessary, and the oral polio vaccine's rare potential for reversion creates the vaccine-derived poliovirus challenge that now afflicts many countries.

Technical complementarity between the two methods demands coordinated deployment strategies that maximise each vaccine's advantages while mitigating limitations. Inactivated polio vaccine builds baseline population immunity traditionally through essential immunisation, whereas oral polio vaccine campaigns provide transmission-stopping coverage in high-risk areas. With new technological innovations in vaccine delivery, such as needleless systems, GPEI and Gavi have the opportunity to use the existing vaccines optimally and through traditional, as well as non-traditional, delivery methods. Decisive action must be taken to coordinate across programmes, and as part of a national immunisation strategy, if polio programmatic benefits are to be fully realised.

The limitations of vertical programming have been glaringly obvious for a long time and the urgency of fully embracing a more integrated approach has been emphasised over and over again in earlier IMB and TIMB reports. The GPEI repeatedly side-stepped this independent advice. Essentially, its position has been that: firstly, the oral polio vaccine was successful in eliminating poliovirus transmission throughout all previously endemic countries; and secondly, raising immunity levels for the post-certification period will be a task for later.

This vertical programme dogmatism began to unravel when oral polio vaccination was rejected by more and more communities, making required coverage levels increasingly difficult to achieve. The consequences of weak essential immunisation systems are reflected in the massive scale of vaccine-derived poliovirus across Africa.

Integration can combine vaccination with broader action to reduce poliovirus transmission pressure. Initiatives such as "WASH," which promote water, sanitation, and hygiene system strengthening, create a less favourable environment for the poliovirus. Pairing vaccination with education on ancillary household measures which prevent spread can also make conditions less conducive to circulation, augmenting vaccine effectiveness. Money is saved by integration, which minimises duplication of logistics, staff and resources.

Capitalising on the "whole of government" pledges, GPEI and Gavi are in a strong position to encourage local, intersectoral collaboration with elected leaders to prioritise areas with high polio-risk for government support beyond immunisation. Unlike vertical interventions, integration inherently promotes community ownership of activities, thereby fostering programme sustainability and community trust. The potential value of integrating basic low-cost services has been given insufficient attention by the GPEI.

The arithmetic need for integration has become stark and undeniable. Across 31 countries where both GPEI and Gavi operate, poliovirus transmission persists alongside some of the world's largest populations of zero-dose children.

This geographic convergence is not coincidental – it reflects the underlying systemic weaknesses that enable both phenomena to flourish. In these complex settings, often characterised by fragility, humanitarian crisis, and limited state capacity,

ingrained programmatic boundaries become artificial constraints to effective health service delivery.

The need for a substantial strategic shift reflects recognition that campaign-based approaches, while effective at reducing case numbers, prove insufficient in isolation to sustain interruption of transmission. The pattern of recurrent outbreaks in countries that have achieved temporary poliovirus elimination demonstrates the limitations of relying solely on emergency response mechanisms without corresponding essential immunisation improvements. Insufficient inactivated polio vaccine coverage leaves children susceptible to paralytic disease, while poor essential immunisation systems fail to provide the population immunity necessary to prevent vaccine-derived poliovirus emergence. In countries with circulating vaccine-derived poliovirus, average first-dose inactivated polio vaccine coverage is 17 percentage points lower than in countries without outbreaks. This demonstrates the dangerous immunity gaps that the poliovirus exploits with devastating efficiency.

Overall global inactivated polio vaccine coverage data reveal the magnitude of the challenge. While first-dose inactivated polio vaccine coverage hovers around 85%, this masks substantial variations: 77% in the Africa Region and 82% in the Eastern Mediterranean Region. These are the two regions of the world precisely where polio risks are highest. More concerningly, second-dose inactivated polio vaccine coverage is at 68% globally, with particularly low rates in regions critical for polio eradication: 48% in the Africa Region and 74% in the Eastern Mediterranean.

The correlation between low essential immunisation coverage and polio case incidence demonstrates a reinforcing cycle of vulnerability that vertical programming cannot address.

This dual programme failure is occurring despite substantial resource investment and technical expertise. It highlights the flaws of parallel programming approaches.

Integration offers a pathway beyond these limitations through systematic coordination that leverages each programme's comparative advantages while addressing shared operational challenges. GPEI's campaign delivery expertise and community mobilisation capacity complement WHO and Gavi's essential immunisation support and health system strengthening investments. Together, these capabilities can address the full spectrum of immunisation service delivery requirements in complex operational environments.

The window for implementing systematic integration remains open, but demographic and epidemiological trends suggest this opportunity is time-limited. Population growth in fragile settings continues to expand zero- and low-dose populations, while climate change and conflict create additional obstacles to traditional service delivery approaches. Integration represents perhaps the final opportunity to achieve universal immunisation coverage while completing polio eradication within a reasonable timeframe.

Since the Polio Oversight Board endorsed the GPEI's integration approach in October 2023, the Polio Programme has concentrated on four key areas: collaboration with civil society and humanitarian actors; co-delivery and multi-antigen campaigns; provision of basic needs as incentives; and coordination on the zero-dose agenda.

GPEI has been cataloguing integration activities for several years, which surely makes it possible to understand what has and has not been done on either a planned or opportunistic basis, and its magnitude. This characterisation is now well-established. The next steps will be to systematically identify organisational obstacles to integration, coordination, planning and implementation.

Aligning action between GPEI, Gavi, and the WHO's Expanded Programme on Immunisation (EPI) teams to identify and reach zero-dose children is exemplified by initiatives such as The Big Catch-Up campaign.

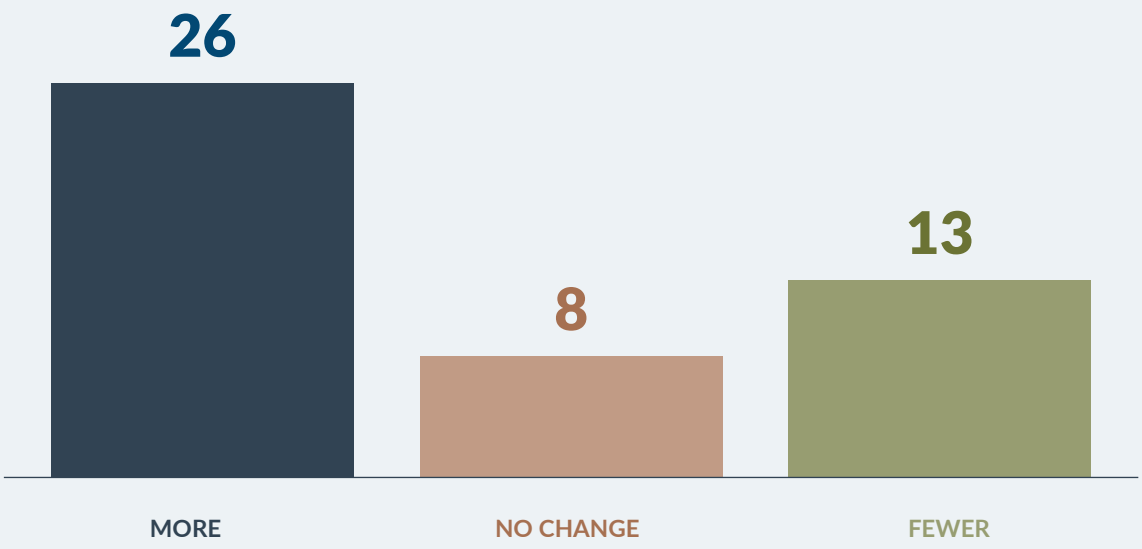
The first-ever joint meeting of the Gavi Board and GPEI Polio Oversight Board in June 2025 marked an important moment in global health cooperation. The meeting's central premise – that enhanced collaboration is not merely beneficial but essential for achieving shared goals – reflects a fundamental shift from parallel programming, periodic campaign hook-ups and demonstration projects, to systematised integrated delivery.

The development of national immunisation strategies is also an important opportunity for systematic polio integration that has been underutilised. Eighty-eight countries have national strategy development processes at various stages, with 56 having finalised strategies that provide frameworks for multi-year planning and stakeholder coordination.

However, analysis of existing priorities reveals concerning trends for disease-specific programmes. Post-COVID strategies show decreased emphasis on vaccine-preventable disease control initiatives as countries prioritise primary health care strengthening and health system resilience over targeted disease control and eradication goals.

CHANGE IN NUMBER OF ZERO DOSE CHILDREN IN AFRICAN COUNTRIES, 2019 TO 2023

Number of countries with more or fewer zero dose children by 2023



STRATEGIC EVOLUTION OF INTEGRATION FRAMEWORKS

Whilst some progress has been achieved in developing frameworks and implementing targeted integration activities, fundamental challenges persist in translating strategic alignment into systematic operational improvements. The convergence of new financial constraints, evolving global health priorities on the part of sovereign donors, and persistent poliovirus transmission, demand more comprehensive integration approaches that maximise synergies while maintaining programmatic effectiveness.

Previous integration initiatives have relied heavily on ad hoc collaboration opportunities, particularly through "polio plus" activities that brought additional health services alongside polio vaccination. This approach, while valuable in getting resistant communities onside, has lacked systematic coordination and strategic prioritisation. The current integration model emphasises active engagement across the four main dimensions: "plus" activities integrated into campaigns; multi-antigen campaign delivery; essential immunisation strengthening; and integrated service delivery in fragile and humanitarian settings. This comprehensive framework acknowledges that successful integration requires deliberate planning and methodical implementation rather than opportunistic collaboration.

Recent experience with multi-antigen campaigns reveals both the potential for, and constraints of, integrated delivery. Co-delivering vaccines can maximise resource efficiency, improve population acceptance, and strengthen health system relationships with communities. However, operational mismatches between programmes create important implementation challenges.

GPEI's house-to-house delivery model conflicts with injection-based vaccines requiring trained personnel and cold chain maintenance, but new technologies could enable inactivated polio vaccine delivery in a house-to-house or site-to-site approach. Emergency response timelines for polio outbreaks rarely permit the planning required for preventive campaigns targeting other diseases, especially for rounds zero and one, but with a well-planned national calendar, integration is more likely in later rounds or for catch-up maintenance. Independent funding sources impose varying per diem rates and procurement procedures, which complicate implementation. Harmonisation of reimbursement should be part of national immunisation plans.

Somalia's successful implementation of integrated polio-measles campaigns on compressed timelines demonstrates that these constraints are surmountable with appropriate leadership commitment and operational flexibility, especially in smaller countries.

Priority integration targets include measles, meningitis, yellow fever, vitamin A supplementation, and deworming medications. They are interventions well-suited for campaign delivery and community acceptance. Successful integration does, however, require countries to develop adequate expertise in multi-antigen and multi-service campaign administration. This is a capacity gap that

limits current potential. There has been measurable progress in integration with approximately 50% of polio campaigns now including additional antigens or health services. Vitamin A and deworming have historically been added to campaigns (twice a year) and there is a sincere effort to expand the number and reach of such interventions. This achievement reflects improvement towards this challenging goal enabled by maintaining a clear focus.

POST-INTERRUPTION TRANSITION MANAGEMENT

The integration framework now explicitly addresses the post-campaign handover period between outbreak response cessation and routine systems adopting responsibility for maintaining population immunity. This transitional phase has always been a critical vulnerability where accumulated surveillance data and community mapping from polio campaign activities risked being a largely untapped resource, which would otherwise enhance essential immunisation outreach and effectiveness. Polio Programme guidance clearly specifies activities for the "stopped to closed" period between transmission interruption and outbreak closure, including essential immunisation outreach, system strengthening, and enhanced surveillance.

The application of these guidelines is inconsistent. The absence of regional coordination mechanisms and limited accountability for transition activities creates persistent vulnerabilities that enable outbreak recurrence.

THE BIG CATCH-UP IMPLEMENTATION EXPERIENCE

The Big Catch-Up initiative provides valuable lessons about integration, implementation challenges and opportunities. GPEI's contribution of 54 million bivalent oral polio vaccine doses for 24 countries demonstrates successful tactical integration, though implementation results remain modest, with only four million doses administered through December 2024.

Somalia's achievement of targets exceeding original plans contrasts sharply with Afghanistan's underwhelming progress, illustrating the variable effectiveness of integration approaches across different operational contexts. The initiative's goal of establishing national policies permitting vaccination beyond age two years has achieved success, with participating countries increasing from six to 30 between 2022 and 2024. The experience highlights both the potential for systematic integration and the persistent challenges of translating strategic agreements into operational implementation. Countries continue to struggle with coordination mechanisms, data sharing, and aligned planning processes that could optimise integration benefits.

HEXAVALENT VACCINE DEPLOYMENT STRATEGY

The strategic deployment of whole-cell pertussis hexavalent vaccine is of huge importance to the global Polio Programme. It is a major integration opportunity that faces both technical and financial constraints.

This six-in-one formulation combines pentavalent vaccine components with inactivated polio vaccine, offering a pathway to increase polio immunity coverage while reducing delivery costs and meeting community and health worker demand for fewer injections.

Analysis of first dose inactivated polio vaccine (IPV) coverage compared to standard markers of essential immunisation coverage in priority countries reveals substantial improvement potential. Some countries show coverage with inactivated

polio vaccine well below the level for the third dose of diphtheria, tetanus and pertussis vaccine, which is scheduled at the same time.

Hexavalent vaccines, if given on schedule, would provide three doses of inactivated polio vaccine, compared to the two doses in the current schedule; further, this would reduce the number of injections by eliminating the addition of a stand-alone inactivated polio vaccine, which mothers (and babies) and health workers will appreciate. As has been seen in polio eradication many times, a new vaccine or technology is never a complete solution. Vaccines do not deliver themselves, so the core challenges of low essential immunisation coverage in priority areas still need to be addressed.

Countries in the first wave of hexavalent vaccine programmes report good acceptance by health workers and communities. In Chad, the switch to hexavalent vaccine could potentially close a 43% polio immunity gap. Similarly, in Madagascar, analysis suggests that hexavalent introduction could provide substantial protection gains precisely in the geographies where vaccine-derived poliovirus has previously circulated.

It is of critical importance that countries optimise usage of the vaccines that they already have. The Polio Programme

"There is no sense of high coverage of inactivated polio vaccine being unambiguously embedded in this global emergency programme."

needs to avoid the mistakes made in the introduction of novel oral polio vaccine. Once it became known that it was coming, some countries deferred using the existing oral polio outbreak vaccine. Crucial responses were not made because of this "waiting for tomorrow" attitude and vaccine-derived poliovirus spread when it need not have done so. So, although hexavalent vaccine has advantages, until it is fully available and funded, inactivated polio vaccine and its fractionated form, both excellent vaccines, should continue to be used comprehensively. Otherwise, progress in raising vitally important polio immunity levels will be held back.

Countries considering hexavalent introduction need comprehensive technical assistance encompassing cost modelling, polio immunity modelling, and NITAG (National Immunization Technical Advisory Group) briefings to make informed decisions. This represents a new paradigm of joint technical support that transcends traditional programme boundaries.

The pricing dynamics surrounding hexavalent vaccines, with current weighted average prices, create market challenges that require aligned demand signals from both the polio and essential immunisation programmes. The chicken-and-egg dynamic between manufacturer investment and programme demand necessitates strategic collaboration for sustainable market development.

Gavi's commitment to full financing of inactivated polio vaccine and hexavalent vaccines for all eligible countries until bivalent oral polio vaccine cessation represents unprecedented resource mobilisation for polio prevention. However, financing alignment alone cannot drive systematic integration. The fundamental differences between Gavi's five-year funding cycles and GPEI's quarterly performance adjustments create temporal gaps that complicate joint planning.

FINANCING ARCHITECTURE AND STRATEGIC ALIGNMENT

The closure of USAID, the near cessation of United States funding for development, health, food, and humanitarian assistance, and restrictions on funding WHO have placed global health, and specifically, disease control and immunisation programmes, in a perilous position.

Restructuring and reprioritisation are underway for country-level domestic resources in addition to international programmes such as the GPEI and Gavi. The fate of funding in the health and social care sectors is uncertain, as is external support for humanitarian crises and fragile states.

The GPEI has a target of raising $6.9 billion for its current strategy, covering 2022-2029. This Financial Resource Request (FRR) budget is only for activities implemented by the World Health Organization and UNICEF. Many important polio eradication activities are implemented by other agencies outside this official budget and are considered "non-FRR". Neither USAID nor CDC can fund WHO, and the loss of these funds to the FRR budget is significant. However, the congressional appropriation for polio funds is ongoing, and discussions are underway to determine how these funds may be used for non-FRR activities.

The reduction in USAID's country-level investments in the health sector and social mobilisation is a devastating blow to the infrastructure that the GPEI and Gavi rely on. This situation offers GPEI an opportunity to re-examine the FRR and non-FRR structure and the constraints it places on engaging non-United Nations organisations in polio activities.

The withdrawal of the anticipated $1.2 billion US contribution to Gavi replenishment has created a cascade of funding limitations for Gavi's target of $11.9 billion.

The Gavi board, faced with only 75% of the replenishment having been achieved, has ordered a reassessment of the Gavi 6.0 strategy. It has acknowledged that there will be difficult choices ahead about programme priorities.

The prioritisation framework driving Gavi 6.0 planning, so far, has emphasised deaths averted and cost-effectiveness metrics. Two doses of inactivated polio vaccine and hexavalent vaccines rank relatively low in such priority frameworks despite their potential contributions to population immunity and system strengthening. This rationalisation approach reflects broader global health financing trends that favour quantifiable mortality reduction over eradication objectives and global health security considerations.

This prioritisation mechanism creates some ambiguity in relation to Gavi's commitments to polio. Inactivated polio vaccine procurement could face reductions or elimination despite the Gavi board's current commitments to extend until bivalent oral polio vaccine cessation. Hexavalent vaccine support appears particularly vulnerable to budget cuts.

These fiscal uncertainties occur at a time of increased emphasis on country co-financing and the pursuit of sustainable funding mechanisms. Gavi's strategy of engaging multilateral development banks and promoting in-budget support for vaccination represents a fundamental shift toward nationally financed immunisation systems that could either strengthen or weaken Polio Programme sustainability.

Inactivated polio vaccines are a critical component of polio eradication. They are key to sustaining immunity in the period prior to polio certification and will be the sole means of protection once oral polio vaccine is withdrawn in the post-certification period. Inactivated polio vaccine coverage needs to improve rapidly in the next few years so that polio eradication and transition plans can be successful.

Gavi's main, but not only role, as a partner to GPEI, was to provide inactivated polio vaccines. If Gavi stops this funding and the GPEI does not pick up the costs, then polio eradication is unlikely. While each programme has its mandates, there is a large overlap between donors and stakeholders that are funding both programmes. There should be a way for the two programmes to succeed, but it may mean rethinking the elements of each that are preventing synergy.

Donors and stakeholders have invested over $22 billion to eradicate polio since 1985, but this goal is in jeopardy without a solution that increases coverage with inactivated polio vaccines and mitigates funding shortfalls.

"Vaccines do not save lives—vaccination does."

CIVIL SOCIETY ORGANISATIONS: AN UNDERVALUED STRATEGIC ASSET

CIVIL SOCIETY ORGANISATIONS: AN UNDERVALUED STRATEGIC ASSET

The IMB's past examination of programme implementation in fragile and conflict-affected settings has repeatedly revealed the critical importance of civil society organisations as both operational partners and strategic assets for achieving polio eradication objectives.

The experience of the CORE Group Partners Project, operating across eight countries in some of the world's most challenging environments, demonstrates both the potential and the limitations of community-based approaches to programme delivery in contexts where traditional health systems cannot function.

The role of civil society organisations in the Polio Programme was a major item of discussion at the July 2025 IMB meeting.

OPERATIONAL INNOVATION IN EXTREME ENVIRONMENTS

Civil society organisations have developed sophisticated operational strategies that enable programme implementation in areas categorised as totally or partially inaccessible to conventional public health services and at porous borders.

"The effectiveness of civil society organisations depends on integration within broader strategic frameworks rather than ad hoc gap-filling measures."

The CORE Group Partners Project's evolution from its origins in India to current operations illustrates the adaptability required for sustained engagement in conflict-affected environments. Working with a consortium of approximately 34 international and local organisations, the project maintains an operational presence in areas where security constraints prevent direct government service delivery. Civil society organisations and non-governmental organisations supported by CORE Group Partners Project have broader, long-standing health and development activities in place that are built on with supplemental funding to achieve integrated approaches.

The consortium model shows how effective coordination mechanisms can avoid competition between implementing partners while maximising resource utilisation and operational reach. Through secretariat structures at both global and country levels, participating organisations maintain unified representation in emergency operations centres and coordination forums while preserving their individual operational strengths and community relationships. This approach has enabled delivery across multiple countries while maintaining the flexibility necessary for rapid adaptation to changing security and epidemiological conditions.

The integration of technology into community-based surveillance is a significant operational advance that is extending programme reach while maintaining quality standards. Community volunteers equipped with smartphones and standardised data collection applications provide real-time reporting from areas where facility-based surveillance cannot function. For example, this system has generated 43% of acute flaccid paralysis case reports from project areas in the most recent year, making a substantial contribution to overall surveillance sensitivity in high-risk settings.

COMMUNITY ENGAGEMENT AND SOCIAL INFRASTRUCTURE

The sustained presence of civil society organisations in target communities provides essential social infrastructure. This means that programmatic activities can be undertaken during both stable and crisis times. Local organisations that maintain community relationships through extended periods can resume operations more rapidly following security disruptions than external agencies. The latter must rebuild trust and access arrangements before they can operate again. This continuity is a major advantage for Polio Programme sustainability in volatile environments.

Community-based approaches address population access problems that go beyond simple security threats. The need to document persistent missed populations, particularly mobile and displaced communities, exposes the inadequacy of conventional service delivery models in complex humanitarian settings. For example, civil society organisations have developed innovative solutions including clan-based access negotiations and integration with livestock vaccination programmes to reach pastoralist populations.

The One Health integration model is an innovative approach to service coordination that optimises resource use while addressing community priorities. Joint human and animal vaccination campaigns leverage existing livestock management practices to reach nomadic populations who remain largely invisible to conventional health services. This approach generates community engagement through perceived value rather than external health priorities. It creates sustainable platforms for continuing programme activities.

Civil society organisations have also pioneered practical integration approaches that address community needs while advancing eradication objectives. The far-reaching service delivery model implemented in South Central Somalia is a comprehensive service integration that provides maternal and child health services alongside vaccination activities. It addresses community priorities while creating sustained engagement and trust that then underpin subsequent vaccination activities.

Community members often become vaccination advocates following their personal experience of service benefits. They are more credible and culturally appropriate communicators than external health workers. This type of organic advocacy is an underutilised resource applicable to broader communication strategies.

SECURITY CHALLENGES AND RISK MANAGEMENT

Civil society organisations face direct security threats. There have been deaths of programme staff and volunteers during implementation activities. Recent incidents in Nigeria included targeted attacks on vaccination teams and collateral casualties from broader security operations. The possibility of such occurrences requires sophisticated risk management techniques that balance programmatic objectives with staff safety while maintaining operational effectiveness.

Rather than relying on military escorts or external security arrangements, local organisations leverage traditional authority structures and community relationships to negotiate operational access. This approach, rather than external intervention, has usually proved effective in resolving security incidents. However, the scale and intensity of current conflicts in diverse operational areas may exceed the capacity

of community-based risk management strategies. Some areas remain totally inaccessible when conflict intensity overwhelms local social structures. Programme strategies must incorporate realistic assessments of operational constraints rather than assuming universal accessibility through community engagement.

Community-based surveillance networks provide essential monitoring capacity in areas where external supervision cannot be maintained, but quality assurance mechanisms must account for limited validation opportunities.

The use of geospatial mapping and real-time reporting systems enables remote monitoring while maintaining reasonable quality standards. Community volunteers conduct routine household tracking of children and pregnant women for vaccination status, referral and information-sharing at the doorstep, camel, or tent. This has improved birth-dose vaccination, timely and complete childhood vaccination, and lowered refusal rates during campaigns.

The question of how to document the impact of civil society organisations remains inadequately addressed. The CORE Group Partners Project has a systematic approach to data collection, data quality assessment, supervision and monitoring, and so can demonstrate impact in their project areas. They are respected as technical partners and local problem solvers. The GPEI's focus only on campaign performance misses the impact of the in-between round, regular, gender-aware, tailored engagement at the household and community level that reduces refusals.

COORDINATION WITH THE GLOBAL POLIO PROGRAMME

The relationship between civil society organisations and broader Polio Programme coordination structures leaves gaps in strategic integration and resource optimisation. While country-level coordination is generally very effective, global-level planning processes too often inadequately incorporate civil society capabilities and perspectives into Polio Programme strategy development. This disconnection limits the potential contribution of community-based approaches to overall programme effectiveness. The artificial distinction between the Financial Resource Requirements (FRR) and non-Finance Resource

Requirements (non-FRR) funding categories creates unnecessary complexity in resource allocation while potentially duplicating efforts across different implementing partners. Civil society organisations report frustration with funding mechanisms that fail to account for the integrated nature of community-based operations and the extended timelines required for effective engagement in conflict-affected areas.

The global Polio Programme's leadership must acknowledge that civil society engagement requires strategic planning and sustained investment rather than opportunistic utilisation of available capacity. Effective coordination mechanisms must extend beyond country-level implementation to include global programme planning processes.

Also, resource allocation strategies must account for the extended timelines and higher costs associated with operations in conflict-affected areas while recognising the essential nature of these activities for overall programmatic success. The development of sustainable financing mechanisms for civil society engagement requires coordination between programme partners and consideration of post-eradication transition requirements.

Finally, the Polio Programme must address fundamental questions about strategic priorities and resource allocation in contexts where comprehensive population coverage and early poliovirus detection cannot be achieved through any available mechanism. Civil society organisations provide essential operational capacity for reaching vulnerable populations, but their effectiveness depends on strategic integration within broader programme frameworks rather than ad hoc deployment as gap-filling measures.

GENDER DIMENSIONS: COMPLEX PATTERNS AND CRITICAL IMPERATIVES

GENDER DIMENSIONS: COMPLEX PATTERNS AND CRITICAL IMPERATIVES

The role of gender in polio eradication extends far beyond simple vaccination delivery mechanisms. There are intricate patterns of gender-related barriers and opportunities that demand sophisticated programmatic responses, while simultaneously highlighting gaps in leadership representation and strategic implementation.

CONTEXT-SPECIFIC PATTERNS IN VACCINATION ACCESS AND DISEASE BURDEN

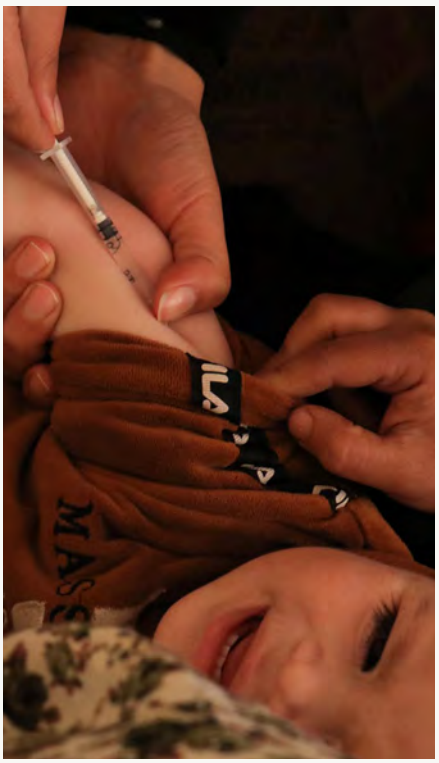
Nigeria's oral polio immunisation activities are an example of the complexity of gender dynamics across different geographic contexts. At its July 2025 meeting, the IMB was told that an analysis of campaigns across 37 states revealed striking variations: some states experienced refusals mainly from females, others exclusively from males. Vaccination gaps were different, with campaigns in some geographical areas missing only girls and others missing only boys. This pattern challenges assumptions about uniform gender effects and emphasises the necessity for deeper understanding and interventions that account for unique social contexts and gender norms within individual communities.

Current programme monitoring systems lack the granular demographic data necessary to identify and address these systematic patterns

effectively. There are gender-related barriers on both the denominator and numerator collection side. Official birth registration is inconsistent, and the quality and completeness of recording facility and home births is difficult and may not be shared with the immunisation service. In some countries, only male family members can register a child. Facility-based essential immunisation services may not keep, or update, monthly summaries or develop due lists that identify gender and can be used to identify local patterns of gender inequity. During polio campaigns, tally sheets generally do not record specific children's age and gender but provide a total number of children broken down by gender and two broad age categories (less than one, and two to five years).

In many countries, newborns and infants are not recorded by either age or gender. An advantage of promoting and tracking birth-dose vaccination would be to increase the quality of data in the monthly birth cohort and document any gender-based refusals immediately.

The heterogeneous nature of the Nigeria example seems to reflect deeper structural inequalities that operate



differently across regions. In some conservative communities, cultural restrictions prevent male vaccination teams from accessing households, creating an operational imperative for female vaccinators who can interact with mothers and enter homes where their male counterparts cannot. These access patterns are not merely logistical considerations but reflect fundamental power dynamics that shape health-seeking behaviours, household decision-making, and vaccination acceptance.

The IMB was also told that global analysis of acute flaccid paralysis surveillance data from 2015 to 2024 revealed consistent male predominance among both circulating wild- and vaccine-derived polioviruses, with boys representing higher proportions in nine out of the 10 years examined. This pattern also extended to zero-dose populations where, amongst boys, there were consistently higher rates of missed vaccination across endemic and outbreak-affected countries. This is consistent with information previously provided to the IMB. It raises concerns about the effectiveness of the Polio Programme's gender-related interventions. Is anything really improving?

"There are intricate patterns of gender-related barriers that demand sophisticated programmatic responses."

However, contemporary surveillance data from Nigeria show nearly equivalent proportions of acute flaccid paralysis cases between boys and girls. This convergence may reflect improved surveillance systems and more equitable access to vaccination campaigns, though continued monitoring remains essential to understand whether these trends are genuine epidemiological shifts or artefacts of improving measurement.

Effective programme adaptation requires fundamental revision of monitoring systems to capture gender-disaggregated data to enable identification of systematic exclusion patterns and follow-up action. Modifications to existing data collection tools could provide essential information for targeting interventions and measuring progress toward equitable coverage across different demographic groups.

HOUSEHOLD DECISION-MAKING DYNAMICS

Gender-power relations fundamentally shape vaccination decisions within households, with male heads of household typically holding primary decision-making authority while women often lack autonomous choice regarding their children's health care. This dynamic creates complex negotiation requirements where vaccination programmes must engage both maternal caregivers and paternal decision-makers to ensure vaccination acceptance. Household decisions may also be influenced by social norms and strong, often male, influencers.

Religious, political or anti-government leaders may put pressure on households to vaccinate, or not. Identifying effective interlocutors to communicate with these important gatekeepers also has a strong gender component – the messenger matters.

In some contexts, these dynamics intersect with beliefs about vaccination being "women's business", potentially limiting male engagement, while in others, women may demonstrate greater motivation to learn about vaccines, but require male permission to access services. The challenge becomes more acute when considering son preference patterns, where families may prioritise boys' health needs over girls', potentially affecting vaccination uptake patterns in specific cultural contexts.

What is of particular importance, in key polio-affected countries, is the fundamental misalignment between programme implementation approaches and actual decision-making

structures within target communities. While programme strategies often emphasise engagement with female caregivers based on assumptions about maternal responsibility for child health decisions, evidence from Nigeria, Pakistan, and Afghanistan demonstrates that vaccination decisions frequently require male authority, particularly for male children.

The cultural context in many high-risk areas assigns special value to male children as future family providers and protectors, creating heightened concerns about potential vaccine-related harm to boys. When vaccination hesitancy exists, families may be more willing to accept perceived risks for female children while protecting male children from interventions viewed as potentially dangerous. This dynamic explains observed patterns where boys represent higher proportions of persistently missed populations despite targeted outreach.

The Polio Programme's focus on addressing vaccine hesitancy without systematic analysis of who refuses vaccination, and why, reflects a broader failure to incorporate gender analysis into strategic planning. Communication initiatives directed toward individuals without decision-making authority, regardless of their receptiveness to messaging, cannot achieve behavioural change when vaccination decisions require different authority structures.

The Polio Programme should also be sensitive when developing communication strategies to avoid exacerbating gender differences. Sometimes it is better to have single-gender-only meetings with peers rather than, say, counselling a husband and wife together, where it may fuel tensions.

A deep understanding of the community and a knowledgeable communications team are critical for getting this right. It is unclear to the IMB if the GPEI currently has this skill set in areas where it is most needed.

FEMALE WORKFORCE AS OPERATIONAL NECESSITY

The critical role of women in polio eradication extends beyond ideological commitment to gender equality to operational necessity. Women, recruited from local communities, serve dual functions as vaccination providers and trusted community advocates who can address vaccine hesitancy through culturally appropriate communication.

Women constitute approximately 62 per cent of Pakistan's frontline vaccination workforce of over 280,000 individuals. In Nigeria, more than 80 per cent of volunteer community mobilisers are women, contributing

significantly to the country's achievement of wild polio-free certification in 2020. This predominance of female participation reflects both pragmatic access requirements and the recognition that women often possess greater community trust and can more effectively address maternal concerns about vaccination safety. Even with the majority of polio campaign workers being female, this alone is not enough. They need training, supportive supervision, recognition, and to be listened to; female workers are often not empowered to solve problems in real-time.

In south Afghanistan, the national policy to deny women a role in the polio workforce is not sustainable if the country's rulers want to eradicate polio.

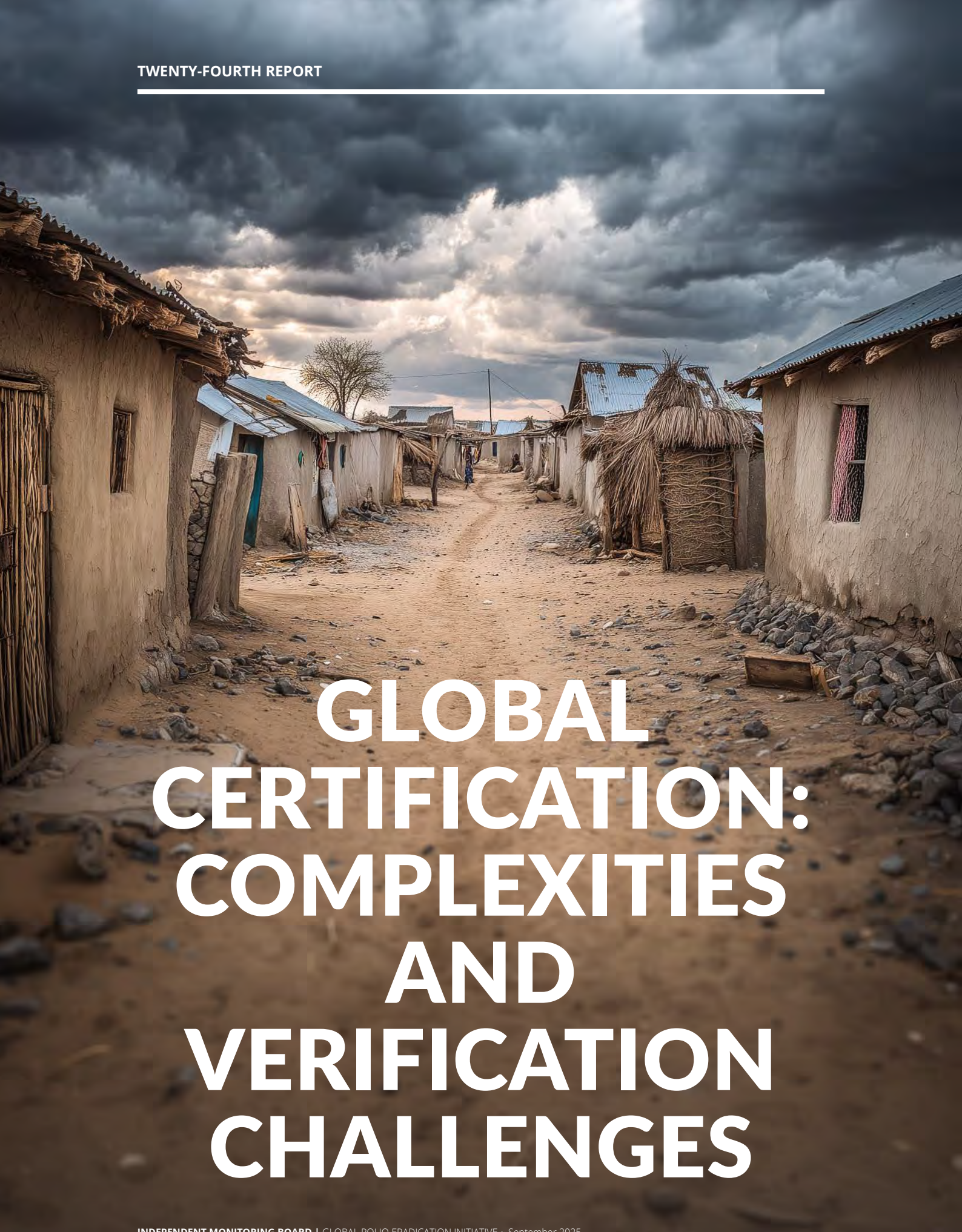
In those communities where men make vaccination decisions, particularly for male children, female-dominated implementation teams may face systematic access barriers that cannot be overcome through training or motivation alone.

Community access challenges extend beyond individual household interactions to encompass broader mobility and safety considerations that affect both male and female health workers differently. Female workers may face restrictions on movement and timing of activities, as well as toilet and personal security considerations that limit their ability to reach target populations, while male workers may be better positioned to engage with community leadership structures, but less effective in household-level interactions with mothers and children.

LEADERSHIP REPRESENTATION DEFICITS

Despite women's overwhelming presence at the operational level, significant disparities persist in Polio Programme leadership and decision-making structures. The 2022 midterm evaluation of the GPEI Gender Equality Strategy revealed that gender parity goals have not been achieved, particularly at management levels and within technical advisory bodies that continue to be largely male-dominated. While the Technical Advisory Groups for Afghanistan and Pakistan included two female members in 2022, these bodies comprised only males during 2020-2021, indicating marginal and inconsistent progress. Female participation in the Technical Advisory Group and other operational planning or policy-level discussions is limited, and when present, they may not be encouraged to speak.

This leadership imbalance creates programmatic blind spots that may limit the quality of programme planning and delivery. Without diverse perspectives at decision-making levels, the risks of traditional approaches are perpetuated, and underlying gender-related barriers to vaccination access are not addressed. The absence of women in supervisory roles also creates accountability challenges, particularly in contexts where male supervisors are unable to enter households to verify vaccination completion.



GLOBAL CERTIFICATION: COMPLEXITIES AND VERIFICATION CHALLENGES

GLOBAL CERTIFICATION: COMPLEXITIES AND VERIFICATION CHALLENGES

The Global Certification Commission's assessment role, as it now stands, carries a fundamental tension between the technical feasibility of certification and the operational realities of achieving sustainable transmission interruption. While surveillance systems have evolved to provide robust evidence for certification decisions, persistent challenges in endemic countries raise profound questions about the achievability of eradication under current strategic approaches and highlight the potential need for alternative certification strategies.

The Commission has expressed major concern about the lack of formal engagement during the 2024 GPEI strategy revision, emphasising the importance of its technical input for realistic timeline development. The repeated extension of eradication deadlines without Commission consultation undermines GPEI technical credibility and leaves the GPEI at risk of setting unrealistic expectations that donors may find discouraging.

Future strategic planning must incorporate technical input regarding the feasibility of transmission interruption and surveillance readiness to ensure achievable objective setting. The relationship between technical certification capability and operational achievement probability requires explicit acknowledgement in strategic planning processes.

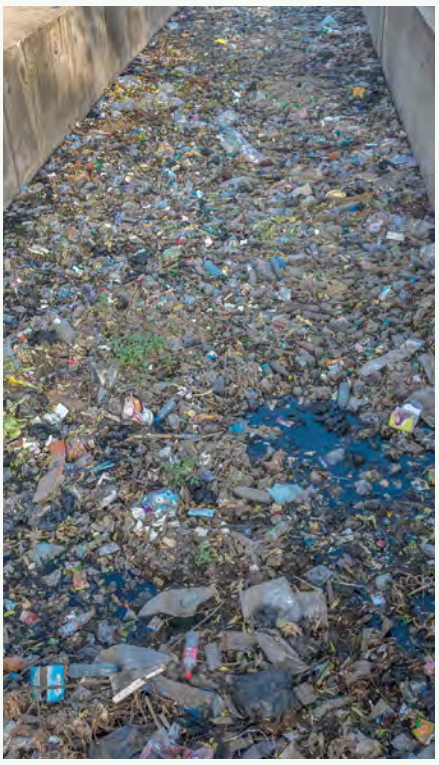
CERTIFICATION FRAMEWORK AND TECHNICAL CAPABILITIES FOR WILD POLIOVIRUS

The Global Certification Commission operates with clear technical criteria for

certifying wild poliovirus eradication, built upon decades of surveillance system development and validation. The Commission's confidence in certification decisions stems from multiple surveillance modalities that have proven their effectiveness through successful certification of types 2 and 3 wild poliovirus.

The eradication of type 2 wild poliovirus, certified in September 2015 despite last detection in 1999, and type 3 wild poliovirus, certified in October 2019 following final detection in 2016, demonstrates the Commission's ability to make definitive eradication determinations based on available evidence. These achievements occurred with primarily acute flaccid paralysis surveillance for type 2 wild poliovirus and limited environmental surveillance for type 3 wild poliovirus, establishing precedent for certification confidence levels. In neither case has there been detection of wild poliovirus types despite an increasing quality of surveillance.

Current surveillance capabilities exceed those available during previous eradication certifications. The expansion of environmental surveillance, particularly in high-risk areas, provides enhanced detection sensitivity



while maintaining the acute flaccid paralysis surveillance foundation. The Commission's ability to consistently identify vaccine-derived polioviruses in challenging environments confirms that surveillance systems would detect wild poliovirus circulation if present.

The Global Certification Commission recognises that surveillance quality in Pakistan already approaches certification standard, indicating technical readiness for eradication verification should transmission interruption occur. Afghanistan similarly maintains robust surveillance capabilities despite operational constraints, suggesting that detection sensitivity would support certification processes. However, surveillance gaps persist in other jurisdictions, particularly regarding subnational coverage in countries with declining immunisation system performance, which could complicate global certification processes even after achievement in endemic countries.

VACCINE-DERIVED POLIOVIRUS CERTIFICATION CHALLENGES

The Commission has fundamentally reconsidered certification approaches for vaccine-derived polioviruses, recognising that current tools are insufficient for definitive eradication verification. The shift from eradication to elimination certification acknowledges technical limitations while maintaining public health protection objectives. This strategic adaptation reflects an understanding that vaccine-derived poliovirus circulation presents different epidemiological patterns and detection challenges compared to wild poliovirus.

Immunodeficient vaccine-derived polioviruses are an indefinite certification challenge due to fundamental uncertainties about patient identification, excretion duration, and clinical management options. The Commission acknowledges that unknown numbers of immunocompromised individuals may excrete polioviruses for extended periods, creating persistent reintroduction risks. The absence of reliable methods for identifying all immunocompromised individuals or predicting excretion patterns creates inherent limitations in eradication verification.

The pathway from elimination to eradication certification depends fundamentally on bivalent oral poliovirus vaccine cessation, as a prerequisite for definitive eradication verification. Until such cessation occurs, ongoing vaccine-derived poliovirus circulation potentially prevents progression beyond

elimination certification. The Commission recognises that cessation decisions require careful balancing of risks, including potential wild poliovirus importation threats and population immunity maintenance needs.

The potential for addressing vaccine-derived poliovirus transmission independently of wild poliovirus circulation offers strategic flexibility and potentially achievable intermediate objectives.

Given the upheavals in the global health and disease control landscape, the regional certification commissions have to assess risks to eradication in this new context. Previous assumptions about vaccines, surveillance quality, funding, and human resources may not hold and make last year's progress less reliable for guiding the coming year.

CONTAINMENT STRATEGY AND RISK MANAGEMENT

The Commission has identified three potential approaches to containment certification timing relative to wild poliovirus eradication verification. The preferred approach involves completing containment certification before eradication certification, reducing risks associated with delayed containment implementation. Current progress demonstrates that containment certification before eradication certification is a realistic possibility given extending eradication timelines and progress in containment certification.

The resolution of previous laboratory containment difficulties shows system effectiveness and adaptability. Progressive expansion of containment requirements to include all poliovirus types ensures comprehensive risk management. Laboratory participation in containment

schemes shows consistent improvement, with all but one country worldwide now participating in appropriate frameworks.

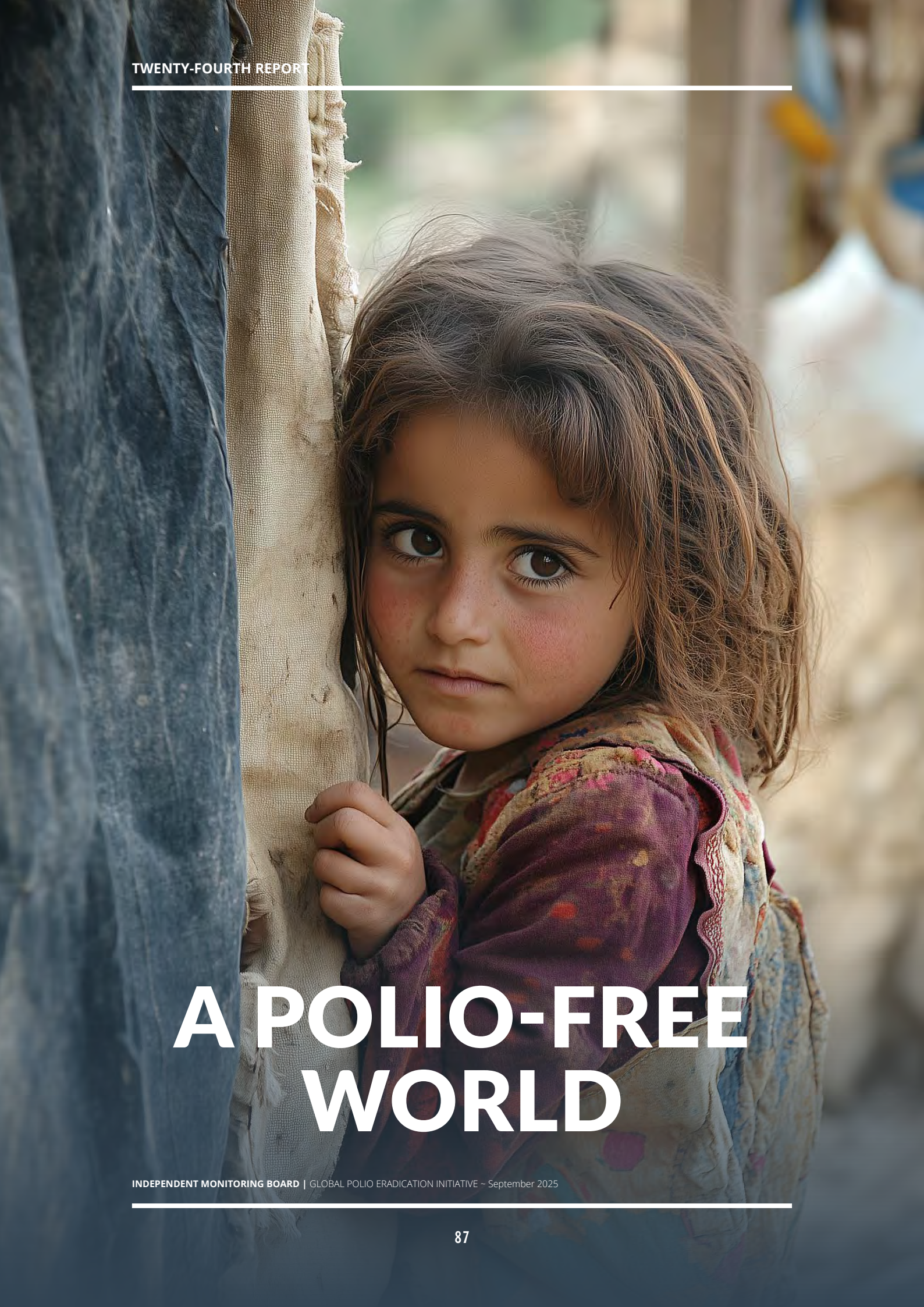
The potential need for alternative approaches to complete eradication necessitates containment strategy development that could manage ongoing circulation while providing population protection. Containment approaches might prove more realistic than eradication achievement while still providing significant public health benefits. The Commission would need to develop new verification criteria for containment strategies distinct from eradication certification.

STRATEGIC BOUNDARIES OF THE CERTIFICATION COMMISSION

The distinction between technical certification capability and operational eradication achievement highlights the gap between surveillance readiness and programmatic performance. While certification could proceed rapidly following transmission interruption, achieving that interruption remains the critical limiting factor.

The Commission clearly delineates technical certification responsibilities from broader strategic decision-making, emphasising that certification capability depends on surveillance quality rather than operational programme assessment. The Commission is firm in saying that questions regarding programme capability to achieve transmission interruption fall outside its purview.

The Commission maintains a commitment to evidence-based certification decisions regardless of external pressures or timeline expectations. Certification criteria application remains independent of strategic objectives or political considerations, ensuring technical integrity of verification processes. However, certification timing depends entirely on achieving actual transmission interruption rather than arbitrary deadline adherence.



A POLIO-FREE WORLD

INDEPENDENT MONITORING BOARD | GLOBAL POLIO ERADICATION INITIATIVE ~ September 2025

A POLIO-FREE WORLD

As the Global Polio Eradication Initiative approaches what many hope will be its concluding phase, the imperative to secure and sustain a polio-free world has never been more urgent or complex. The recently published strategy *"Sustaining a Polio-free World: A strategy for long-term success" (Draft v3.1)* represents a comprehensive revision of the original 2018 Post-Certification Strategy, reflecting both the evolving epidemiological landscape and the harsh lessons learned from nearly a decade of persistent transmission challenges.

This updated strategy emerges against a backdrop of mounting uncertainty. The geopolitical and financial tremors reverberating through global health threaten not merely the immediate stability of the eradication programme, but the very foundations upon which post-certification planning must rest. The strategy is, fundamentally, a technical blueprint—yet its ultimate success hinges entirely upon the willingness and capacity of an increasingly fragmented constellation of global and national actors to assume responsibility for its implementation.

A PLAN BORN OF EXTENSIVE CONSULTATION

The development of this revised strategy has been notably comprehensive, drawing upon input from over 800 stakeholders spanning the traditional polio community and extending into immunisation, emergency response, and health systems strengthening domains. This broad engagement reflects a growing recognition that sustaining polio eradication cannot remain the exclusive province of polio specialists but must be woven into the fabric of routine health functions.

The strategy's narrative explicitly acknowledges a four-phase roadmap: defining the "what" (technical strategy), determining the "how" (implementation framework), identifying the "who" (governance and funding arrangements), and establishing robust monitoring and evaluation mechanisms. Yet, as the IMB has observed repeatedly, it is precisely in the transition from technical clarity to operational reality that the greatest risks lie.

TECHNICAL ARCHITECTURE AND RISK FRAMEWORK

The strategy's technical architecture is organised around three foundational goals:

- Protecting populations through synchronised bivalent oral polio vaccine cessation and sustained immunisation with inactivated polio vaccine;
- Detecting and responding to poliovirus through sensitive surveillance systems;
- Containing polioviruses in laboratories and manufacturing facilities.

Each goal addresses distinct epidemiological risks that will evolve across three temporal phases:

- Pre-cessation to immediate post-cessation;
- Intermediate post-cessation;
- Longer-term post-certification.

The strategy's risk analysis describes sobering realities.

Vaccine-derived poliovirus emergence will be the primary threat in the immediate post-cessation period, with consequences accelerating as population immunity wanes and birth cohorts naïve to oral polio vaccine accumulate.

In the intermediate phase, the spectre of immunodeficiency-associated vaccine-derived poliovirus spreading within communities looms larger, while the longer-term period brings heightened risks from laboratory or manufacturing facility breaches and poliovirus escapes.

IMPLEMENTATION CHALLENGES AND RESOURCE REQUIREMENTS

The strategy's cost projections of $6.9 to $8.7 billion for the strategic period show the magnitude of sustained investment required. The investments will need to be higher in the early years, before tapering off. These estimates highlight critical cost drivers: inactivated and hexavalent vaccine procurement, robust surveillance systems, vaccine stockpiles, and rapid response capabilities. In the current resource constrained environment, it is unclear how countries can pick up this level of funding. Without a recognised global programme entity, it is difficult for donors to provide ongoing funding support. It is hard to see how a new programme could be launched, or donor resources spread, over multiple programmes if responsibilities are fragmented.

THE GOVERNANCE CONUNDRUM

Perhaps the most troubling aspect of the strategy is its treatment of future governance arrangements. While acknowledging that governance decisions lie beyond the document's scope, the strategy presents four illustrative models—centralised structure, existing global mechanisms, coordinated partner oversight, and integrated regional oversight—without adequate analysis of their feasibility or likelihood of success.

The strategy's discussion of "mandatory elements" for future governance structures emphasises member state accountability and technical oversight through existing mechanisms such as the International Health Regulations and World Health Assembly reporting. However, there is a fundamental disconnect between these aspirational accountability frameworks and the demonstrated capacity of countries to deliver essential polio functions independently.

The concept of an "evolving governance model" that shifts from centralised to decentralised approaches over time may sound appealing in principle, but the strategy provides insufficient detail about transition triggers, decision-making processes, or accountability mechanisms during periods of change. The lessons from smallpox eradication, while instructive, may have limited applicability given the vastly different epidemiological and operational contexts.

COUNTRY READINESS AND TRANSITION REALITIES

The strategy's approach to country readiness and polio transition support reveals both a realistic assessment and concerning gaps. The acknowledgement that some countries will require "time-limited and sustainable financial and technical support" reflects hard-won experience from ongoing polio transition processes. The criteria for determining support needs—spanning polio dependency, immunisation coverage, emergency contexts, and health system capacity—provide a useful framework for prioritising assistance.

Does the strategy adequately address the operational complexities of transition in fragile and conflict-affected settings? These contexts, which represent the highest risk for polio re-emergence, often lack the basic infrastructure and governance capacity necessary to assume responsibility for polio essential functions. The strategy seems to be relying too much on existing health systems and accountability mechanisms. They may prove inadequate in settings where such systems are themselves fragile or compromised.

The three-year "watch list" mechanism for countries exiting polio transition support appears insufficient given the extended timeframes required for genuine health system strengthening.

CRITICAL GAPS AND UNANSWERED QUESTIONS

Several critical questions remain inadequately addressed in the strategy.

First, what contingency arrangements exist if the current goals for type 1 wild poliovirus eradication and circulating type 2 vaccine-derived poliovirus elimination are not achieved within anticipated timeframes? The strategy provides limited guidance on how delays or setbacks in eradication progress would affect post-certification planning and resource requirements.

Second, how will essential functions be maintained during the transition period between current GPEI structures and whatever governance arrangements eventually emerge? The strategy's three-year overlap period may prove insufficient for establishing new accountability mechanisms and ensuring seamless continuity of critical functions.

Third, what mechanisms will ensure adequate representation of fragile and high-risk countries in future governance structures? The strategy's emphasis on country ownership and integrated approaches may inadvertently marginalise the very contexts where external support remains most critical.

The strategy must surely address, more explicitly, financing mechanisms and sustainability pathways, moving beyond aspirational statements about country ownership to concrete proposals for resource mobilisation and allocation. This should include realistic assessments of domestic financing capacity and innovative approaches to shared funding responsibilities. Understanding which components of polio eradication should be financed globally for economies of scale, quality, comparability or need for foreign exchange, is also important for budget planning. Vaccine costs, laboratory accreditation and consumables are a few of the commodities that the strategy needs to consider.

Governance planning must describe, with greater specificity, transition pathways, accountability mechanisms, and decision-making processes. The current level of ambiguity about future structures creates unnecessary uncertainty and may undermine stakeholder confidence in the strategy's feasibility.

The strategy should definitely strengthen its treatment of high-risk and fragile contexts, recognising that these settings may require exceptional arrangements that deviate from standard country ownership models.

The strategy's contingency planning for various eradication scenarios must be enhanced, including detailed analysis of how delays or setbacks would affect post-certification requirements and resource needs.

ALIGNMENT WITH GLOBAL HEALTH PRIORITIES

The Lusaka Agenda, launched in December 2023, is a consensus-driven roadmap for transforming how global health initiatives operate, emphasising efficiency, equity, and sustainability. It was developed through extensive multi-stakeholder engagement and is now referenced in WHO's General Programme of Work, signalling its importance at the highest levels of global health policy. The agenda's five key shifts—strengthening primary health care, catalysing domestically-financed health services, promoting equity, achieving operational coherence, and coordinating research and development—are seen as essential for the future of global health, including polio eradication and post-certification action.

The Lusaka Agenda has been cited in polio discussions as a framework that should inform the integration of polio

essential functions into the wider global health architecture. The Agenda's focus on country ownership, domestically-financed health systems, and alignment of external support with national plans is directly relevant to the post-certification strategy's goal of mainstreaming polio activities into broader health systems and ensuring their sustainability after the GPEI partnership dissolves.

The Lusaka Agenda is particularly pertinent given current funding constraints and the withdrawal or reduction of support from major donors such as the US government. It calls for innovative approaches to health financing, joint oversight, and transparency. All are critical for ensuring that polio essential functions—such as surveillance, outbreak response, and containment—remain robust and well-supported in a changing global health environment.

The Lusaka Agenda's emphasis on equity and strengthening health systems is especially important for fragile and high-risk countries, which are likely to face the greatest challenges in maintaining polio essential functions after certification. The Agenda's roadmap for implementation in Africa, for example, highlights the need for strong government leadership and updated public financial management systems to facilitate the alignment of external resources with national priorities.

GLOBAL STRATEGIC RESPONSE TO GEOPOLITICAL SHOCKWAVES

INDEPENDENT MONITORING BOARD | GLOBAL POLIO ERADICATION INITIATIVE ~ September 2025

GLOBAL STRATEGIC RESPONSE TO GEOPOLITICAL SHOCKWAVES

The immediate impact of United States disengagement from the World Health Organization (WHO) is the most significant single funding disruption in Global Polio Eradication Initiative (GPEI) history. The annual appropriation from the United States Congress of $265 million for polio eradication, with approximately half flowing through the Financial Resource Requirements (FRR) managed by the polio partnership and half operating outside direct GPEI control (non-FRR), creates both immediate operational gaps and longer-term strategic uncertainties.

The loss of United States government support in areas such as security, food aid, energy, education, economic growth and humanitarian assistance will require countries to shift domestic funds into these areas as well as into the health sector.

The WHO is facing these critical events as it navigates one of the most challenging periods in its institutional history. The withdrawal of United States funding, combined with declining official development assistance from other donor nations has created a fiscal environment demanding immediate and decisive action.

Facing a substantial funding shortfall of over $500 million for the upcoming biennium, WHO has embarked on an unprecedented restructuring plan that will fundamentally reshape its operations, workforce, and global health delivery capabilities.

The restructuring extends beyond mere numerical reductions. The WHO is implementing what its officials describe as a "major structural realignment" guided by an extensive analysis of organisational priorities. This process involves not just downsizing but reimagining how the organisation can most effectively fulfil its core functions with reduced resources. Maintaining emergency response capabilities while managing overall budget reductions is one of the most serious concerns in the current situation.

The WHO restructuring is happening against a backdrop of declining official development assistance from traditional donor member states and increasing health challenges in many low-income countries. WHO's leadership has emphasised that these countries and their populations "need a strong WHO now more than ever."

It is not yet clear what impact all these changes will have for WHO's role in ongoing polio eradication and polio transition.

> ***"Will the global architecture for disease eradication survive the seismic shifts in geopolitics that define this moment?"***

DISMANTLING OF USAID

The closure of the US Agency for International Development (USAID) is a further major disruption. It has resulted in the termination of the entire international workforce, affecting thousands of foreign service officers, contractors, and local employees across more than 100 countries. For polio specifically, this includes the elimination of a grant to WHO that provided approximately $40 million per year for polio activities. A $131 million grant to UNICEF specifically for polio and immunisation was cancelled, but a second grant to UNICEF is still active and it is unclear at the time of publishing this report if polio funds will be released. Funding for the CORE Group Partners Project is still active though it has been transferred to the State Department (as has the UNICEF award).

Over nearly three decades, USAID has been a pillar of the GPEI, offering not only substantial financial investment totalling $1.8 billion but also shaping strategy, driving innovations, and strengthening global health systems. As USAID concluded its polio-focused programming, it marked the close of a major era of bilateral donor leadership in global disease eradication.

USAID was the main polio donor in the Americas ultimately providing over $50 million from 1985 – 1994. Between 1996 and 2024, USAID contributed over $600 million to polio eradication through WHO, and an additional $38 million to support WHO's broader immunisation and health security work.

In parallel, USAID allocated almost $428 million to UNICEF for polio and immunisation programmes. Since 1998, USAID provided $219.5 million for polio and $34 million for disease outbreaks and global health security to the Core Group Partners Project.

In addition to these three main implementing organisations, small, but strategic, activities were contributed by USAID central and bilateral immunisation projects. Together, these investments reached 47 countries, with concentrated and diverse activities in sub-Saharan Africa, South Asia, and conflict-affected regions.

Funding was not dispersed uniformly but tailored to need and context. Pakistan, Afghanistan, Nigeria, and the Democratic Republic of the Congo received the highest levels of support, reflecting their central role in global polio eradication. Countries experiencing complex emergencies—such as Somalia, Yemen, Chad, and South Sudan—also received targeted investment to contain polio outbreaks, preserve gains, and protect vulnerable populations.

A significant portion of USAID funding was used to build the foundation for real-time detection and response. The largest portion of USAID's funding was for active facility-based case detection for acute flaccid paralysis (AFP) in more than 25 countries in an intentional effort to support long-term disease surveillance beyond eradication.

Surveillance support expanded to include developing one of the most extensive environmental surveillance networks globally, with more than 1,100 sites in 78 countries. It became the earliest warning system for detecting poliovirus in circulation, enabling campaigns to be swiftly deployed even before clinical cases emerged.

USAID's impact extended beyond infrastructure. Through WHO, it financed the training and deployment of thousands of frontline health workers. These included surveillance officers, campaign coordinators, social mobilisers, data analysts, and emergency response managers. Many were drawn from local communities and trained in active case search and reporting, outbreak response, field logistics, and community engagement. In time, these cadres were absorbed into national health systems, serving in emergency operations centres, ministries of health, and international health bodies, contributing to a legacy of capacity building.

USAID recognised the critical role of community engagement and social mobilisation, ensuring that campaign activity was evidence-based and supported reaching every child.

Funding for this work through UNICEF highlighted that polio eradication is not just a technical endeavour but requires addressing social, economic and political dimensions.

Parallel work through UNICEF focused on social and behavioural interventions.

Logistics and vaccine delivery systems were another cornerstone of USAID's support. Funding enabled vaccine procurement and delivery to remote communities, supported cold chain systems, and helped develop sophisticated microplanning techniques. Geographic Information System (GIS) technology, supported by USAID, was used to map hard-to-reach populations and improve the precision of immunisation campaigns.

In the laboratory domain, USAID supported the expansion and modernisation of the Global Polio Laboratory Network (GPLN), which now comprises 145 laboratories globally.

What stands out in USAID's approach is its focus on sustainability and integration. Rather than relying solely on vertical, disease-specific interventions, the agency emphasised embedding polio eradication capacities within broader national systems. It prioritised long-term training, local workforce development, and integration with routine immunisation services. Its exit thus leaves behind not only infrastructure but enduring capability.

The full ramifications of USAID's dismantling on the prospects for polio eradication and securing a polio-free world have not yet been fully scoped and urgently need to be.

UNICEF'S LOSS OF CAPACITY AND CAPABILITY

In response to the funding crisis, UNICEF has initiated comprehensive organisational restructuring through the Future Focus Initiative that fundamentally alters the agency's operational model and technical assistance delivery

mechanisms. The restructuring includes a 25% reduction in core budgets across headquarters and regional offices, elimination of approximately 14% of organisational positions, and the relocation of 70% of headquarters staff to lower-cost duty stations. These measures represent the most significant organisational transformation in UNICEF's recent history and carry major implications for polio programme support capacity.

The consolidation of technical assistance delivery into four regional Centres of Excellence—replacing the previous seven-office structure—creates particular concerns for polio programme implementation. The proposed Centres of Excellence model aims to provide high-quality, tailored technical assistance globally, but the transition period and reduced geographical proximity to field operations may compromise response times and local contextual understanding crucial for effective immunisation programme management.

It is not clear yet how UNICEF's funding constraints will directly threaten the agency's ability to fulfil its core accountabilities within the Global Polio Eradication Initiative, particularly in social and behaviour change programming and vaccine and cold chain management. The agency's role in developing and implementing social mobilisation strategies, community engagement activities, and demand creation for vaccination services requires sustained financial resources and specialised technical capacity that the current restructuring places at risk.

CDC'S DIMINISHED ROLE IN GLOBAL HEALTH

The US Centers for Disease Control and Prevention (CDC) based in Atlanta faces unprecedented limitations to its international health mandate following comprehensive budget cuts and organisational restrictions imposed by the United States administration.

CDC still has its appropriation for polio through the end of September 2025, but without being able to allocate to the World Health Organization anymore. It is not yet clear how this money will be used to support polio eradication.

These changes represent a fundamental reorientation that appears to dramatically curtail CDC's capacity to support global health initiatives.

The proposed fiscal year 2026 budget eliminates the CDC's Global Health Center as a functioning entity, cutting $230 million in global immunisation programming—$180 million of which directly supported polio eradication activities.

The broader CDC budget faces a reduction exceeding 50%, dropping from approximately $9 billion to $4.3 billion, with workforce reductions of 43% eliminating over 5,000 positions.

Beyond financial cuts, operational constraints have severely impacted CDC's global health functionality. The United States withdrawal from the World Health Organization has severed collaborative arrangements that were essential for polio surveillance and outbreak response. CDC personnel have been withdrawn from WHO offices, and the GPEI seems to have lost access to CDC's specialised poliovirus laboratory network, which serves as the primary facility for poliovirus testing and characterisation worldwide.

The restructuring directly threatens the infrastructure supporting global polio eradication. The GPEI faces a $133 million funding shortfall from United States sources in 2025 alone, with CDC's technical contributions representing approximately 21% of the programme's historical budget. Beyond financial support, CDC's withdrawal eliminates critical technical expertise in surveillance methodology, laboratory diagnostics, and outbreak investigation protocols that have been central to polio eradication strategies.

The loss extends to personnel and institutional knowledge. CDC's Global Immunization Division, one of two within the Global Health Center to survive reorganisation, now operates with reduced capacity and unclear mandate boundaries. Field operations in endemic countries—Afghanistan and Pakistan—face particular vulnerability, as CDC technical assistance has been instrumental in maintaining surveillance quality in challenging security environments.

The Secretary for Health and Human Services has replaced CDC's Advisory Committee on Immunization Practices with members lacking vaccine expertise. This signals a fundamental departure that could further limit CDC's international collaborative capacity.

These changes force the GPEI to manage with reduced technical support from a key founding partner. The loss of CDC's laboratory network and surveillance expertise creates particular vulnerabilities for detecting and responding to outbreaks in non-endemic countries.

The prohibition on communication between CDC and WHO personnel creates operational complications that extend beyond immediate

programme implementation to affect outbreak response coordination and technical consultation processes. During previous health emergencies, international partnerships enabled rapid deployment of specialised expertise across multiple countries and organisations. The current restrictions eliminate these coordination mechanisms precisely when global health threats require enhanced, rather than reduced, cooperation.

Few other countries possess the technical capacity to compensate for reduced United States engagement in global health programming. While some European countries maintain specialised capabilities, the scale and scope of technical assistance previously provided by CDC cannot be rapidly replicated through alternative arrangements. This capacity gap affects not only polio programming but broader global health security initiatives that depend on technical cooperation for effective implementation.

The situation is not static and further political developments came well after the discussions with CDC representatives at the IMB meeting and as the IMB report was being finalised.

The agency had already endured considerable leadership instability throughout 2025. Yet, in late August 2025, another dramatic episode occurred when CDC Director, Dr. Susan Monarez was dismissed, after just one month in office. Monarez's removal triggered an immediate cascade of senior resignations.

This leadership exodus reflected deeper institutional conflicts over scientific integrity. At the time of publication of the IMB report, the Health Secretary's deputy was appointed as acting director further reflecting the administration's departure from traditional scientific leadership.

MITIGATION STRATEGIES

Despite the magnitude of funding losses, the 2025 Polio Programme budget of slightly over $1.1 billion remains achievable through multiple compensatory mechanisms. Projected resources of nearly $1 billion, even after United States withdrawal, reflect successful emergency polio resource mobilisation and strategic financial management.

It is 2026, when the greatest impact will be felt. Polio Programme planning anticipates funding reductions of 20-40% for 2026, requiring transition from a $1 billion to $600-800 million annual budget. This reduction necessitates fundamental reconsideration of programmatic scope, geographical priorities, and operational approaches rather than marginal adjustments to existing activities.

Potential for continued US funding through alternative channels remains unclear, with Congressional appropriations possibly continuing through different distribution mechanisms. However, relying on such possibilities could prove strategically dangerous without concrete commitments.

The GPEI financial crisis reflects broader challenges facing global health initiatives amid shifting geopolitical priorities and domestic fiscal constraints. Traditional donor fatigue combines with emerging economy reluctance to assume proportional financial responsibilities, creating systemic funding gaps across multiple health programmes.

Unexpected contributions have proven crucial in addressing immediate gaps. The United Arab Emirates provided over $20 million in new funding, while philanthropic partners mobilised by the Gates Foundation exceeded anticipated contribution levels. New funding sources also demonstrate evolving global commitment patterns despite traditional donor retrenchment. The Kingdom of Saudi Arabia's five-year, $500 million, commitment is one of the largest single contributions in recent Polio Programme history, signalling sustained engagement from emerging economies.

The European Investment Bank's first-time contribution of €500 million over five years in 2024 established precedent for institutional engagement beyond traditional bilateral donors. These new sources provide both immediate financial relief and potential models for diversified funding strategies.

Uncertainty surrounds established sovereign donors including Germany and the United Kingdom, whose future support levels remain unclear amid domestic fiscal constraints. France's recommitment following extended absence has not yet translated into actual funding disbursement, while government instability creates additional uncertainty about future contributions.

Programmatic cost analysis reveals that personnel reductions and travel restrictions, while necessary for prudent management, represent marginal savings relative to overall budget requirements.

Oral polio vaccination rounds are the largest cost component, with individual campaigns in Pakistan costing $10-15 million and employing several hundred thousand frontline workers. Afghanistan campaigns cost approximately half this amount but remain significant expenses when conducted four to five times annually. Shockingly, the need for outbreak response has emerged as the fastest-growing budget category, surpassing endemic country costs in recent years. Annual outbreak response budgets reached nearly $500 million in 2024 and exceeded $400 million by mid-2025, representing more than one-third of total polio programmatic costs. Campaign quality is a key factor in how many outbreak rounds are needed to stop transmission. Outbreak response guidelines call for two to three rounds, however if they are done with poor quality, more rounds are needed, and the costs escalate. This has been a serious concern in Nigeria where

multiple past vaccination rounds have been of low quality yet funding has continued to flow into the country. It raises a wider point about accountability and performance that is addressed in the IMB's recommendations.

The balance between preventive campaigns and outbreak response represents a critical strategic choice with huge cost implications. Preventive activities have historically received lower priority when resources become constrained, despite potential cost-effectiveness advantages of early intervention.

Where to strike this balance has polarised opinion as there have been repeated failures of the Polio Programme to stop poliovirus transmission. The GPEI has majored on an operating model based on the concept of "consequential geographies"—focusing resources on locations that are perceived to matter most for overall programme success. Despite strategic recognition of this principle, the programme continues responding comprehensively to detections across all affected areas, potentially diluting impact in highest-priority locations.

Many observers and the IMB have advocated for more preventive campaigns to create a resilient immunity level.

Doubling down on the consequential geography approach would require narrowing the geographic focus to transmission engines in Afghanistan, Pakistan, and key African countries in order to optimise resource utilisation while accepting increased risks in lower-priority areas. This approach requires difficult political decisions about resource allocation and risk acceptance, as well as continuing to hold to the belief that it is more likely to stop transmission. Analysis of whether preventive investments reduce longer-term costs through outbreak prevention could inform more strategic resource allocation. However, such analyses have not been systematically conducted, limiting evidence-based decision-making about optimal prevention-response balance.

DEVELOPMENTS IN POLIO SCIENCE

DEVELOPMENTS IN POLIO SCIENCE

The IMB dedicated a session at its July 2025 meeting to polio science. There has been both a remarkable evolution of scientific understanding since the Global Polio Eradication Initiative (GPEI) began in 1988 and an urgent need to accelerate the translation of research innovations into field implementation. Whilst major advances have been made in vaccine development, diagnostic capabilities, and epidemiological understanding, critical gaps remain between scientific breakthroughs and their deployment in the countries where they are most needed.

There are three fundamental tensions:

- The balance between developing new tools versus optimising existing ones;
- The challenge of maintaining rigorous scientific standards while responding with emergency-level urgency;
- The imperative to integrate cutting-edge innovations with practical field realities in resource-constrained settings.

THE EVOLUTION OF POLIO SCIENCE

In 1988, the scientific community believed that eradicating three wild poliovirus serotypes using trivalent oral polio vaccine would suffice, with inactivated polio vaccine playing no role in eradication. The focus was exclusively on children under five years of age, and acute flaccid paralysis surveillance was considered the only necessary detection method.

Today's reality is markedly more complex. Beyond wild polioviruses, the Polio Programme must now contend with circulating vaccine-derived polioviruses across all three serotypes—a phenomenon first detected in Hispaniola in 2001.

The vaccine toolkit has expanded dramatically beyond the trivalent oral polio vaccine to include its bivalent form, novel oral polio vaccines (with enhanced genetic stability), and various inactivated polio vaccine formulations.

The target population now encompasses older children and young adults who play crucial roles in transmission, particularly in endemic areas and during outbreaks.

Surveillance systems have evolved to include environmental monitoring, which often detects polioviruses before clinical cases appear, and specialised surveillance for poliovirus excretion among individuals with primary immunodeficiencies—a risk category unknown in 1988. The diagnostic arsenal now features faster laboratory methods and direct detection capabilities that can dramatically reduce confirmation timelines.

The current research landscape spans over 200 clinical trials coordinated by the GPEI, generating approximately two dozen peer-reviewed publications annually, primarily in high-impact journals. This extensive portfolio addresses three critical areas:

- Improved vaccine tools;
- Enhanced detection methods;
- Evidence-based policy optimisation.

Research investments are approximately one per cent of the Polio Programme's annual budget. This return on investment has proven substantial. Quantifiable savings include those from fractional inactivated polio vaccine implementation and technology transfer projects that have created multiple pre-qualified manufacturers, significantly reducing costs for low-income countries. Today, over 40 countries use Sabin inactivated polio vaccine in routine immunisation, primarily in Africa and the Americas.

VACCINE INNOVATION

The development and deployment of novel oral polio vaccine type 2 is perhaps the most compelling example of rapid research translation in the Polio Programme's history. Nearly two billion doses have been administered across 43 countries, demonstrating genetic stability that has resulted in a 95-99% reduction in vaccine-associated paralytic polio and a 75-80% reduction in vaccine-derived poliovirus seeding risk.

Critically, field data suggests that novel oral polio vaccine type 2 has achieved a basic reproduction number for outbreak seeding of less than 1, compared to 1.4 with conventional Sabin oral polio vaccine. While not a zero-risk vaccine, this represents a big programmatic advantage in breaking the cycle of outbreak response that itself seeds new emergences.

The pipeline for novel oral polio vaccine type 1 and novel oral polio vaccine type 3 is advancing through Phase 2 clinical trials, with initial immunogenicity challenges in infant populations addressed through process development and improved viral titres. Under an emergency use listing pathway, these tools could potentially be available by late 2028, with traditional pre-qualification extending timelines to 2030-2031.

INACTIVATED VACCINE DEVELOPMENTS

The inactivated polio vaccine development landscape addresses multiple objectives simultaneously: improving safety through non-infectious production methods, enhancing programmatic efficiency through combination vaccines, and reducing costs through innovative delivery mechanisms.

S19-based vaccines are a promising approach to safer inactivated polio vaccine production. These hyper-attenuated strains are temperature-sensitive and do not replicate in the human body, significantly reducing containment risks in the post-eradication era. Virus-like particle (VLP) based vaccines offer even greater safety, as they contain no infectious material while maintaining the capsid protein signatures necessary for immune response.

The integration of inactivated polio vaccine into hexavalent vaccines containing whole-cell pertussis has shown particular promise. The Serum Institute of India achieved pre-qualification for such a product in 2024, with the Strategic Advisory Group of Experts (SAGE) reducing the minimum dose requirement from four to three doses in March 2025, enhancing affordability and delivery efficiency.

A DREAM SOLUTION: MUCOSAL IMMUNITY WITHOUT LIVE VIRUS

The search for a vaccine that provides mucosal immunity without replication risks continues. Research into adjuvants such as double mutant heat-labile toxin (DMLT) for inactivated polio vaccine has shown some promise in inducing mucosal responses, though the programmatic significance remains unclear. Alternative approaches include controlled or pulsatile release formulations and microarray patch delivery systems, though these remain several years from potential deployment.

DIAGNOSTIC REVOLUTION: ACCELERATING DETECTION IN AN EMERGENCY CONTEXT

The speed at which poliovirus can be detected in surveillance samples represents a critical bottleneck in global eradication. Current laboratory procedures, while highly reliable, can require weeks to deliver definitive results—time that proves costly when rapid outbreak response could prevent wider transmission. While incremental improvements to existing methods are valuable, the development of revolutionary direct detection methods offers the greatest potential to dramatically reduce these delays, but implementation faces significant technical and operational hurdles that must be carefully navigated.

The current detection challenge

The established World Health Organization algorithm for poliovirus detection follows a methodical sequence that prioritises accuracy over speed. When surveillance samples arrive at laboratories, they first undergo virus isolation using cell cultures, a process that can take days as technicians wait for evidence of viral growth. Samples showing cytopathic effects proceed to intratypic differentiation by real-time polymerase chain reaction (PCR) testing, followed by nucleotide sequencing of the major viral structural (VP1) region to definitively identify whether detected poliovirus is a wild or vaccine-derived strain.

Each step operates under defined target timelines against which laboratories are routinely evaluated, yet the cumulative effect can result in substantial delays. Samples that ultimately test positive for poliovirus may progress relatively quickly through the algorithm since they advance to subsequent steps as soon as viral growth becomes apparent. However, samples that prove negative must complete the entire isolation procedure, including additional blind passage steps to ensure no poliovirus is missed.

The total timeframe from sample arrival to VP1 sequencing outcome varies considerably depending on multiple factors. Laboratory workload fluctuates seasonally and geographically, while technical performance varies among facilities despite standardised protocols. Complex samples containing viral mixtures require extended analysis, and many specimens must be shipped between laboratories when local facilities lack complete testing capabilities. These shipping requirements alone can add days or weeks to the process, particularly when international borders are involved.

Several approaches can improve

timeliness within the current system. Enabling laboratories to perform all detection steps locally eliminates shipping delays while reducing the risk of sample degradation during transport. Strengthening technical capacity and quality assurance systems ensures that each step proceeds efficiently without compromising accuracy. The Global Polio Laboratory Network maintains robust quality assurance programmes specifically designed to monitor performance and uphold result reliability across its international network.

THE DIRECT DETECTION REVOLUTION

The most promising approach to accelerating diagnostic results involves eliminating the most time-consuming steps from the current algorithm entirely. Two revolutionary molecular direct detection methods are currently being developed and piloted within the Global Polio Laboratory Network, each offering distinct advantages in streamlining the detection process.

The first method, known as DD-ITD, bypasses the traditional virus isolation step entirely by applying intratypic differentiation directly to original samples, followed by VP1 polymerase chain reaction (PCR) and Sanger sequencing. Developed by CDC's polio laboratory, this approach eliminates the days required for viral cultivation while maintaining the established identification protocols that laboratories are familiar with.

The second method, DDNS or Direct Detection by Nanopore Sequencing, represents an even more radical departure from current practice. This approach eliminates both virus isolation and intratypic differentiation steps, instead relying on direct VP1 polymerase chain reaction (PCR) followed immediately by advanced sequencing technologies. Developed by the Polio Sequencing Consortium, this method offers the potential for the most dramatic time savings.

Both methods hold the promise of delivering results within 10 days of sample arrival at laboratories, compared to current timeframes that can extend to several weeks. This acceleration could prove transformational for outbreak response, enabling vaccination campaigns to be mounted while transmission chains remain limited rather than after they have become established across wider populations.

However, the introduction of these methods requires thorough validation to ensure they do not compromise the sensitivity or specificity that makes current detection methods so reliable. The stakes are too high to risk missing poliovirus circulation due to inadequate testing procedures, making comprehensive validation an essential prerequisite for implementation.

Validation requirements and standards

The validation process for these new detection methods reflects the stringent standards required for global public health surveillance. The process demands participation from at least 12 Global Polio Laboratory Network facilities distributed across three WHO regions, ensuring that validation occurs under diverse operational conditions and technical environments.

Testing requirements are equally rigorous, involving approximately 540 poliovirus isolates representing the full spectrum of viral variants that surveillance systems might encounter. This figure translates to roughly 11,000 surveillance samples when accounting for the typical 5% positivity rate observed in routine surveillance activities.

The validation criteria follow guidelines established in Global Polio Laboratory Network *Guidance Paper No. 7*, which sets exacting standards for introducing new diagnostic methods. Most critically, the new methods must demonstrate non-inferiority to the existing WHO algorithm, meaning they must detect poliovirus with at least equivalent sensitivity and specificity under operational conditions.

Robust quality assurance and quality control systems must be established specifically for the new methods, ensuring that performance can be monitored and maintained across the global laboratory network. Long-term method sustainability requires verification that reagent supplies will remain available, technical support can be provided consistently, and costs remain manageable within existing laboratory budgets.

These validation activities are inherently time-consuming precisely because the standards are so demanding. Public health safety requires absolute confidence that new methods will not create surveillance gaps that could allow undetected poliovirus circulation.

Delivery constraints and adaptive approaches

The path toward full implementation of direct detection methods faces several interconnected challenges that require careful coordination to resolve. The lengthy validation process itself presents the first major hurdle, as achieving perfect concordance with current algorithms proves both time-consuming and technically

demanding. However, this challenge might be addressed through phased implementation approaches that evaluate the programmatic relevance of any discordant results rather than requiring perfect agreement before any deployment begins.

Specifically, specimens could be split and subjected to both direct detection and conventional methods. As direct detection can be both more and less sensitive than conventional methods, this would optimise detection and generate knowledge immediately, avoiding further delays to the deployment of this potentially transformational technology.

Concerns regarding performance indicators represent another significant challenge, as laboratory networks worry that introducing new methods might temporarily disrupt established reporting metrics. The risk of surveillance blackouts or programmatic disconnection during transition periods requires coordinated engagement with Global Polio Laboratory Network facilities throughout validation and implementation phases to ensure continuity of surveillance capabilities.

The heavy reliance on method developers for training and troubleshooting creates potential bottlenecks as the technology scales across multiple laboratories. Expanding training capacity through increased support from Global Polio Laboratory Network and GPEI partners could help distribute this expertise more widely, reducing dependence on the original developers.

Cost considerations add another layer of complexity, as adopting new methods may require substantial upfront investments in equipment and training. Comprehensive cost-benefit analyses must demonstrate long-term affordability and scalability within existing Global Polio Laboratory Network frameworks to ensure that improved speed does not come at the expense of network sustainability.

Limited molecular biology and bioinformatics expertise in some laboratories poses practical implementation challenges, particularly for facilities that have focused primarily on traditional cell culture methods. Developing optimised, user-friendly protocols for RNA extraction, polymerase chain reaction (PCR) procedures, and sequence analysis could help bridge these capability gaps without requiring extensive retraining of existing staff. Failure to do so may risk creating unrealised gains from the new methods, as facilities may struggle to implement procedures effectively without a strong technical foundation.

Logistical challenges in equipment, software and specialised reagent procurement create additional complexity for laboratories operating in resource-constrained environments. Establishing secure and sustainable supply chains becomes essential to ensure availability of critical materials without creating new dependencies that could compromise surveillance continuity.

Implementation roadmap

Successfully implementing direct detection methods requires a carefully orchestrated approach that balances the urgency of improving surveillance speed with the necessity of maintaining system reliability. Phased rollout strategies could begin with selected laboratories that possess strong molecular biology capabilities and robust supply chains, allowing early experience to inform broader implementation. The Democratic Republic of the Congo is already using direct detection whilst the Nigeria polio team informed the IMB that they are on phase 2 of a pilot to introduce it in their programme.

Coordinated engagement with the Global Polio Laboratory Network throughout the process will ensure that concerns about performance indicators and operational disruption are addressed proactively rather than reactively. Training capacity must be expanded systematically, moving beyond dependence on method developers to create sustainable expertise within the network itself.

User-friendly protocols and comprehensive technical support systems will prove essential for laboratories with limited molecular biology experience. Supply chain security requires advance planning to ensure that critical reagents and equipment remain available even in challenging operational environments.

Cost-benefit analyses must account for the whole lifecycle expense of implementation, including ongoing reagent costings, equipment maintenance, and technical support requirements. Financial planning should incorporate contingencies for unexpected expenses and ensure that cost savings from accelerated detection translate into genuine programmatic benefits.

The ultimate goal extends beyond simply speeding up laboratory procedures to fundamentally improving outbreak response capabilities. Success will be measured not just by reduced turnaround times but by demonstrable improvements in the speed and effectiveness of vaccination campaigns mounted in response to poliovirus detection.

The development of direct detection methods represents a potentially transformational advance in poliovirus surveillance capabilities. However, realising this potential requires navigating complex technical, operational, and financial challenges while maintaining the reliability that has made current surveillance systems so effective. The careful balance between innovation and reliability will determine whether these promising technologies can fulfil their potential to accelerate the final stages of global polio eradication.

Assessment suggests that while direct detection methods represent a significant technological advance, their global implementation will require sustained investment in capacity building, supply chain development, and technical support systems over periods measured in years rather than months. The complexity of maintaining surveillance reliability while introducing revolutionary new methods necessitates careful, systematic scaling that prioritises function preservation over speed of adoption. Furthermore, unless detection is paired with rapid response, the benefits of direct detection will not be realised.

IMPLEMENTATION SCIENCE: INTRODUCING MODERN MANAGEMENT FOCUS

Vaccines do not save lives—vaccination does. This distinction highlights the critical importance of delivery systems, community acceptance, and operational excellence in translating scientific innovations into public health impact.

The most sophisticated vaccine development efforts will fail without corresponding attention to delivery mechanisms, cold chain requirements, training needs, and community engagement strategies. Field workers in challenging environments are the ultimate arbiters of programmatic success, making accessibility and usability paramount considerations in tool development.

Implementation science has not had much of a place in mainstream management of the Polio Programme. It is a critical yet underutilised approach that could enhance the effectiveness and sustainability of the GPEI's work. As the programme advances toward its ultimate objective of eradicating polio worldwide, the systematic application of implementation science principles offers a pathway to address persistent challenges, optimise intervention delivery, and strengthen programme outcomes across diverse global contexts.

This discipline transcends traditional efficacy research by focusing specifically on how interventions perform under actual field conditions, accounting for the complex interplay of contextual factors that influence programme success.

The relevance of implementation science to polio eradication extends beyond simple programme delivery. It encompasses the systematic examination of barriers and facilitators that affect intervention uptake, the development of targeted strategies to overcome implementation challenges, and the rigorous evaluation of how different approaches perform across varied settings.

This scientific approach is particularly pertinent to the GPEI given the programme's scale, complexity, and operation across diverse socio-political environments.

The GPEI's implementation strategies are predominantly multifaceted, with most interventions combining multiple components rather than relying on single approaches. This finding aligns with implementation science principles that

emphasise the importance of addressing barriers at multiple levels simultaneously.

The Polio Programme's focus on stakeholder engagement and capacity building, alongside real-time management and problem-solving, is a sophisticated understanding of delivery challenges that implementation science theory would strongly support.

One of implementation science's most significant contributions to the GPEI would be the provision of systematic approaches for identifying barriers and selecting appropriate implementation strategies. This approach moves beyond ad hoc problem-solving to establish systematic processes for understanding implementation challenges and developing appropriate responses.

For the Polio Programme, this could translate into more rigorous pre-implementation assessments that systematically identify contextual factors likely to affect programme success. Rather than relying primarily on programmatic experience, implementation science frameworks provide structured approaches for assessing readiness, identifying potential barriers, and selecting strategies with the highest probability of success in specific contexts.

This approach aligns with contemporary emphasis on learning health systems that continuously improve performance through systematic data collection and analysis.

The post-COVID era has intensified challenges around vaccine hesitancy and misinformation. Social media platforms, WhatsApp networks, and online communities now significantly influence local vaccination decisions across all geographic areas. Understanding and countering these influences requires sophisticated social listening capabilities, analyses, and globally as well as locally designed intervention strategies.

Research into community trust, zero-dose population characteristics, and other social and behavioural determinants of vaccination acceptance must occur in real-time and at granular geographic levels, moving beyond knowledge, attitude and practice studies to more nuanced evidenced-based social changes strategies and frameworks. The reasons for vaccine refusal or system failures change over time and vary significantly between communities, requiring adaptive, evidence-based responses. Understanding how to improve early case detection, sample collection and transportation would also help reduce the time from onset to response.

CONCLUSIONS

CONCLUSIONS

In headline terms, 2024 was a year of poor performance for the Polio Programme in the two remaining endemic countries. It was also a story of failed expectations.

None of the six epidemiological milestones set by the Technical Advisory Group for Polio Eradication in Pakistan (TAG) in January 2025 had been met when the committee reviewed them at the end of June 2025.

Achieving uniformly high vaccine coverage across geographic areas and sustaining it over time remains the fundamental challenge. Improvements in one area offset by declines in another allow poliovirus survival.

Improvements in the burden of vaccine-derived polio in Africa have been made but detections of the type 2 strain of the poliovirus are still widespread and not yet on a rapid and sustainable trajectory towards interruption of transmission.

The Strategic Group of Experts on Immunization (SAGE) reviewed the overall position for polio eradication in March 2025. It expressed concern that: “there are no visible efforts towards transformative change in the eradication strategy.”

The integration of polio eradication work with essential (routine) immunisation programmes remains a critical challenge for achieving the Global Polio Eradication Initiative’s (GPEI’s) strategic goals. Despite decades of advocacy for integrated approaches, fundamental structural, cultural, and leadership barriers continue to impede full-scale collaboration between vertical polio programmes and broader immunisation systems. Recent developments have included the first-ever joint Gavi Board-Polio Oversight Board meeting.

Foundational to this integration work is reaching big enough improvements in inactivated polio vaccine coverage to make a difference, not in a few years’ time, but now. Rapid advancement would lead to higher polio immunity levels and reduction in paralysis and deaths of children. This is not yet happening.

Growing geopolitical complexity and major shifts in global health policy and funding are having huge effects on the Polio

Programme. It is confronting a stark financial reality: transitioning from $1 billion to $750 million annually—a 32-35% reduction—while maintaining eradication standards that have proven elusive even at higher funding levels. This represents the most significant challenge in the programme's history, forcing fundamental questions about operational sustainability and strategic priorities.

Decades of missed goals have triggered a deeper questioning of who is driving decision-making within GPEI and how accountability will be activated so that transformational changes can take place. This is being considered as part of an external governance review, the outcome of which will be discussed by the Polio Oversight Board in late-September 2025.

FINANCIAL SHOCKWAVES AND LONGSTANDING ACCOUNTABILITY WEAKNESSES

> *"Some individual leaders have said: 'We are a technical programme, geopolitics is someone else's business'"*

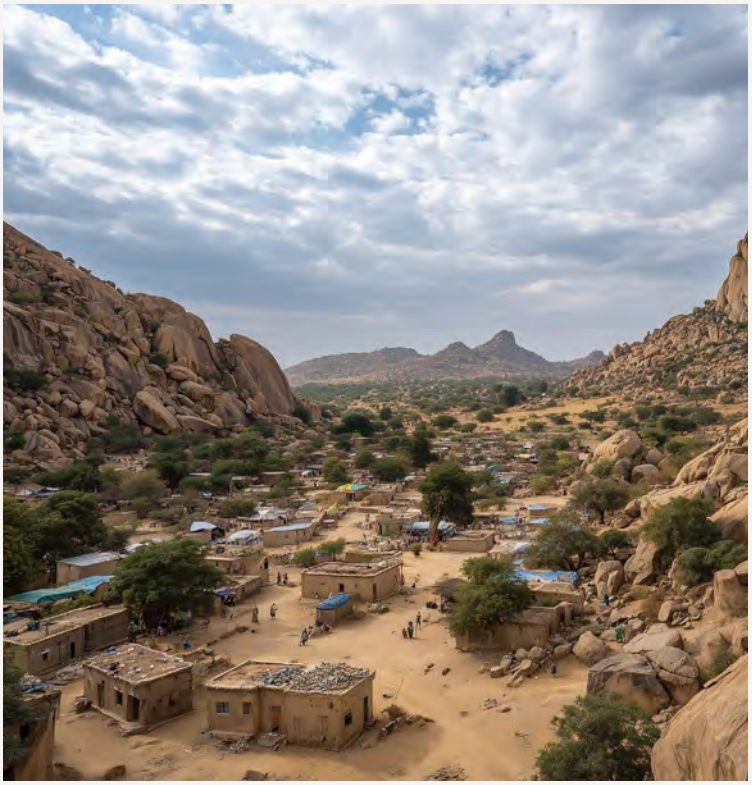
The United States government's health and international development funding decisions, and consequent changes to organisational structures, policies and purposes, represents an unprecedented challenge to global polio eradication. There are immediate severe operational impacts and long-term strategic implications that affect the Polio Programme and services that work with, and support, it. The overall disruption threatens to further delay eradication timelines and increase long-term costs. The response from alternative donors, particularly the Kingdom of Saudi Arabia, demonstrates the potential for burden-sharing, but cannot fully compensate for the scale and institutional significance of the United States withdrawal. The success of Congressional advocacy work and the ultimate 2026 financial year appropriation decisions will determine whether this crisis represents a temporary disruption or a fundamental reordering of global health

priorities. The stakes extend beyond polio eradication to encompass broader questions of global health governance, disease surveillance capabilities, and the United States' role in international health security.

As a founding partner of the Global Polio Eradication Initiative (GPEI), the changes made to CDC are of deep concern. They raise fundamental questions about the United States' continued commitment to polio eradication and broader international health cooperation.

As one of six core partners in GPEI alongside WHO, Rotary International, UNICEF, the Gates Foundation, and Gavi, the CDC has historically provided crucial scientific and technical expertise to the initiative. The agency's contributions have included operating specialised polio laboratories, providing genomic sequencing capabilities, deploying field epidemiologists (through the STOP programme), and maintaining surveillance systems essential for outbreak detection and response.

The proposed elimination of the CDC's nearly $200 million Polio Programme would represent a devastating blow to GPEI's operations. This funding has supported critical activities including laboratory surveillance, field operations, and technical assistance to endemic countries. The CDC's Polio and Picornavirus Laboratory is a WHO Global Specialized Laboratory and provides



essential diagnostic services and genomic sequencing that guides eradication strategies.

Moreover, the broader cuts to global health programmes signal a fundamental retreat from America's historical leadership role in international health cooperation. The United States has been the second-largest donor to GPEI since its inception, contributing almost $4.3 billion since 1988. This support has been channelled through multiple agencies, with major funding flowing through both USAID and CDC programmes.

For the GPEI, the financial crisis and the loss of core programmatic experience and expertise is both an existential threat and a potential catalyst for strategic innovation. While the magnitude of the losses creates genuine risks to programme continuity and eradication timelines, the crisis also forces long-overdue examinations of resource allocation efficiency, performance accountability, and strategic prioritisation.

Success in navigating this crisis requires balancing immediate operational needs with longer-term strategic positioning. Short-term resource mobilisation and operational adjustments must support sustainable funding models and enhanced performance management

systems that can function effectively in a more constrained resource environment.

The Polio Programme's ability to demonstrate adaptability, resilience, efficiency, and strategic focus during this crisis will significantly influence donor confidence and future resource availability. More importantly, success in maintaining polio eradication progress despite funding constraints could provide valuable lessons for global health governance in an era of increasing resource competition and geopolitical uncertainty.

The crisis ultimately tests whether GPEI can transition from a resource-abundant programme with inconsistent accountability to a strategically focused initiative that maximises impact within available means. The outcome will determine not only polio eradication prospects but also the credibility of ambitious global health goals in increasingly challenging operational environments.

A fundamental concern, voiced widely to the IMB, was termed by one person involved in IMB discussions as the "curse of affluence." This allows for consistent funding levels regardless of performance outcomes. It is a recipe for complacency. Endemic country funding has remained around $300 million annually for at least five to 10 years, creating predictable resource flows independent of programmatic achievements or setbacks.

This funding stability, while providing operational certainty, may have inadvertently reduced incentives for performance improvement or innovative approaches. The current financial crisis presents an opportunity to introduce performance-based financing mechanisms that link resource allocation to measurable outcomes and strategic objectives. It is also an opportunity to review and reinforce how the country polio programmes are being evaluated.

GLOBAL: NUMBER OF CHILDREN CONTRACTING POLIO

	2024[+]	2025[*]
Endemic countries	99	28
Non-endemic countries	463	134
Percentage of disease burden outside endemics	82%	83%

[+] Whole year [*] to 3 September

THE PERCEPTION OF A NEVER-ENDING PROGRAMME WITH NO CLEAR PLAN B

At its meeting in July 2024, in the midst of a wild poliovirus resurgence that reversed the favourable situation reached in 2023, the IMB had a frank and open discussion with the GPEI Strategy Committee about alternative approaches.

The IMB asked whether there was a "Plan B" if it became clear that the Polio Programme was not on a sustained trajectory to interrupt transmission of the poliovirus (both wild and vaccine-derived) in the near future. There was no clear response to this question, but the WHO head of polio said: "We can't just keep going on and on."

It was obvious from this meeting in 2024 that there had indeed been discussions behind the scenes about more radical options. These included reverting to a "control" programme and leaving the countries to deal with polio, like all other communicable diseases.

Another area of discussion was whether temporarily to prioritise goal two (stopping vaccine-derived poliovirus transmission) over goal one (stopping wild poliovirus). The two key advantages of this would have been: firstly, that endorsing goal two as an emergency programme might dramatically boost performance to a level not currently being achieved; and secondly, faster and more effective outbreak closure, coupled with better financing of preventive campaigns, would release large sums of money to finish the job in the endemic countries. The big disadvantage was the fear of losing impetus on the wild poliovirus front with consequent surges of this vicious infective agent on a geographic scale from which it would be impossible to row back the numbers of cases.

The proposal of "showing a much stronger preference for goal one over goal two" was also mentioned in that earlier discussion between the IMB and the GPEI Strategy Committee. Some saw it as a potentially transformative shift in programme strategy. Such a prioritisation acknowledges that wild poliovirus eradication carries greater symbolic and fundraising value than vaccine-derived poliovirus control, despite the epidemiological importance of both objectives. The strategic logic is: achieving wild poliovirus interruption in Pakistan and Afghanistan would provide the political momentum and donor confidence necessary to sustain long-term action against vaccine-derived

poliovirus circulation. Yet, with slackening of control, and perceptions of de-prioritisation of goal two, a resulting bigger surge of vaccine-derived poliovirus could cause a great deal of harm to the populations of many countries, including those a long way from African epicentres. It would also take large sums of money even to contain spread. Given that this poliovirus causes the same disease, polio, as the wild poliovirus, the monthly tally of paralysis and death of children from a preventable cause could become intolerable.

Radical strategic repositioning, a "Plan B" of any kind, would require honest acknowledgment of trade-offs and risks. Three months after the July 2024 discussion between the IMB and the GPEI Strategy Committee, the GPEI extended its existing strategic plan which had been scheduled to run until through to the end of 2026. With the publication and adoption of *Polio eradication strategy 2022-2026: delivering on a promise, extension to 2029*, a formal decision was taken to stick with the existing strategic approach rather than change course.

This continuation marked not only a deferral of the goal of global eradication but also drew scrutiny for lacking sufficiently bold or transformative shifts in strategy. Deadlines were rolled forward with no strong rationale or evidence to suggest that a fundamentally different outcome would follow.

All of this thinking and discussion took place before the geopolitical changes and funding reductions that took place in early 2025 that will require the Polio Programme to deliver its goals on less funding than it had when it rolled its existing strategy forward.

With that in mind, the GPEI has decided to produce another plan that will be considered by the Polio Oversight Board in late September 2025. The IMB was made aware of this as its report was being finalised and detailed consideration has not been possible.

The Polio Programme is long overdue another victory. Sustained donor support depends on demonstrable progress rather than perpetual crisis management. Previous landmark polio victories-clearing the disease out of the Americas, India's towering success, and Africa's wild poliovirus-free status provided concrete evidence of programme effectiveness as well as leadership and management competence. They boosted donors' confidence, including the steadfast Rotarians advocating with parliaments, to invest further in a success story, they transformed staff morale, they drew talented people into the programme.

The current absence of such victories has contributed to donor fatigue, resource constraints and a feeling that the Polio Programme is running out of ideas. Stopping poliovirus circulation in Madagascar and in large areas of the Democratic Republic of the Congo are great recent achievements. They are important learning opportunities for other polio-affected and polio-vulnerable countries, but they should not be celebrated as turning points in the overall fight against polio.

THE SILENCE OF THE POLIOVIRUS RESERVOIRS CANNOT BE TRUSTED

Coming out of 2023, after the IMB's mid-term review, where the Polio Programme was interpreted widely as having had a strategic "near miss," the world had expected better.

There were clear warnings of the dangers of easing off the intensity of the disease control activities. Additionally, was the bonus of a forthcoming polio low season when it is easier to make polio gains.

The resurgence of wild poliovirus in Peshawar, Karachi, and Quetta Block after periods of apparent elimination exposes the hollowness of previous claims about programme "resilience." The IMB had noted

"The polio programme is long overdue another victory."

the gains in Pakistan's ability to prevent re-establishment of transmission in historical reservoirs, but these gains evaporated when tested by the poliovirus's relentless probing of immunity gaps.

The 23rd IMB report, and some expert opinion at the preceding IMB meeting, had warned of the dangers of solely concentrating on "consequential geographies."

The declassification of the cleared reservoirs as "non-endemic," in the interests of throwing everything at south Khyber Pakhtunkhwa, was a mistaken policy decision. The IMB had been reassured that, given that there had been no detections in these reservoirs for some time, any new detection there could quickly be extinguished with a robust outbreak response.

It is almost as if the desperation to finish the job of stopping wild poliovirus circulation created a blind spot about the fundamentals of polio epidemiology and the interconnected nature of transmission networks in Pakistan.

It is clear that areas like Karachi, with its massive population movement (millions entering and leaving weekly), and the country's large annual birth cohort of nearly seven million newborns, require sustained high immunity levels to prevent poliovirus transmission. In Pakistan, over 40% of children under the age of five years are growth impaired, and 18% suffer from acute malnutrition which reduces vaccine efficacy and immunity levels.

Even seemingly modest drops in these immunity levels can create conditions for sustained transmission that can spread poliovirus to other parts of Pakistan. The difference between success and failure in polio eradication often comes down to maintaining immunity levels within very narrow margins, particularly in high-transmission urban centres.

OPTIMISM ABOUT LOW WILD POLIOVIRUS IN 2023 WAS BUILT ON A FALSE PREMISE

Striking improvements in poliovirus detection rates in 2022-2023 cannot any longer be causally attributed to management performance.

The emerging findings of a study of polio epidemiology in Pakistan have concluded that the favourable position on poliovirus detection was mainly reached by COVID-19 related conditions rather than programmatic performance levels.

A paradoxical situation was reached whereby low poliovirus detection levels co-existed with low polio immunity; the latter was insufficiently appreciated by the Polio Programme.

The misinterpretation of what actually drove the temporary transmission interruption is in danger of creating false confidence in current eradication strategies. If Polio Programme improvements were responsible for the near-elimination of poliovirus between 2021 and 2023, then similar approaches should theoretically be able to achieve the same results again. However, if COVID-19 restrictions were the primary factor, then the Polio Programme is operating under a fundamental misunderstanding of its own capabilities and limitations.

Acknowledging that COVID-19 restrictions, rather than programmatic improvements, drove the temporary interruption of transmission does not diminish the importance of the eradication mission. Instead, it provides a more accurate foundation for developing strategies that can succeed in the current epidemiological reality.

PAKISTAN: ALIGNING POLITICAL WILL AND PUBLIC HEALTH TOOLS

> *"The silence of the reservoirs cannot be trusted"*

Pakistan's Polio Programme exemplifies the fundamental tension between political commitment and operational delivery that has plagued global eradication. The strong high-level engagement—from the Prime Minister through chief ministers to provincial secretaries—creates an impressive architecture of accountability that should, in theory, drive systematic improvements in programme quality and coverage.

Past experience has shown that commitment from the top leadership does not necessarily, and automatically, become translated into better management and accountability at lower operational levels. The current political infrastructure coexists with stubbornly persistent operational failures that reveal deeper systemic weaknesses. The continued circulation of poliovirus in urban reservoirs like Karachi and Lahore, despite extensive campaign activities, exposes the limitations of traditional approaches. The statistical modelling indicating a 50% probability of case emergence from Lahore reflects not merely epidemiological risk but programmatic inadequacy in translating political commitment into effective field implementation.

The paradox deepens when examining south Khyber Pakhtunkhwa, where over 100,000 children remain unreached despite innovative approaches like the community-led vaccination initiative. The division of this region into "green," "COMVI," and "black" areas represents a sophisticated analytical framework. Yet, the persistence of substantial inaccessible populations undermines the fundamental premise that political will can overcome operational constraints or the influence of anti-government forces.

Pakistan's experience with the 2025-2026 roadmap reveals the gap between strategic

planning and implementation reality. The emphasis on risk-based targeting, extended age vaccination, and integrated interventions is sophisticated epidemiological thinking, but these approaches have been attempted repeatedly with no sustained transmission interruption. The roadmap's success depends not on technical innovation but on the elusive goal of consistent, high-quality implementation across diverse operational environments.

The 2025 floods are a serious setback for Pakistan's Polio Programme at a critical time when the programme was working to consolidate gains.

The disruption of planned vaccination activities, combined with enhanced transmission risks, and barriers to standard case detection and surveillance systems, threatens to stall progress toward transmission interruption. Further movement and displacement of populations adds more unpredictability to the polio epidemiology trajectory for the rest of the year.

There was already grave concern about wild poliovirus circulation in Lahore, in a province that has had better programmatic performance, and higher resilience to poliovirus importation, than most other parts of Pakistan. Images of large areas of Lahore now underwater is a very disheartening sight.

To address these challenges, the programme must prioritise rapid restoration of vaccination activities in flood-affected areas, while implementing enhanced measures to reach displaced populations. This includes establishing systematic vaccination services in all displacement camps and temporary settlements, conducting catch-up campaigns to address immunity gaps created by postponed activities, and strengthening surveillance systems to monitor poliovirus circulation in the changed epidemiological environment.

The 2025 floods serve as a stark reminder that polio eradication in Pakistan must contend not only with traditional challenges such as access limitations and vaccine hesitancy, but also with the growing threat posed by climate change and extreme weather events. Successfully navigating these compound challenges will require sustained commitment, operational flexibility, and strategic investment in programme resilience.

The Polio Programme should firmly commit to building greater resilience to climate-related disruptions through improved contingency planning, strengthening of cold chain and distribution networks, and development of rapid response capabilities for post-disaster vaccination activities. The

recurring nature of extreme weather events in Pakistan makes such resilience measures essential for sustained progress toward polio eradication.

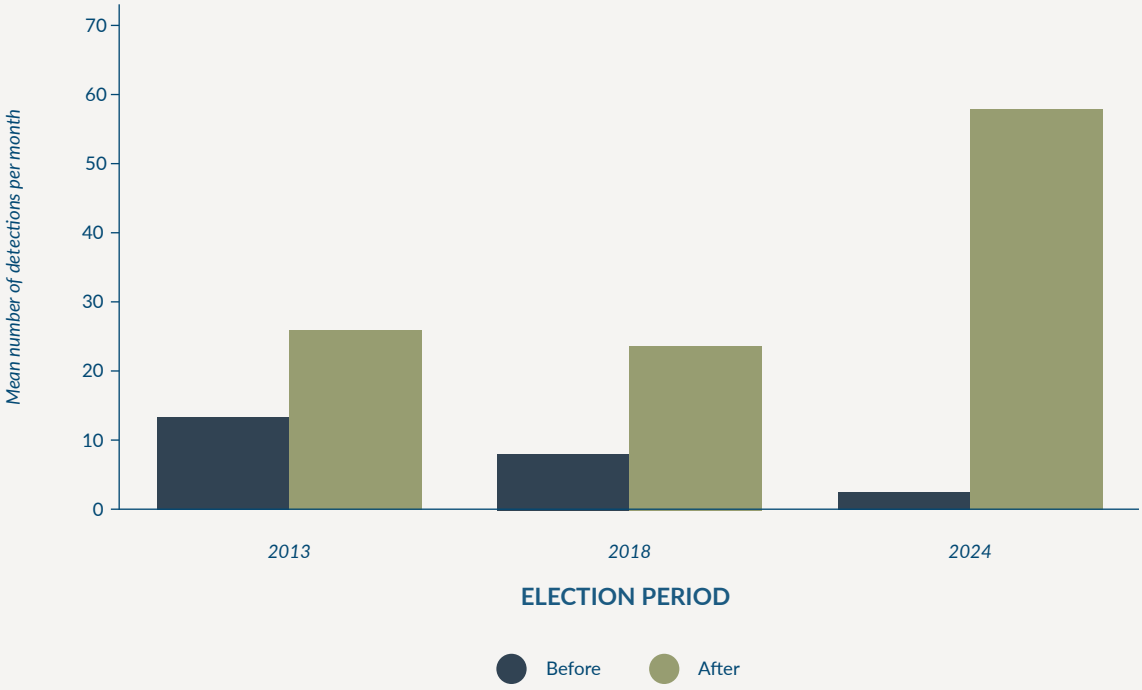
Addressing the immediate impacts of the current floods, hand-in-hand with building longer-term adaptive capacity, is a critical priority for maintaining momentum toward polio-free status in Pakistan.

AFGHANISTAN: POLITICAL COMPLEXITY AND POWER STRUCTURES

Afghanistan is one of the Polio Programme's most complex and intractable challenges, with fundamental disagreements about the path forward.

Afghanistan's shift from house-to-house to site-to-site and mosque-to-mosque vaccination has greatly damaged the quality of the Polio Programme. Without the ability to conduct household visits, teams cannot accurately assess target populations or ensure comprehensive coverage. The absence of female workers in parts of the country means that children remain invisible to vaccination teams, creating substantial coverage gaps that traditional monitoring systems struggle to capture.

PAKISTAN: WILD POLIOVIRUS DETECTIONS IN THE 6-MONTH PERIODS BEFORE AND AFTER NATIONAL ELECTIONS



Detections include polio cases and positive environmental samples.

The whole country functions under the same paradigm with emphasis on religious and political considerations, but the leadership in the south region is strongest in this outlook. There should be no non-public health imperatives of this kind preventing Afghanistan's children from being protected from harm, death and lifelong disability.

Changes to the design of the Polio Programme in the east region of Afghanistan have been able to mitigate some of the harm caused by these policies. As a result of local negotiation and collaborative planning, it operates according to many of the accepted public health principles. It is achieving measurable progress by house-to-house vaccination through highly granular site-to-site access strategies, as well as a strengthened workforce composition.

In contrast, the south region functions under the strictest of rules and penalties. This division represents more than operational differences. It reflects a fundamental fracture in how the programme is conceptualised and implemented across the country.

The IMB's assessment, based on extensive discussions, shows the existence of two parallel hierarchies of governance and power in Afghanistan that are adversely affecting the Polio Programme as well as some other health services.

Emerging from IMB discussions, views are divided on the right approach to Afghanistan. Some see the future lying not in continued negotiation with central authorities, but in focused engagement at the provincial level, particularly with governors and public health officials in the south who operate with considerable autonomy. This approach recognises that provincial leaders may be willing to fully

engage in polio eradication. This is especially so if the Polio Programme builds in more integrated service delivery, combining polio activities with nutrition support, essential immunisation, and other health services that provincial authorities genuinely value. The deteriorating food security situation, exacerbated by cuts to World Food Programme funding, creates opportunities for such integrated approaches.

Continuing to negotiate on house-to-house access in the south is seen by many as a strategy that has consumed significant political capital without meaningful returns. However, whether the alternative approach represents genuine strategic innovation or merely sophisticated rationalisation of programme failure is a matter of debate. Lessons in community engagement and conflict resolution indicate that work to build trust and overcome entrenched positions needs to start with where there is mutual agreement, even if it is imperfect.

The characterisation of the Polio Programme in Afghanistan as a source of funding for a resource-starved government was raised by some who attended the IMB meeting in July 2025. It poses fundamental questions about whether eradication is possible when the programme itself has become an economic lifeline that authorities have no incentive to conclude successfully.

In previous reports, the IMB has pointed to the presence of transactional relationships as a red flag for the health of the Polio Programme. A disturbing behavioural pattern is continuing whereby Afghanistan's leadership uses polio as a bargaining tool for securing resources for other health functions, while not addressing the internal policy issues that are needed to restart international funding. This is particularly pronounced in the south region where the government appears to view polio eradication activities as leverage for obtaining broader development assistance rather than as an emergency health programme.

There are deep concerns about Afghanistan's absence from critical programme meetings, including the Technical Advisory Group session and the IMB bilateral meetings. The planned delegation, including the health minister who had previously engaged constructively with international partners, failed to materialise despite extensive logistical preparations including visa arrangements. The reported requirement for highest-level approval before international engagement highlights the fundamental constraints facing any external cooperation with Afghanistan.

The IMB's assessment is stark: there is currently no viable plan for reaching zero transmission in south Afghanistan. The strategies currently in place are insufficient to achieve eradication in these areas. This represents a fundamental strategic gap that threatens the entire global eradication goal. For the first time in the history of polio eradication, it does not feel as if Afghanistan is, or wants to be, a proper part of the global Polio Programme.

As the IMB was finalising this report, a devastating earthquake hit Afghanistan. The broader humanitarian crisis exacerbated by the earthquake will inevitably divert attention from polio eradication activities, as polio staff and resources are repurposed to the disaster response. Afghanistan's health system, already severely constrained by economic collapse and international sanctions, faces additional strain that could compromise both routine immunisation services and supplementary campaign implementation. The interdependency between Polio Programme success and overall health system functionality becomes particularly apparent in crisis situations where competing priorities vie for limited resources.

INTEGRATION AND THE ZERO DOSE-ERADICATION NEXUS

The integration challenge brings some baggage that many are reluctant to speak openly about. There have long been deep cultural differences between polio and essential (routine) immunisation programmes within WHO, partner organisations and the GPEI itself.

"A fundamental challenge is that some see integration as a dilution of polio focus rather than a multiplication of impact."

Current polio programmes operate with a highly operational, field-focused culture appropriate to an emergency eradication initiative. Staff are trained and incentivised to deliver immediate, measurable results through house-to-house campaigns and intensive surveillance activities. In the early years of polio eradication, polio activities were embedded in national immunisation and disease control systems.

In contrast, current vaccine preventable diseases teams function as technical advisors focused on norms, guidance, training, and capacity building with ministries of health. These teams are operational entities insofar as they work closely with countries, but their role is mainly to provide strategic support for sustainable health system strengthening. In part, this reflects broad international support for WHO to move away from hands-on implementation.

These legitimate but divergent operational cultures have created mutual misunderstandings. Polio staff sometimes view essential immunisation teams as insufficiently operational and field-oriented, while immunisation programme staff perceive polio teams as narrowly focused and lacking understanding of comprehensive immunisation system management. Over the years, there has been resentment

that huge sums of dedicated funding has been allocated to polio that could have been spread more equitably across the whole vaccine-preventable disease programme. Leadership has largely failed to bridge these cultural gaps, constituency expectations, or leverage the complementary strengths of both approaches. Opportunities to integrate, internally and externally, through strategic communications which highlight joint objectives and successes, have been overlooked.

A trumpeted new collaborative dawn, during the pandemic period, the Integrated Polio and Immunization Leadership (IPIL) initiative, while technically sound, lacked the full force of leadership commitment, leaving technical staff swimming upstream against organisational priorities. There are important lessons for the future of integrated working to be drawn from this disappointing experience. It should not be written off as an ephemeral COVID "flavour of the moment" initiative. It was a telling warning of the scale of the task of achieving truly impactful integration and the length of time it could take.

The fundamental challenge lies in the perception, amongst some of the spearheading partners, that integration represents a dilution of focus rather than a multiplication of impact. When faced with resource constraints, operational pressures, or a glimpse of a perceived finishing line, polio programmes have repeatedly defaulted to vertical approaches, slowing the momentum of integrated strategies.

The relationship between polio eradication and broader essential immunisation systems reveals critical weaknesses that threaten long-term programme sustainability. Current essential immunisation frameworks lack the operational capacity to deliver rapid coverage improvements, a deficiency that will become particularly acute during the post-cessation period when maintaining high population immunity levels becomes paramount. This is something that should keep the Polio Programme leadership awake at night.

This systemic inadequacy extends beyond technical limitations to encompass fundamental questions about global health system

architecture. The absence of performance management mechanisms, capable of generating rapid coverage gains, reflects deeper organisational and political constraints that have persisted despite decades of programme evolution and substantial financial investment.

The interconnection between Gavi's zero-dose agenda and GPEI's eradication objectives is both an opportunity and a challenge for global immunisation. With one in seven children in Gavi-eligible countries classified as zero dose, these populations constitute the immunity gaps that enable continued poliovirus circulation. The relationship is cyclical: inadequate essential immunisation creates conditions for outbreak emergence, requiring oral polio vaccine responses that may themselves contribute to vaccine-derived poliovirus circulation in under-immunised populations.

The disconnect between Gavi's five-year funding cycles and GPEI's quarterly performance adjustments has created temporal mismatches that complicate joint planning despite strategic alignment. The reduction in United States contributions to both initiatives, combined with Gavi's replenishment shortfall of 25%, creates parallel funding constraints that demand innovative approaches to resource optimisation.

The situation is compounded by insufficient outbreak response capacity, where undetected transmission leads to infections and paralysis among unimmunised children. New birth cohorts continuously enter these immunity gaps, perpetuating the conditions that sustain both poliovirus circulation and zero-dose populations. This dynamic demonstrates that polio eradication success requires effective and operational transition plans, outbreak response capacity, as well as sustained essential immunisation strengthening to prevent future susceptible populations building up.

The geographic concentration of these challenges in fragile and humanitarian settings adds complexity to programme implementation. These contexts often feature the lowest essential immunisation coverage, the highest population mobility, and the greatest operational constraints. Yet, they represent critical reservoirs for both poliovirus circulation and zero dose children.

An important part of the integration debate is the acknowledgement that the achievement of both goals in the Global Polio Eradication Initiative is fundamentally dependent on rapidly increasing population coverage with inactivated polio vaccine.

Current evidence demonstrates that, without substantial improvements in coverage with both the first and second doses of the vaccine, the Polio Programme's successful conclusion will remain elusive. Increasing the use of fractional doses of inactivated polio vaccine would be a way to boost performance and extend the current vaccine supply.

The urgency of this has shifted the conversation from whether inactivated polio vaccine integration is desirable to how it can be operationalised most effectively under severe resource constraints. Financial resources are falling and timelines are compressed. Thus, the imperative for rapid inactivated polio vaccine coverage gains demands both innovative delivery strategies and strategic targeting of interventions.

Programmes are just not effective. There is certainly no sense of high coverage with inactivated polio vaccine being unambiguously embedded in the work of this global emergency programme. Even a small action, but one with high symbolic value, recommended in the 23rd IMB report-to record inactivated polio vaccine coverage alongside other headline performance metrics in the weekly polio bulletin- was not quickly adopted.

This reality has begun to penetrate even the most die-hard vertically-oriented segments of the Polio Programme, creating a new recognition that eradication cannot be achieved through oral polio vaccine campaigns alone.

The foundation for high inactivated polio vaccine coverage lies in strengthening essential immunisation systems. However, in areas with very low third dose diphtheria, tetanus and pertussis vaccine (DTP 3) coverage—precisely the geographies most critical for polio eradication—routine systems alone cannot achieve the coverage levels required within necessary timeframes. Whether inactivated polio vaccine is delivered as a standalone antigen or within hexavalent vaccine, the fundamental constraint remains the limited reach and reliability of routine services in priority areas.

Thus, whichever inactivated polio vaccine delivery modality is used, if the only administration method is routine immunisation systems, in a place where essential immunisation coverage is low, then there will be poor inactivated polio vaccine coverage.

The obvious strategic value of hexavalent vaccine lies not in overcoming essential immunisation system limitations, but in reducing the number of injections (a key health worker and family concern) and creating additional opportunities for inactivated polio vaccine delivery within existing contact points. Children receiving hexavalent vaccine have multiple opportunities to receive inactivated polio vaccine even if they present late or miss scheduled visits. The three-dose hexavalent schedule provides more good opportunities compared to the two-dose inactivated polio

vaccine schedule, particularly when combined with enhanced catch-up policies. So, over time, the hexavalent vaccine will bring benefits for inactivated polio vaccine coverage but there is a danger that, within countries, hexavalent vaccine will be perceived as an immediate transformational solution. It is not. Indeed, rapidly scaled-up inactivated polio vaccine as a standalone intervention, and in its fractional dose modality, would be the immediate transformational step if it could be achieved.

The recent joint meeting between the Polio Oversight Board and Gavi Board generated enthusiasm for enhanced integration between polio and essential immunisation programmes. However, the rapprochement has come late, or as one IMB attendee said: "They have finally heard the chimes at midnight."

The hard work now is for leadership at the top to make their commitment clear so that the old culture of mistrust and rivalry at operational leadership and team level is swept away.

NIGERIA'S SHAKE-UP CALL

Nigeria's transformation from wild poliovirus elimination success story to vaccine-derived poliovirus epicentre represents one of the most troubling developments in global health. The country that once demonstrated the possibility of eradication through disciplined implementation and community engagement has become the primary source of international transmission, with polioviruses originating from Zamfara state detected as far away as Israeli wastewater surveillance.

The programme that eliminated wild poliovirus was described by one IMB source as "a thing of beauty," combining technical excellence with operational dynamism and community trust. The current reality—fake finger marking, data falsification, political interference, and persistent community resistance—represents not merely programme deterioration but organisational culture transformation from excellence to mediocrity.

The admission by the Nigeria polio team of "a degree of complacency" following wild poliovirus-free certification reveals a dangerous mindset that treats eradication as achievement rather than ongoing responsibility by all partners. The decision of the WHO Africa Regional Office to let hundreds of experienced staff go following wild poliovirus certification, compounded this complacency and left the country without a strong resilience plan. At the time, the IMB had repeatedly urged the Nigeria leadership to build that strong resilience. It did not happen.

Today, the Nigeria Polio Programme is a sleeping beauty.

The scale of Nigeria's operational challenges defies simple technical solutions. When 13% of children are fake finger-marked (vaccination documentation without actual vaccine administration) during campaigns, the problem extends beyond training deficits

"When the Nigeria Polio Programme eliminated wild poliovirus, it was a thing of beauty – today it is a sleeping beauty."

to encompass systematic dishonesty and accountability failure. The Nigeria Polio Programme's action to terminate one-third of problematic vaccination teams highlights the depth of performance culture degradation.

Nigeria's deployment of over 450 million doses of novel oral polio vaccine type 2 since March 2021—representing 60% of global usage—without achieving transmission interruption raises fundamental questions about both vaccine effectiveness and deployment strategies. With per-dose effectiveness of only 12%, multiple vaccination rounds have been necessary to try to achieve the right level of population polio immunity. Yet, even this intensive approach has not stopped circulation in core transmission areas of Nigeria.

The regional implications of Nigeria's failure extend far beyond its borders. The Lake Chad Basin's interconnected transmission patterns mean that Nigerian poliovirus circulation continues to directly threaten Chad, Cameroon, Niger, and the Central African Republic. The country's role as a transmission hub makes its performance critical not only to national objectives, but to continental eradication goals.

SCALABILITY OF DIRECT TESTING: MAKING PROGRESS WHILST FACED WITH BARRIERS TO RAPID IMPLEMENTATION

While direct detection methods offer the promise of reducing poliovirus detection times from weeks to days, their rapid scaling across multiple countries faces substantial barriers that make swift truly global implementation unlikely within current operational frameworks.

The most immediate constraint lies in the rigorous validation requirements that demand testing across at least twelve laboratories in three WHO regions using approximately 11,000 surveillance samples. This process alone needs a great deal of time as it must demonstrate non-inferiority to current methods while establishing robust quality assurance systems.

Alternative models, including split sample models which use new technologies in parallel, hold the promise of accelerating learning, quality improvement, and disease control.

Technical capacity is perhaps the most significant scaling barrier. Many laboratories within the Global Polio Laboratory Network currently rely on traditional cell culture methods and lack the molecular biology and bioinformatics expertise required for direct detection approaches. Implementing these methods requires substantial skill development in RNA extraction, polymerase chain reaction (PCR) procedures, and sequence analysis—capabilities that cannot be rapidly transferred across diverse laboratory settings.

The GPEI has informed the IMB that the Ibadan laboratory in Nigeria is fully operational and now also performing poliovirus genetic sequencing supported by WHO's regional laboratory coordinator and South Africa's national laboratory. In addition, to Nigeria and South Africa, within Africa, laboratories in the Democratic of the Congo, Ghana and Uganda are performing genetic sequencing.

In WHO's Eastern Mediterranean region, laboratories in five countries are performing genetic sequencing: Pakistan, Egypt, Oman, Tunisia and Iran.

Laboratories in Nigeria, South Africa, the Democratic of the Congo, Pakistan, Oman, Egypt, Ghana, Uganda, Madagascar and Kenya are also engaged with direct detection projects and methodology development.

Infrastructure and supply chain challenges compound the scaling difficulties. The new methods require specialised reagents, equipment, and software that may prove difficult to procure and maintain in resource-constrained environments. Establishing secure supply chains for critical materials across multiple countries, particularly those with challenging logistics environments, is a complex undertaking that could take years to implement reliably unless new and more nimble methods are deployed.

Financial barriers create additional scaling constraints. Beyond initial equipment investments, the ongoing costs of reagents and technical support may exceed current laboratory budgets. Many facilities operate with limited resources and cannot easily absorb the additional expenses associated with new technology adoption without compromising existing surveillance capabilities.

Perhaps most critically, the heavy reliance on method developers for training and troubleshooting creates an

inherent bottleneck to rapid scaling. The expertise required to implement these methods effectively cannot be quickly distributed across dozens of laboratories simultaneously without significant expansion of training capacity and technical support systems.

The phased implementation approach that appears most realistic would begin with a focus on areas in which direct detection could most substantially improve outbreak control (particularly Nigeria), with laboratories possessing strong molecular biology capabilities and robust supply chains, gradually expanding to additional facilities as experience accumulates and support systems mature. This measured approach, while prudent, means that the benefits of accelerated detection will emerge incrementally rather than transforming global surveillance capabilities rapidly.

Three key points should frame further developments:

1. Ensuring clear Global Polio Laboratory Network and GPEI ownership, leadership, and involvement in the project;
2. Strengthening molecular biology expertise across Global Polio Laboratory Network laboratories;
3. Phased implementation, with immediate programmatic use of results in selected countries following Global Polio Laboratory Network validation of sequencing outputs.

There are two additional aspects to be borne in mind:

- The shift to direct detection methods means, eventually, there may be no need to handle infectious poliovirus. This is an important consideration, as adoption of direct detection is not only a logical step to improve turnaround time but also a means of reducing biosafety concerns approaching the polio endgame;
- Current validation work focuses on stool samples, but it would be valuable to highlight that these methods should also be extended to wastewater samples to maximise the impact of this strategy.

Although implementation could be achieved more quickly and effectively by leveraging laboratories with existing molecular biology expertise, equally critical is prioritising laboratories handling samples of high programmatic significance.

Despite the potentially innovative impact of scaling-up direct detection, it should not be forgotten that the greater challenge lies in the speed and quality of immunisation campaigns; accelerating laboratory detection of polioviruses is just one tool to hasten vaccine deployment and curtail the spread of polioviruses.

STRATEGIC GENDER IMPERATIVES FOR PROGRAMME ADVANCEMENT

Without gender-responsive programmes, comprehensive female participation in decision-making, and dedicated female vaccination teams, access to key communities remains severely compromised. These are not auxiliary considerations but fundamental operational requirements for achieving vaccination coverage targets and maintaining polio-free status.

Moving forward, the programme requires strengthened analytical capacity to understand context-specific gender patterns, enhanced leadership diversity to improve programme design and accountability, and systematic integration of gender considerations into routine surveillance and programme monitoring systems.

The complexity of gender dynamics across different contexts demands sophisticated responses that move beyond standardised approaches to embrace locally-tailored interventions that address unique social contexts and gender norms within each operating environment.

The Polio Programme must establish systematic gender analysis as a fundamental component of programme planning rather than an optional consideration. This requires development of valid tools for assessing gender dynamics within different implementation contexts and integration of findings into operational planning processes. Context-specific approaches based on actual, rather than assumed, gender roles and decision-making patterns represent essential adaptations for improved programme effectiveness.

Monitoring systems require immediate enhancement to capture gender-disaggregated data that enables identification and targeting of persistently missed populations. These modifications should extend beyond simple demographic indicators to include analysis of decision-making patterns and access barriers that may vary by gender within different cultural contexts.

Communication strategies must be designed based on systematic understanding of gender-specific information channels, norms and authority structures rather than general assumptions about caregiver roles.

Current programme monitoring systems lack the basic demographic disaggregation necessary to identify and address gender-related implementation barriers. Tally sheets used during vaccination campaigns do not systematically collect sex-disaggregated data, preventing identification of persistently missed populations by gender. The practice of listing names of persistently missed children without gender indicators eliminates opportunities for targeted follow-up based on systematic patterns.

The absence of age-disaggregated data compounds these monitoring limitations, preventing analysis of interactions between age and gender factors that may influence vaccination outcomes. Campaign teams report achieving coverage targets that exceed planned numbers while simultaneously missing vulnerable populations, suggesting that current monitoring approaches fail to capture systematic exclusion patterns that may be gender-related.

The path toward global polio eradication increasingly depends on the programme's capacity to understand and respond to these gender dimensions with the same rigour applied to

virological and epidemiological considerations. Only through this comprehensive approach can the Polio Programme address the root causes of persistent transmission and achieve the lasting success that has thus far remained elusive.

CERTIFICATION'S TECHNICAL READINESS VERSUS OPERATIONAL ACHIEVEMENT

The Global Certification Commission's confidence in certification decisions, demonstrated through successful verification of types 2 and 3 wild poliovirus eradication, contrasts sharply with persistent operational challenges in achieving transmission interruption. The Commission's recognition that surveillance quality in Pakistan already approaches certification standard indicates technical readiness that awaits operational success rather than technical innovation.

The fundamental tension between certification capability and eradication achievement reflects the distinction between having adequate tools for verification and successfully implementing strategies for transmission interruption. Current surveillance capabilities exceed those available during previous eradication certifications, yet wild poliovirus continues circulating in the same geographic areas where it has persisted for years.

The Commission's shift from eradication to elimination certification for vaccine-derived polioviruses acknowledges technical limitations while maintaining public health protection objectives. This strategic adaptation reflects understanding that current tools are insufficient for definitive eradication verification of vaccine-derived polioviruses, particularly given the indefinite challenge posed by immunodeficient individuals who, by virtue of their condition, are excreting the poliovirus.

The pathway from elimination to eradication certification depends fundamentally on bivalent oral poliovirus vaccine cessation, yet this decision requires careful balancing of risks, including potential

wild poliovirus importation threats and population immunity maintenance needs. The Commission's technical readiness cannot compensate for operational programmes' inability to achieve the transmission interruption that certification requires.

JOURNEY TO A POLIO-FREE WORLD

The GPEI's strategy *Sustaining a Polio-free World* is a significant evolution in post-certification thinking, reflecting both accumulated experience and growing awareness of implementation challenges. Its technical content is comprehensive and its risk analysis sobering in its realism. However, the strategy's ultimate success will depend not on its technical merits but on the global community's capacity to forge new partnerships, mobilise sustainable levels of funding, and maintain political commitment in an era of competing priorities and constrained resources.

Earlier in the report, the IMB has raised some fundamental points about the strategy's implementation which it asks should be considered in the ongoing consultation process.

The window for such planning is rapidly closing. As eradication goals remain elusive, donor patience wanes, and countries want to move on to other priorities. The imperative for clarity about post-certification arrangements then becomes increasingly urgent. The revised strategy provides a necessary foundation, but it is only the beginning of what must be a far more intensive process of consensus-building, resource mobilisation, addressing country-level bureaucratic hurdles, and institutional development.

DONOR COUNTRIES: SHIFTING POLITICAL PRIORITIES AND RESOURCE CONSTRAINTS

A fundamental transformation in the international development landscape is underway. It extends far beyond polio eradication to encompass changing philosophies about global donor aid. Within donor countries, that have given consistently to the Polio Programme and a diverse range of other global health priorities, there is a shift.

Generous global good approaches are giving way to more transactional, security-focused international engagement. This philosophical change reflects broader political changes in Western democracies where international assistance is increasingly viewed as a tool for national objectives rather than humanitarian solidarity.

The impact of these changes on polio, specifically, has been compounded by the disease's invisibility to younger political leaders and populations who have no direct experience with polio's historical impact. Unlike measles, which is currently causing outbreaks in countries like Canada, polio remains an abstraction for most decision-makers. This generational disconnect creates major challenges for maintaining political support even when technical arguments for continued investment remain persuasive.

It has always been the case that health ministers would ask their global health officials for assurances that there is oversight of the Polio Programme and it was still a widely supported international priority. These discussions were often at a general level with little challenge to the idea that the money needed to keep flowing though the performance was not improving. Today, ministers increasingly view annual budget discussions about polio with deep scepticism, having heard similar reassurances about imminent success for multiple consecutive years without corresponding results. This erosion of confidence reflects broader frustration with programmes that consume substantial resources while failing to achieve stated objectives within reasonable timeframes.

The officials who lead on these matters within sovereign donor governments are themselves in a difficult position.

They can feel marginalised within Polio Programme governance structures, with a systematic erosion of influence despite continued financial contributions. This disconnect reflects broader concern about traditional donor-implementer relationships and overall confidence in United Nations organisations. The addition of new funding sources has created a perception among sovereign donors that their input is less valued and their accountability expectations considered less relevant.

In the midst of trying to consolidate and sustain the reduced level of support from their governments, there is a fundamental dissatisfaction with programme accountability mechanisms that fail to provide the country-level detail and performance assessment necessary for informed funding decisions. This is in contrast to other global health programmes that provide detailed country-specific reporting and measurable outcomes. The Polio Programme's emphasis on global indicators and complex technical summaries leaves some donors unable to assess implementation effectiveness or identify specific areas requiring intervention. This reporting deficiency becomes particularly problematic when donors face increasing pressure to demonstrate concrete results to domestic constituencies.

They can even feel overwhelmed by technical reports that require specialised epidemiological knowledge to interpret, while lacking access to the simplified and neutrally-presented summary information that would enable informed policy discussions. Again, this technical opacity contrasts sharply with other global health initiatives that provide accessible reporting formats designed for non-specialist policy audiences.

"Current accountability mechanisms demonstrate significant limitations in linking performance to resource allocation."

FLUID COMPLEXITY: TECHNICAL, GEOPOLITICAL, HUMAN FACTORS

In the introduction to this report, the IMB set out a reminder of the consistency, over many years, of its findings of the factors that will determine interruption of circulation of polioviruses and the successful transition from there to a polio-free world.

Each of the three domains contains multiple such factors that will determine the Polio Programme's success or failure. Some of them are consistently present within each polio-affected country. For example, within the human factors domain, the resistance of communities to accepting the oral polio vaccine is present to some degree in key areas of Pakistan, Nigeria, Afghanistan and the Democratic Republic of the Congo. In the geopolitical domain, areas in each of these same countries are affected by conflicts restricting the operations of the Polio Programme. On the technical side, there are performance failures in basic Polio Programme functions-missed children, regular lapses in surveillance quality, low immunity levels-in parts of each country.

If the domains are explored in more depth, then the multidimensional nature

of the barriers to polio eradication is even clearer. Whether it is weaknesses in frontline team leadership, team cultures based on fear and punishment for failure, communities that are being misled by negative information, these and many other human factors are helping the poliovirus to spread. Where there is lack of political alignment and solidarity, transactional behaviour only agreeing to polio activities if demands are met, insurgents and anti-government elements denying access to vaccination teams and surveillance officers, disallowing a role for women health workers, then geopolitical factors are preventing progress.

The balance of these negative influences on the Polio Programme is different within each country but elements of all of them are also present somewhere in their Polio Programmes. At present, in Afghanistan the geopolitical factors are very dominant. In Pakistan, there is a positive political environment, but the technical delivery is not at eradication standard in enough places to stop the poliovirus; on the geopolitical front there is still insecurity and inaccessibility in the south of one province meaning that there are large numbers of persistently missed children there; the mass repatriation of people to Afghanistan has added to the existing complex population movement dynamics that were already difficult for the Polio Programme to get on top of. Monsoon-related floods have added a hugely disruptive dimension to the operating environment. In Nigeria, the leadership and management of the technical aspects of the programme have not nearly reached the high level of performance required; the geopolitics relevant to polio continue to be dominated by the activities of Boko Haram and local gangs creating insecure and inaccessible areas whilst there is also political tension with some neighbouring countries.

Few of these complex geopolitical, technical and human factors contexts remain static. For example, in Borno State Nigeria, the ongoing insurgency led by Boko Haram, alongside its splinter factions, has resulted in the situation in 2025 deteriorating considerably.

Humanitarian agencies reporting a sharp spike in cases of severe acute malnutrition among children under five years old. It is very difficult for the global Polio Programme to assess the impact of this additional layer of complexity with the primary responsibility for ameliorating it resting with the government of Nigeria.

Shifting geopolitics has been more positive in inaccessible areas of the Democratic Republic of the Congo where improvement in the situation emerged through dual-track diplomacy involving both Qatar and the United States. A breakthrough materialised in July, 2025, when the Democratic

Republic of the Congo and Angola governments and M23 insurgents signed an agreement committing all parties to a permanent ceasefire, cessation of hostilities, and establishment of confidence-building measures, including restoration of state authority throughout national territory. The sustainability of this settlement, despite the diplomatic momentum, will be a key determinant of whether the Polio Programme in this country can drive forward to finish the job.

Whilst the challenges in the four countries discussed here are at the heart of the goal of eradicating polio, there are many other countries that are crucial in interrupting circulation of type 2 vaccine-derived poliovirus and many more in creating the level of polio immunity necessary for delivering a polio-free world. These countries also have complex political, socio-economic and cultural dynamics that affect the will, the prioritisation, the resource levels, the infrastructure and the feasibility needed to eradicate polio. Some of these countries and areas are fragile and conflict-affected; in the current context Yemen, South Somalia, Gaza are included in the scope of the Polio Programme's concerns.

Over the years, some individual leaders of the Polio Programme have said to the IMB privately: "We are a technical programme, geopolitics is someone else's business." This is to underestimate the influence that regional and in-country staff can have on government leaders. It is also a comment that side-steps the responsibility that this "technical business" is not done very well anyway. The very fact that nearly half of all polio vaccination campaigns over the last decade may have been worse than the one that preceded it shows the difficulty in achieving an eradication standard of implementation consistently. The IMB has repeatedly urged the Polio Programme to adopt modern management approaches and in particular to embrace quality improvement methodology, including better use of data.

What has also been a striking anomaly in the Polio Programme's operating model has been that funding is allocated whether programmatic performance at global or country level is good or bad. That is still the case today. It is surprising that funders have never seemed to view themselves as investors. This has undoubtedly encouraged transactional approaches, lack of country ownership, avoidance of difficult decisions, and, at times, outright complacency.

Current accountability mechanisms demonstrate significant limitations in linking performance to resource allocation. Despite repeated calls for improved accountability systems, implementation has

"The oral polio vaccine is a focus for attention, negotiation, resentment, hostility and a regular, reliable source of incoming money; eradication is perceived as a goal that the West desperately wants to achieve."

proven elusive due to political sensitivities and reluctance to enforce consequences for underperformance.

The current crisis ultimately tests whether GPEI can transition from a resource-abundant programme with inconsistent accountability to a strategically focused initiative that maximises impact within available means. The outcome will determine not only polio eradication prospects but also the credibility of ambitious global health goals in increasingly challenging operational environments.

The other enduring feature of the Polio Programme over the last decade and a half has been the perception of the oral polio vaccine. It has become heavily politicised. In many polio-affected and polio-vulnerable countries, the multiple knocks on the door are resented. In many of the poorest communities, there is deep-seated anger that the oral polio vaccine is being pushed at them when their government is not helping to meet their many needs for basic services. That leads to the vaccine being rejected and hostility to it mounting. A true whole-of-government approach would reduce this anger.

On top of this, the oral polio vaccine has been repeatedly used as a tool for insurgents, marginalised and under-served communities to bargain for services, concessions or money in turn for granting access for vaccination teams. Similarly, it has also encouraged interest groups with a diverse list of demands to set up boycotts against vaccination in their communities. As many as 100 of these were operating in south Khyber Pakhtunkhwa alone in 2024. In Pakistan, Provincial Secretaries have been very hands-on in resolving these problems whilst the social mobilisation work of UNICEF has long been championed

by the IMB. It is a massive challenge to keep all these communities in a place of acceptance of the vaccine.

The oral polio vaccine in vertical programme delivery mode stands out from other vaccines and services. It is a focus for attention, negotiation, resentment, hostility and a regular, reliable source of incoming money. Arguably, it also has a pro-Western profile in the way that it is perceived: a goal that the West desperately wants to achieve, and many others are indifferent or ambivalent about.

It is fair to say, though, that whilst the polio vaccine is perceived in a somewhat unique way, wider anti-vaccination sentiment is considerable, fuelled partly by unfavourable powerful social media algorithms and by global political processes. Oral polio vaccine is also caught up in that, but, more importantly the essential immunisation programme so vital to achieving a polio-free world is potentially at risk.

EXISTENTIAL QUESTIONS AND THE TEST OF COMMITMENT

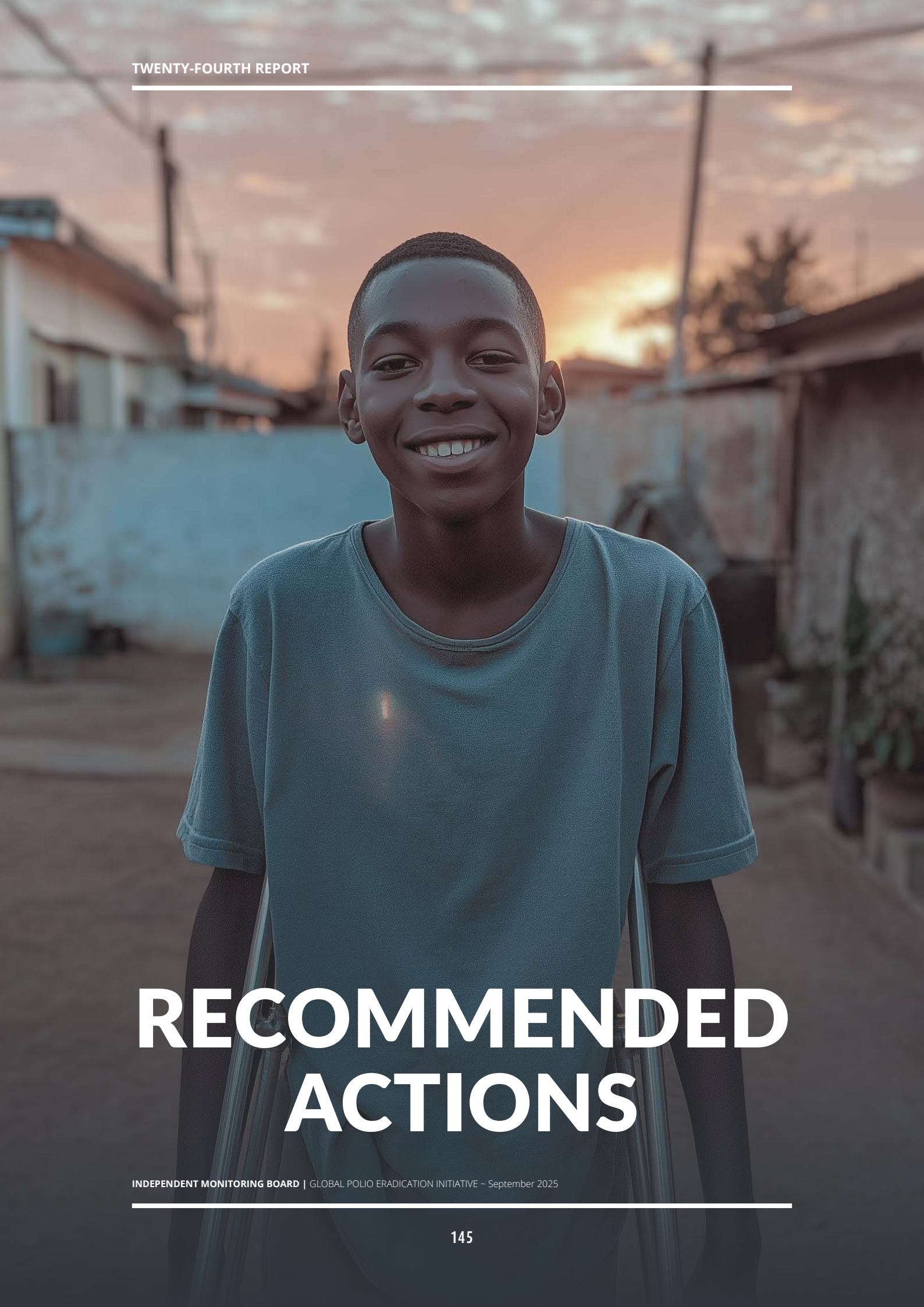
While the magnitude of funding losses creates genuine risks to programme continuity and eradication timelines, the crisis also forces long-overdue examinations of resource allocation efficiency, performance accountability, and strategic prioritisation.

Success in navigating this crisis requires balancing immediate operational needs with longer-term strategic positioning. Short-term resource mobilisation and operational adjustments must support sustainable funding models and enhanced performance management systems that can function effectively in a more constrained resource environment.

The stakes could not be higher—not only for the millions of children at risk of paralysis, but for the credibility of global health governance itself.

The coming year will test the resilience, adaptability, and commitment of the global health community as never before.

The glass mountain of polio eradication has proven unclimbable through traditional approaches. Fresh thinking, institutional courage, strategic realism, broader programme design, and unambiguous country buy-in are the only remaining paths to the peak.



RECOMMENDED ACTIONS

RECOMMENDED ACTIONS

THE FOUNDATION FOR THESE RECOMMENDATIONS

The recommendations that follow address systemic weaknesses in the global architecture of polio eradication that have enabled persistent transmission to continue despite decades of effort and billions of dollars invested. While much of this report documents continued challenges in Pakistan, Afghanistan, and Nigeria—the major countries where poliovirus circulation persists—the IMB has deliberately focused its formal recommendations on structural and strategic changes that transcend individual country programmes (with some exceptions).

This approach reflects a reality: the fundamental barriers to eradication are not only technical deficits that can be resolved through country-specific guidance, but rather systemic failures in accountability, integration, resource allocation, and strategic coherence that characterise the global programme itself.

The 23rd IMB report contained extensive country-specific recommendations for Pakistan (removing fear-based management cultures, creating space for quality improvement), Afghanistan (implementing house-to-house vaccination in Kandahar), and Nigeria (urgent programme reform and accountability mechanisms). The limited progress on these recommendations, despite their continued relevance, demonstrates that country-level exhortation alone is insufficient to drive the transformative changes required.

The persistence of wild poliovirus in the same geographic areas of Pakistan and Afghanistan where it has circulated for years, coupled with Nigeria's role as the epicentre of vaccine-derived poliovirus spread across Africa, reflects deeper structural problems in how the global programme operates. These include: performance-blind funding mechanisms that provide resources regardless of outcomes; fragmented integration approaches that fail to leverage synergies with essential immunisation; governance structures that sideline key technical expertise; and accountability systems that generate reports rather than consequences.

The recommendations therefore target the systemic changes necessary to create conditions under which country programmes can succeed. Enhanced regional accountability through the WHO Eastern Mediterranean Regional Ministerial Polio Subcommittee, performance-based funding mechanisms, and strengthened integration frameworks are designed to address the root causes of programme stagnation rather than its symptoms.

This strategic focus should not be interpreted as diminished concern for country-level performance. In addition to reasserting the importance of its unadopted recommendations in its last (and earlier) reports, the IMB strongly endorses the more granular recommendations made by the Technical Advisory Group (TAG) and the critical overviews made by the Strategic Group of Experts on Immunization (SAGE). The need for Afghanistan to implement house-to-house vaccination nationwide, for Pakistan to achieve consistent technical excellence across

all provinces, and for Nigeria to restore the programmatic dynamism that once eliminated wild poliovirus remains as urgent as ever. However, 14 years of IMB reporting have demonstrated that urging countries to improve while maintaining dysfunctional global systems yields limited results. The path to country-level transformation lies through global programme reform.

1. Move accountability for stopping wild poliovirus in the two endemic countries to the WHO Eastern Mediterranean Regional Office (EMRO) Ministerial Polio Subcommittee to lead on policy, prioritisation and oversight.

There is no clear prospect of wild poliovirus circulation being stopped in Afghanistan, nor any sign that the leadership of the country has taken ownership of the need to do so. Polio funding has become an essential core part of its wider economic needs. Despite strong political leadership, Pakistan is struggling to achieve technical excellence and resolve access barriers in key geographical areas. Since the ministerial committee was set up (after an IMB recommendation) it has played a strong polio leadership role. This is enhanced by a very committed WHO Regional Director. A new way of managing wild poliovirus would have major advantages in creating peer-based performance accountability covering priority-setting, challenge, value for money, and performance oversight. It also potentially mitigates a major and long-standing difficulty of the Polio Programme: the strong public perception that polio eradication is something that: "the West wants." This profile for the polio essential functions and teams has led to strong transactional behaviour (access denied by anti-government elements, multiple boycotts demanding concessions in return for cooperation); anger and suspicion in polio-affected communities; and, most seriously, multiple deaths of polio workers and security officers. A de-politicisation and shift of perception and ownership could take place. A further advantage could be access to skilled technical abilities and public health leadership in the EMRO member states in supporting teams in the two endemic countries. Access barriers in Yemen and Somalia should also be resolved as part of this regional focus. These arrangements would still require strong global leadership and WHO Head of Polio would work closely with the Regional Director and the ministerial committee. It would be confusing to retain the EMRO polio hub under this arrangement.

2. Implement performance-based funding mechanisms with clear accountability measures and consequences for non-performance.

The Polio Programme has historically operated largely without performance-based funding mechanisms, providing resources but no accountability measures for non-performance. This absence of conditionality has enabled persistent underperformance without consequences, undermining programme effectiveness, resource utilisation and potentially stifling new ideas. It would never be tolerated in any other field of investment. Implementation will also require a clear plan and a drastic revision of how country programmes are currently being evaluated and monitored.

3. Delegate more technical functions and capacity to the Pakistan Polio Programme.

Wild poliovirus developments occur very rapidly in Pakistan and once circulation becomes re-established it can take months to come back under control. Delays caused by deliberation at regional, global and even national level can work against an effective response. The Polio Programme should delegate and strengthen provincial-level technical capacity for real-time decision-making and rapid programme adjustments.

4. Commission and publish a comprehensive impact assessment of US government funding cuts and institutional changes on global polio eradication prospects.

The withdrawal of US funding represents the most significant disruption in GPEI history, yet the Polio Programme lacks a publicly available systematic assessment of cascading impacts beyond immediate budget shortfalls. A comprehensive impact statement should quantify not only direct financial losses (plus USAID and CDC contributions) but also the operational consequences of losing technical expertise, laboratory capabilities, surveillance coordination, and institutional knowledge accumulated over decades. The assessment should identify which technical functions and human resources have been lost or degraded and the planned alternative arrangements. This analysis is essential for donor confidence, strategic planning, and ensuring that mitigation strategies address actual rather than assumed vulnerabilities. The impact statement should be published transparently to demonstrate accountability and inform immediate strategic and operational policies, plans and decisions.

5. Strengthen and comprehensively extend coordination and accountability mechanisms for integrated vaccination delivery.

Integration coordination and accountability processes between the global levels, the regions and the countries are weak. Unless there are global, regional and country focal points with clear institutional mandates and authority to undertake integration, then it will remain fragmented. Also, there is limited alignment and prioritisation of integration. Consensus on the value and the scope of integration is still quite limited, with a persistence, to some degree, of siloed behaviour amongst of all partners at the global, regional and the country levels.

6. Mount an emergency programme with outreach capabilities to rapidly increase inactivated polio vaccine coverage in key geographies.

There is an urgent need to rapidly increase uptake of inactivated polio vaccine coverage (including in its fractionated dose form), ensuring that it goes preferentially to the areas with the lowest levels of immunity and most zero-dose children. There is no current management capability or system to do this. This is not a reason to ignore the imperative to act. The GPEI, working with Gavi, the WHO's Essential Programme of Immunization and UNICEF should actively manage this as a matter of urgency.

7. Ensure that all measles campaigns include polio vaccination.

Current sub-optimal measles immunity means that there is heightened activity in measles immunisation. The implementation of a more systematic and comprehensive approach to integration during and outside campaigns is essential. This means co-delivery of multiple vaccines and other health interventions at the time of campaigns improves delivery efficiency, the population numbers covered and vaccine uptake. Measles should be the exemplar for this and no opportunity should be lost for polio.

8. Appoint immediately the WHO Director of Immunization, Vaccines and Biologicals (IVB) as a full member of the GPEI Strategy Committee.

The success of integrated delivery systems is essential to stopping poliovirus and achieving a polio-free world and depends on a key quartet of leadership, organisations and people: the GPEI, Gavi, UNICEF and WHO IVB (the essential immunisation division) working with countries and other partners. Despite requests to attend, the Director of IVB has not been an attendee at the GPEI Strategy Committee meetings until June 2025. She is still not a full member. This makes no sense whatsoever and worse sends a confusing message about accountability and planning capability for integrated delivery systems.

9. Set out clearly the implications of the new Gavi 6.0 prioritisation framework for polio eradication and the path to a polio-free world.

Gavi's 6.0 prioritisation framework sets an explicit goal to maximise health impact by saving as many lives as possible during its 2026–2030 strategy. Comparatively, polio does not represent a high annual burden of disease. Whilst Gavi 6.0 maintains its funding commitment to polio eradication, recognising its status as a Public Health Emergency of International Concern, the life-saving emphasis introduces ambiguity. It challenges the Polio Programme to sharpen its rationale for continued investment, emphasise its cross-cutting contributions, and promote strategic integration with high-burden disease work to ensure enduring support within a competitive global health landscape. As a member of the Polio Oversight Board, Gavi should clarify its longer term position on funding polio vaccines.

10. Undertake a comprehensive review of vaccine hesitancy and refusal patterns to inform targeted intervention strategies across all operational contexts.

The Polio Programme's approach to vaccine hesitancy remains fragmented despite evidence of increasingly complex refusal patterns spanning community hostility, religious objections, ideological resistance, and social media-driven misinformation. Current responses are largely reactive and context-specific, lacking systematic understanding of refusal drivers or evidence-based intervention strategies. A comprehensive review should map hesitancy patterns across all polio-affected areas, distinguishing between different refusal types: transactional boycotts seeking concessions, religious or ideological objections, community anger about service neglect, misinformation-driven fears, and elite-led resistance in educated populations. The review should analyse how social media algorithms and digital platforms amplify hesitancy, assess the effectiveness of current communication strategies, and identify successful counter-narratives. It should examine the relationship between vertical programme delivery and community resentment, and evaluate whether integrated service delivery reduces refusal

rates. Based on findings, the programme should develop differentiated intervention strategies rather than applying uniform approaches across diverse settings. Communications about essential immunisation should be supplemented by communication about polio, supporting and building on each other. This systematic approach is essential as vaccine hesitancy increasingly threatens not only polio eradication but essential immunisation programmes contributing to achieving polio goals.

11. Create and implement progressive solutions to strengthen data to enhance integration.

Linkage of polio surveillance information with essential immunisation coverage data is an underutilised integration opportunity. The potential for combining acute flaccid paralysis case data with inactivated polio vaccine uptake monitoring could provide enhanced sub-national coverage assessments while improving overall data quality for polio and essential immunisation programmes.

Incompatible population estimates, between both programmes, are persistently used, even when collaborating at country level. These technical coordination failures reflect broader systemic challenges in developing integrated planning and monitoring approaches. They also represent poor management to leave such a basic dysfunction unresolved.

Gavi's mandate does not include funding surveillance, but there are many potential advantages to it becoming a larger user of surveillance data. It would have better information to drive quality improvements in essential vaccination service delivery. It could reduce response times to outbreaks of vaccine-preventable diseases under Gavi's purview. Community-based surveillance detects not only acute flaccid paralysis cases, but also other human and animal vaccine-preventable diseases. Increasing reliance on surveillance data would help improve the quality of mortality data and other details Gavi needs for its accountability frameworks.

12. Urgently assess polio surveillance system resilience in the light of recent geopolitical disruption and make a clear statement of policy.

The potential loss of CDC reference laboratory services highlights dangerous dependencies on single-country technical capabilities. Regional networks with overlapping competencies, shared quality assurance mechanisms, and distributed sequencing capabilities could provide resilience against future political disruptions to technical cooperation. The uncertainties concerning CDC laboratory policy in relation to global testing should be assessed urgently.

13. Establish urgently a strong global project management team to implement scale-up of direct detection technology.

While direct detection methods offer the promise of reducing poliovirus detection times from weeks to days, their rapid scaling across multiple countries faces substantial barriers that make swift global implementation difficult within current operational frameworks.

These key barriers to progress will require a great deal of senior skilled management time to resolve. They include: validation bottlenecks (rigorous testing requirements); technical capacity gaps (many laboratories lack molecular biology expertise); infrastructure constraints (equipment and supply chain challenges); financial limitations (high upfront and ongoing costs); training bottlenecks (limited expertise for widespread training); implementation complexity (need for systematic, phased approaches).

GPEI and Global Polio Laboratory Network leadership (in collaboration with method developers) should facilitate and accelerate the evaluation of direct detection methods, ensuring that comprehensive training and in-house validation capacity are in place prior to implementation. Priority should be given to laboratories in locations where epidemiologically relevant poliovirus types are frequently detected. It must also be ensured that these laboratories are fully accredited Global Polio Laboratory Network facilities conducting routine testing, so that results from parallel testing with established methods can be reliably compared.

Where feasible, specimens could be split and subjected to both direct detection and conventional methods. As direct detection can be both more and less sensitive than conventional methods, this would optimise detection and generate knowledge immediately, avoiding further delays to the deployment of this potentially transformational technology.

Progress in this area will require agreement and commitment from all relevant parties—including GPEI leadership, Global Polio Laboratory Network laboratories, method developers, and national authorities—to ensure coordinated implementation and generation of robust, comparable data. The pressing issue is not whether one approach requires two or three additional days relative to another, but rather whether the new direct detection methods can demonstrate adequate sensitivity and specificity to meet the requirements of poliovirus surveillance, given the seriousness of invalid findings for Polio Programme strategic and operational policy decisions and resource allocation.

The GPEI has previously resisted IMB recommendations that have called for global expertise in project management to move quickly and with dynamism in highly complex areas of change within the programme. It is unlikely that the benefits of direct detection, including early closure of polio outbreaks and major financial savings will be realised without such modern management methods.

14. Redesign the metrics used to assess and communicate about programmatic performance.

The Polio Programme's presentations of progress mainly cover epidemiological data and technical indicators when the fundamental barriers are human, social factors and geopolitical factors. The focus obscures the reality that describing current barriers to eradication requires different metrics and management approaches than those traditionally employed by public health programmes.

15. Invite a representative of civil society organisations involved in polio delivery work to be a participating observer at all GPEI Strategy Committee meetings.

Civil society organisations' contribution to maintaining community-based surveillance and vaccination networks that operate in difficult-to-reach and inaccessible areas is a crucial part of the Polio Programme. The cost-effectiveness of these approaches, estimated at less than 5% of total Polio Programme expenditure, demonstrates significant returns on investment for engaging them as delivery partners. These networks' valuable assets require protection during periods of resource constraint. At present, their voice is not as prominent as it should be in global strategic programme planning discussions and decisions.

16. Provide donors with clearer accountability reports that can facilitate their discussion with ministers and help them deal with critical media coverage of aid spending.

Donors face accountability issues, including inconsistent performance indicators and a lack of country-level reporting, making it hard to track how their contributions lead to specific results. Reports they do receive are often dense and technical. The contrast with other global health programmes highlights how the GPEI has maintained reporting standards that would be unacceptable in other development contexts.

17. Seek the advice of the Africa Regional Certification Commission on which countries would benefit from a retrospective case review to find previously undetected acute flaccid paralysis cases.

The Polio Programme's retrospective case studies in Nigeria identified substantial numbers of previously undetected acute flaccid paralysis cases. A total of 580 true cases were identified from 1,196 suspected cases across three Nigerian states. The surveillance capability of all countries where there are doubts about surveillance quality should be similarly reviewed.

18. Designate a gender focal point within the GPEI at global level to guide the design of the Polio Programme in different communities to enhance effectiveness.

The household decision-making power structure to permit or refuse polio vaccination has a strong gender dimension (both of child and parent) and varies greatly across countries and between communities. The importance of getting programme design right in this respect is one of the factors that makes the difference between stopping poliovirus and enabling it to continue circulating. This should be a role that covers the whole programme. It should not be a "function" that is disaggregated to multiple individuals to make judgements. It should be a hands-on role and not a producer of advisory reports. The appointee should propose tailored solutions where gender-based barriers are impairing performance. The cross-programmatic positioning of the post will also enhance sharing of good practice. It should be styled as part of an emergency programme to achieve required impacts, not as a process of long term, "nice-to-do" development.

19. The GPEI should apply its own outbreak time-management standards to assess responses as a priority in Nigeria and the Democratic Republic of the Congo, and possibly also to other outbreak geographies.

Specifically, every new human emergence (or emergence in a new geographic area) should be assessed against the GPEI targets to determine whether all of the following GPEI timelines have been met (a simple yes or no to all four – any no means no overall), with immediate assessment and systematic monitoring in each situation of how to maintain/strengthen enablers and address/resolve bottlenecks to achieve:

- *7 days from onset of illness to reporting*
- *7 additional days from reporting to two specimens arriving in lab*
- *7 additional days to species identification*
- *14 additional days to Round Zero initiation around confirmed cases*

The goal should be to infuse a culture of data-driven continuous quality improvement into the outbreak detection and response process. The timeliness assessments must not be cumbersome or complex and designed so that they result in rapid improvement. Past outbreaks can be assessed retrospectively to

hone and simplify the methodology, which should then be applied prospectively. Release of funds for further outbreak responses could be made contingent on completion of the analysis.

20. Instigate an immediate rapid review of each outbreak situation where there have been delays in funds committed becoming available; implement improvement action in-country and across the global programme to prevent future delays from this cause.

In most GPEI supported countries, there is a clear need to distinguish between fund allocation (committed resources) and fund availability (accessible for implementation), and address the serious delays that have affected programmatic timing and effectiveness. Vaccine availability is meaningless without corresponding operational funding for personnel, transport, and campaign implementation. Sometimes funds are allocated with strict operational purposes (campaigns, essential immunisation, outreach) by international programmes. This can make them behave like silos. Every effort should be made to build population immunity by coordinating across all funding streams instead.

21. Strengthen, improve coordination and add more dynamism to the post-outbreak response integration mechanisms.

Systematic post-eradication handover processes could address these gaps through targeted outreach to zero- and low-dose children using polio microplanning data and surveillance infrastructure. The potential use of novel oral polio vaccine type 2 and fractional-dose inactivated polio vaccine in systematic outreach activities during fixed time periods could maintain population immunity while routine systems develop capacity for sustained coverage.

22. The WHO Regional Director for Africa (AFRO) should establish a polio-subcommittee of the Regional Committee to operate similarly to that in the Eastern Mediterranean Regional Office (EMRO).

The WHO AFRO Regional Office includes a polio session during Regional Committee Meetings and has quarterly calls of WHO-UNICEF Regional Directors with ministers of outbreak countries. A formal inter-ministerial sub-committee would be a stronger and more systematic approach ensuring greater and peer-based accountability.