

# Eradicating Polio

IN-COUNTRY CASE STUDIES ON THE  
FINAL PHASE OF POLIO ERADICATION







Cover: A young child receives the polio vaccine at the Malahang Health Clinic in 2018

Inside cover: Jacob Paul joins the crowd in Lae, Marobe Province, Papua New Guinea (PNG).

Photos: © Gavi/2018/AAPIMAGE-Brendan Esposito

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# Acknowledgements

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Ms. Hauwa Abbas of Silver Lining for the Needy Initiative gathered the case study, including images, on Nigeria; all information has been sourced through the National Polio Emergency Operations Center as part of the National Primary Health Care Development Agency. Ms. Liliane Dalila Boualam from WHO Headquarters contributed information for the case study on PNG.

# Letter from the Director

Dear Colleagues:



Vineeta Gupta

*Vineeta*

The ACTION Global Health Advocacy Partnership is proud to support the global effort to mobilize resources in support of the Global Polio Eradication Initiative’s (GPEI) strategy to eradicate polio. By educating policymakers and engaging strategic media in key markets, ACTION partners have contributed to successful campaigns for the GPEI since 2014. Between 2017 and 2019, ACTION helped catalyze some US\$870 million for the GPEI from Australia, Canada, Japan, and the UK.

The ACTION partnership is currently directing its advocacy expertise toward meeting the US\$4.8 billion investment case. Partners Results Australia, RESULTS UK, and Results Canada are helping to keep polio as a priority on their governments’ agendas. They are helping raise awareness of the funding gap and mobilizing grassroots volunteers, building up their polio champions among MPs, and pushing back against funding cuts while making the case for ambitious new financial pledges.

The GPEI remains a critical mechanism in ending polio because polio anywhere is polio everywhere. Through this evidence-based report, ACTION makes the case for continued, renewed, and additional commitments to the GPEI. The report takes stock of the polio situation and presents country case studies that show the nuances of the eradication challenge. ACTION aims to help build public and political will to secure pledges to the GPEI for their entire strategic period up to 2026 and, finally, putting an end to polio and children being paralyzed by this disease.

I would like to take this opportunity to express my gratitude to the ACTION Leadership Group, the team members at our partner organizations, and our many allies and collaborators. I am thankful for the incredible work done by Ben Eliasaf of Results Australia, Chhavi Bansal of RESULTS UK, Hanna Belayneh of Results Canada, and Sabina Rogers of the ACTION Secretariat. It’s a testament to the collaborative nature of the ACTION partnership.

It is with pride that I present this report to you on behalf of the partnership and hope that, together, we can mobilize resources to end polio.

In solidarity,

Vineeta Gupta, MD, JD, LLM  
Director, ACTION Secretariat



<b>AFP</b>	acute flaccid paralysis	<b>nOPV2</b>	type 2 novel oral poliovirus vaccine
<b>cVDPV</b>	circulating vaccine-derived poliovirus, a.k.a. circulating variant poliovirus	<b>NPHCDA</b>	National Primary Health Care Development Agency [of Nigeria]
<b>cVDPV1</b>	circulating variant poliovirus type 1	<b>OBR</b>	Outbreak Response
<b>cVDPV2</b>	circulating variant poliovirus type 2	<b>ODA</b>	Official Development Assistance
<b>DTP-3</b>	diphtheria, tetanus and pertussis vaccine	<b>OPV</b>	oral poliovirus vaccine
<b>FCDO</b>	Foreign, Commonwealth & Development Office [of the United Kingdom]	<b>PEI</b>	Polio Eradication Initiative
<b>GPEI</b>	Global Polio Eradication Initiative	<b>PHC</b>	primary healthcare
<b>GPLN</b>	Global Polio Laboratory Network	<b>PNG</b>	Papua New Guinea
<b>IPDs</b>	Immunization Plus Days	<b>POB</b>	Polio Oversight Board [of the GPEI]
<b>KP</b>	Khyber Pakhtunkhwa	<b>RI</b>	routine immunization
<b>LMICs</b>	low- and middle-income countries	<b>UNICEF</b>	United Nations Children's Fund
<b>mOPV2</b>	type 2 monovalent oral poliovirus vaccine	<b>US-CDC</b>	United States Centers for Disease Control and Prevention
<b>NDOH</b>	National Department of Health [of Papua New Guinea]	<b>VDPV3</b>	variant poliovirus type 3
<b>NEAP</b>	National Emergency Action Plan	<b>WHO</b>	World Health Organization
<b>NEOC</b>	National Polio Emergency Operations Center [of Nigeria]	<b>WPV</b>	wild poliovirus
<b>NEOC</b>	National Polio Emergency Operations Center [of Nigeria]	<b>WPV1</b>	wild poliovirus type 1

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Hilda Simon and her baby Matilda at the Malahang Health Clinic in Lae (PNG).

Photo: © Gavi/2018/AAPIMAGE-Brendan Esposito

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# Executive Summary

01

Since its launch in 1988, the Global Polio Eradication Initiative (GPEI) has successfully led global efforts to reduce the incidence of poliovirus infections. From a world where 1,000 children were paralyzed each day across 125 countries, the number was down to six cases of wild polio in 2021, primarily in the two endemic countries, Afghanistan and Pakistan. Cases of polio, particularly variant polioviruses (cVDPV),<sup>a</sup> still emerge too frequently in populations with low immunization rates. Suspended polio campaigns in 2020 due to the COVID-19 pandemic caused setbacks to the eradication efforts, with the pandemic also resulting in a fall in routine immunizations globally. In 2022, detection of isolates and cases in countries that have gone without either in decades is challenging the pre-existing sense of complacency around the world.

With these continuing challenges, the GPEI remains an important organization in the campaign to eradicate polio, and eradicating polio remains an important goal to achieve. Without support to the GPEI, we risk spending more to control the virus and losing ground in the campaign towards eradication, whereas investing in polio now may cumulatively save an estimated US\$33.1 billion<sup>1</sup> by 2100, while ensuring no child is ever paralyzed by this disease again.

The polio network is also an important component in addressing other disease outbreaks, including the COVID-19 pandemic. The polio program's surveillance system consists of 146 laboratories in more than 90 countries. During the pandemic, in addition to these labs, the polio program contributed 30,000 polio program staff and over US\$100 million in polio resources. Polio staff supported contact tracing, public health messaging, social distancing, and uptake of COVID-19 vaccines. Even prior to the pandemic, the polio program supported detection of measles outbreaks, yellow fever, and neonatal tetanus through its extensive and robust surveillance network.<sup>2</sup>

On October 18, 2022, Germany will co-host a polio pledging moment to secure funding to implement the GPEI's 2022–2026 strategy to eradicate polio. The total cost of the strategy implementation is US\$4.8 billion. To ensure a world free of all forms of poliovirus, it is crucial that the world fully resources the new strategy. Through this research, ACTION makes the case for continued, renewed, and additional commitment to the GPEI, by providing case studies that take stock of the polio situation in different countries alongside clear recommendations for donor markets.

<sup>a</sup> cVDPVs are a variant that can occur when the weakened strain of the poliovirus contained in the oral polio vaccine (OPV) is allowed to circulate in an under-immunized community for a long time and mutates to a form that can lead to serious illness or on rare occasions, cause paralysis. <https://polioeradication.org/polio-today/polio-prevention/the-virus/vaccine-derived-polio-viruses/>

02



Polio workers receive vaccines for the door-to-door campaign in urban, high-risk union council 8 in Fauji Colony, Rawalpindi, Pakistan.

Photo: © Gavi/2020/Asad Zaidi



### Overall status of polio eradication efforts

Since the founding of the GPEI some 30 years ago, the world has made tremendous progress towards eradicating polio, thanks to the commitment of healthcare workers, affected communities, governments, donors, and partners. Widespread vaccination programs have led to a 99.9 percent decrease in the global polio burden, with wild poliovirus (WPV) now endemic in only two countries: Pakistan and Afghanistan. The world has reduced the number of cases from 350,000 cases a year across 125 countries, to 23 cases of WPV and 292 cases of cVDPV in 2022 as of September 6.<sup>3</sup> The polio program has: certified the eradication of two of the three strains of WPV in the last decade; certified five of the world's six regions<sup>b</sup> as free of WPV since 1988<sup>4</sup>; and introduced new innovations in vaccine technology, disease surveillance, and campaign implementation. Around 20 million people today walk free of polio that would have otherwise been paralyzed without the efforts of the polio eradication network. Despite this progress, the existence of polio anywhere still means the risk of polio everywhere, and the world has felt this viscerally in 2022. The sense of complacency around polio displayed through funding cuts and decreasing political will has been challenged by the detection of isolates and cases<sup>c</sup> in countries that have gone without either in decades, including a number of high-income countries.<sup>5</sup>

These cases have shown the duality of the global health system as it relates to polio:

eradication programs have the flexibility and agility to mobilize rapidly in response to emergent situations, but the pandemic has laid bare an unassuaged vulnerability in the system that is perpetuated by global health inequities. Inequity in COVID-19 vaccine distribution and disruptions in the healthcare system have disproportionately affected the most vulnerable and led to low vaccination rates in lower income countries. Low polio vaccination rates within certain populations have an effect similar to the massive COVID-19 vaccine inequity. Both create a situation ripe for virus variant outbreaks in vulnerable communities, particularly in hard-to-reach regions in Africa, the Middle East, and some parts of the Asia-Pacific.

The GPEI's value-add lies in its integration into, and strengthening of, the healthcare systems of endemic and high-risk countries. Its new five-year strategy (2022–2026) generates greater accountability and ownership from country governments.<sup>6</sup> The strategy ramps up the integration of the polio program with other health services, supports the roll-out of new tools and innovations, tackles vaccine misinformation, further commits the GPEI to gender equity, strengthens partnerships with governments, and supports governments to improve vaccination campaigns.

In February 2022, the polio program rapidly mobilized in response to detection of WPV type 1 (WPV1) in a child suffering paralysis

<sup>b</sup> The five certified WPV-free regions are the African Region, the Americas, Europe, Southeast Asia, and the Western Pacific.

<sup>c</sup> A case of WPV1 was detected in Malawi in late 2021 and five cases in neighboring Mozambique in 2022 (neither country had witnessed a case since early 1990s); Rockland County in New York State reported a case of VDPV2 in July 2022 after almost a decade; Israel reported a case of VDPV3, and isolates of VDPV2 were found in sewage samples in Israel and London, UK, in 2022 (risking over three decades of progress).

in Malawi. Analysis showed that the virus is genetically linked to WPV1 detected in Pakistan in October 2019.<sup>7</sup> GPEI partners supported government health authorities to assess the situation and roll out nation-wide vaccination campaigns to mitigate any risk of spread in Malawi, as well as neighboring countries Mozambique, Tanzania, Zambia, and Zimbabwe. Within 24 hours of detection, the government of Malawi declared a public health emergency and activated the Emergency Operation Centre to address the polio outbreak, and within 72 hours, the GPEI Rapid Response Team arrived to support the outbreak response.

Over the past six months, the GPEI partners have mobilized millions of dollars in resources to undertake mass vaccination campaigns that will ultimately help reach over 23 million children under five years with polio vaccines in five countries. As of June 2022, the campaigns have administered almost 36 million vaccine doses to children under five years in the first two rounds across Malawi, Mozambique, Tanzania, and Zambia. Surveillance efforts by the GPEI also detected five cases in Mozambique linked to the imported WPV1 case in Malawi; four cases found since July underscore the ongoing concern around this outbreak.

The GPEI also expertly collaborates with countries and communities facing polio outbreaks by improving and innovating to stop the rising threat of type 2 variant poliovirus (cVDPV2), including supporting the rollout of the novel oral polio vaccine type 2 (nOPV2) vaccine. This next-generation, modified version of the monovalent OPV2 has been developed to decrease the likelihood of the

weakened strain of poliovirus in the vaccine reverting to a form that can cause illness or paralysis if allowed to circulate for a long time (as seen in rare instances amongst low population immunity settings with OPV), while still maintaining the high immune protection that is provided by OPVs. Clinical trials and extensive field use show it to be safe, genetically stable, and efficient at stopping cVDPV2 outbreaks.<sup>8</sup> Between March 2021 and July 2022, GPEI partners administered approximately 350 million doses of nOPV2 in 21 countries.<sup>9</sup>

In 2013, the GPEI mobilized a successful response to the importation of WPV1 from Pakistan to Syria and from Nigeria to Somalia. In 2019 and 2020, polio programs stopped nearly 80 percent of outbreaks after just two rounds of Sabin strain type 2 monovalent oral polio vaccine (mOPV2).<sup>10</sup> The GPEI has successfully stopped outbreaks of both imported WPV and of type 2 variant poliovirus outbreaks by mobilizing rapid response teams — an asset that many health systems relied on in their COVID-19 responses.<sup>11</sup>



A health worker in Pakistan administers polio drops to a child during the nationwide, door-to-door campaign in November 2020.

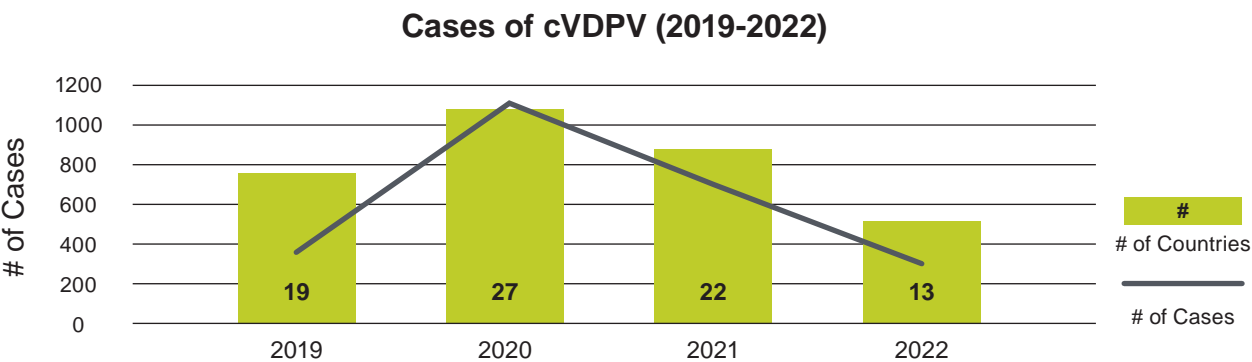
Photo: © Gavi/2020/Asad Zaidi

Impact of COVID-19

The polio eradication network showed remarkable resilience during the COVID-19 pandemic by ensuring polio surveillance continued largely uninterrupted and mobilizing to support the pandemic response. In over 20 countries, the polio infrastructure was noted to be the only framework capable of such a measure.<sup>12</sup> However, the pandemic has resulted in vast and varying disruptions to essential health services. Immunization campaigns needed to be paused for approximately four months in order to reduce the risk of spreading COVID-19.<sup>13</sup> A drastic reduction in immunization coverage and increased vaccine hesitancy have been amongst the most significant impacts.

Overall, the pandemic has resulted in the largest sustained backsliding in routine immunization coverage in approximately three decades. The number of zero-dose children (children who did not receive a single dose of vaccine) has continued to increase, from 13 million in 2019 to 18 million in 2021.<sup>14</sup> Although polio vaccination campaigns resumed by mid-2020 with polio workers making every effort to reach every child, the pause in immunization efforts, combined with challenges such as conflict, have left more children vulnerable.

Although the initial COVID-19 lockdown measures seemingly also helped to reduce the spread of this highly infectious disease, with the number of children paralyzed by wild-polio falling by 87 percent between 2019 and 2022,<sup>15</sup> outbreaks of cVDPVs nearly tripled between 2019 and 2020. Polio surveillance detected 1116 cases of cVDPV in 2020.<sup>16</sup> Although rare, cVDPVs are still of great concern. If a community is under-immunized, VDPVs can behave like “wild-polio” in the body and lead to cases of paralysis.<sup>17</sup> A successful response by GPEI partners reduced those numbers in the last two years; as of September 2022, 292 cases have been detected.<sup>18</sup>



Source: WHO, “Global Circulating Vaccine-derived Poliovirus (cVDPV)” accessed Sep 6, 2022: <https://polioeradication.org/wp-content/uploads/2022/09/weekly-polio-analyses-cVDPV-20220906.pdf>.

In many ways, the COVID-19 pandemic has fundamentally changed the health financing landscape. The World Bank estimates that the per capita government spending on health is expected to drop in 52 countries (mostly low- and middle-income countries (LMICs)) and will

Funding the End of Polio

On 18 October, the final day of the three-day World Health Summit in Berlin, Germany will co-host a pledging moment for the GPEI’s 2022-2026 Polio Eradication Strategy. The total cost of the strategy implementation is US\$4.8 billion.<sup>22</sup> However, the GPEI’s existing pledges — if paid in full — will cover just US\$800 million. The program is therefore seeking US\$4 billion in new funding for the period 2022-2026.



A vial of polio vaccine during the anti-polio vaccination drive, Nov 2020.  
Photo: © Gavi/2020/Asad Zaidi

remain below pre-pandemic levels even in 2026.<sup>19</sup> International Monetary Fund projections have also indicated a similar trajectory for external funding. In particular, grant-based external funding to LMICs, in per capita terms, is expected to fall consistently every year to 2026 due to various factors including a higher debt-to-Gross Domestic Product ratio, leading to countries reducing their development budgets.<sup>20</sup> Continuing global recovery from the pandemic, and tackling future pandemics, depends on recognition by global partners of the importance of consistent and collaborative investment in health financing. As countries continue to shift their priorities to tackle the COVID-19 pandemic and prepare for future shocks, it is crucial that the goal of polio eradication remains a key priority.

The GPEI is well placed to overcome these challenges. It has decades of experience and expertise in delivering immunization campaigns and public education, as well as building trust through community engagement and outreach. The polio infrastructure that was critical in responding to the COVID-19 pandemic currently risks not being funded and supported. Eradication is within reach, and health infrastructures require this very expertise to build resilient systems. The GPEI’s new strategy recognizes the urgency of eradication. It acknowledges that a single case of polio requires an overwhelming response that interrupts transmissions promptly and reflects a more integrated approach with other healthcare services. Under this strategy, the GPEI will also continue to support countries in tackling emerging health threats, including the COVID-19 pandemic, and in improving the broader health of communities.<sup>21</sup>

The estimated cost is based primarily on eight factors, including immunization activity in the two remaining endemic countries, surveillance, large-scale response to polio outbreaks, and an appropriately sized stockpile of oral poliovirus vaccine. The cost estimate over five years includes funding that will also benefit essential health system functions beyond polio eradication, such as surveillance and technical assistance. The global polio surveillance infrastructure is a valuable health system asset that also supports the detection and monitoring of other infectious diseases.



# Background

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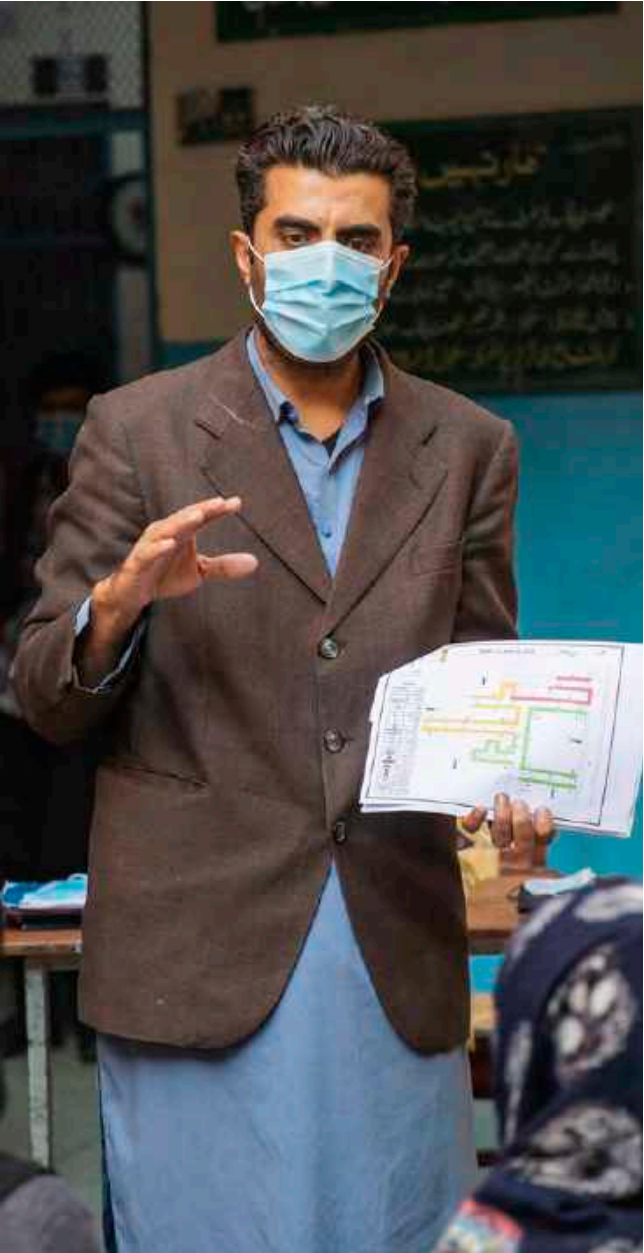
Without investment now, by 2032 the world would be spending more to control the virus than to eradicate it: the cost of dealing with a perpetual polio epidemic would quickly exceed the costs of the current eradication effort. Investing in polio now may cumulatively save an estimated US\$33.1 billion by 2100.<sup>23</sup>

The coming five-year investment is, therefore, very much an upfront investment in future savings, which come in the form of reduced costs of surveillance and vaccination. Once polio has been eradicated globally, polio immunization can be scaled down, and polio infrastructure and expertise can be redirected to serve other health initiatives, such as essential immunizations, comprehensive vaccine-preventable disease surveillance, and outbreak preparedness and response. Failing to commit to eradication would mean spending more for a worse outcome over a long period.

A fully funded polio eradication effort means 370 million<sup>24</sup> children will be vaccinated each year for the next five years, including vaccination campaigns to reach all children aged under 5 years wherever needed. It also means continuing global surveillance in 50 countries to detect any poliovirus from any source. It means the end of the line for the poliovirus.

The effort to eradicate polio is in its final stretch, and with WPV transmission at low levels, the world has an historic opportunity to end polio for good. WPV circulation is restricted to just a few high-risk geographic pockets, but as in any marathon, the final stretch is the most difficult. There are still challenges to stopping all forms of polio, necessitating urgent action to seize this historic opportunity.

Leaders of polio-affected countries, donors, and partners must seize this historic opportunity to deliver a polio-free world at the GPEI's pledging event on October 18.



Abid Khan, communications support officer for the Union Council, briefs polio workers gathered at a school on engaging care givers hesitant to get children vaccinated in Pakistan.

Photo: © Gavi/2020/Asad Zaidi

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A young child receives polio drops during a nationwide, door-to-door campaign in the high-risk union council 8 in Fauji Colony, Rawalpindi, Pakistan.

Photo: © Gavi/2020/Asad Zaidi



# Case Study Nigeria

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Health workers travel and receive patients as well as educating them on the value of vaccines and benefits of health.

Photo: © GAVI/2013/Adrian Brooks

## AT A GLANCE

Nigeria detected its last case of wild poliovirus in August 2016. However, an upsurge in circulating variant poliovirus type-2 has persisted since 2021.

The polio program continues to serve as a strong foundation for immunization systems that protect the population against vaccine preventable diseases.

Nigeria was the first country to introduce the novel oral polio vaccine type 2 in March 2021.

The territorial boundaries of countries as shown on maps in this report are neither accurate nor authentic, and do not represent the actual and sovereign claims of any government.

# Case Study: Nigeria

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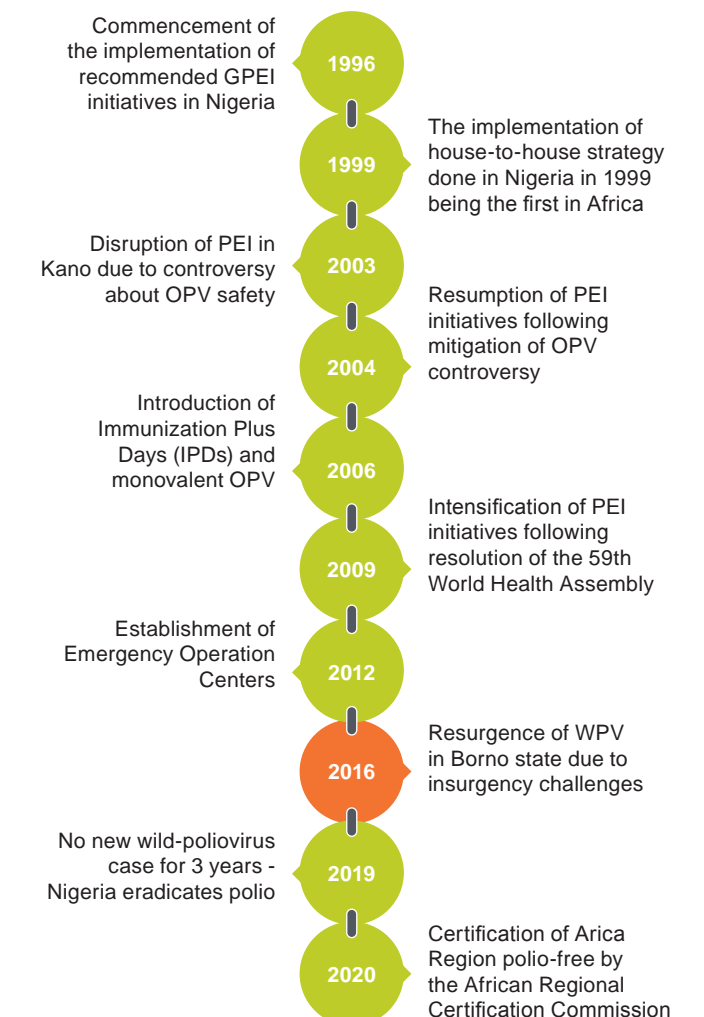
Nigeria was the last African country to be declared wild polio-free after the last case was detected in August 2016. This led to the African Regional Certification Commission certifying the African region wild polio free on August 25, 2020. However, an upsurge in circulating variant poliovirus type-2 (cVDPV2) has persisted since 2021. As of September 6, 2022, there were 33 cases of cVDPV2.<sup>25</sup> As part of the outbreak response, Nigeria was the first country to introduce the novel oral polio vaccine type 2 (nOPV2) in March 2021. A total of 38 Outbreak Responses (OBRs) between March 2021 and July 2022 using over 279 million nOPV2 doses have been conducted to help protect over 50 million children under the age of 5 in all States.

Polio vaccines are part of the routine immunization (RI) schedule in Nigeria, including oral polio vaccines as well as inactivated polio vaccines. Therefore, the polio and RI infrastructure in Nigeria are closely linked, and any decline in RI coverage rates also affects population immunity and the risk of polio transmission. Overall, RI coverage (based on DTP-3<sup>d</sup> coverage) in Nigeria has improved from 2017 to 2021 (33 percent to 56 percent). However, this remains below the Immunization Agenda 2030 target of 90 percent coverage, and there are over 2.2 million zero-dose<sup>e</sup> children in Nigeria.<sup>26</sup>

In order to sustain Nigeria and Africa's wild polio-free certification and achieve eradication, the GPEI and immunization systems in Nigeria need to be fully resourced and work together under a comprehensive and strong primary healthcare (PHC) system. The National Primary

Health Care Development Agency (NPHCDA) has embarked upon a transformative system that aims to ensure functionality of at least one PHC facility per Ward across the 9000-plus wards in Nigeria. It is important to note that the polio program has and continues to serve as a strong foundation for the immunization system that offers a platform to boost population immunity against vaccine preventable diseases.

## Nigeria's journey to a wild polio-free status was long and laborious, however memorable.



<sup>d</sup> DTP: Diphtheria-Tetanus-Pertussis.

<sup>e</sup> Children who don't receive a single dose of vaccines such as DTP-1.



*“The over two decades of the PEI programme to eradicate wild polio virus in Nigeria that resulted in the interruption of WPV transmission in 2016 and Certification of Nigeria and the African Region (...) wouldn’t have been possible without the funding support coming from the GPEI partners.”*

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### Opportunities for eradication

Despite these challenges, opportunities exist for eradication. These require: 1) renewed commitment from the Government of Nigeria to continue to support the polio program and interrupt transmission of cVDPV2 until the country is free of any form of polio; 2) improved integration of services and improved coverage of immunization; and 3) renewed partner and donor support to the GPEI through funds and technical support.

### Stronger together

The GPEI is working to interrupt the upsurge of cVDPV2 by providing technical support and funds for outbreak response and surveillance. Programs are also being established to provide surge workforces and deploy epidemiologists for planning and implementation.

Dr. Usman Adamu is a director and incident manager at the National Primary Health Care Development Agency in Nigeria (NPHCDA). Since 2000, he has been involved with the Polio Eradication Initiative (PEI) program and has worked in different capacities in almost all parts of Nigeria. He has led the NEOC team since 2016 and has worked closely with representatives in Nigeria as well as GPEI partners globally at various international meetings.



*Dr. Usman Saidu Adamu Incident Manager at NEOC NPHCDA providing polio drop to a child. Image sourced by Ms. Hauwa Abbas of the Silver Lining for the Needy Initiative.*

## Case Study: Nigeria

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### Living with polio and working with the GPEI

Misbahu Lawan Didi from Kano State, Nigeria was born in 1973, the third eldest amongst 13. He was diagnosed with polio at age two and has been unable to walk since. When recalling some of his earlier experiences, Misbahu spoke about stigma, the death of both his parents as well as the strong influence of his grandmother:

*“I have encountered problems such as discrimination, the challenges in movement, being looked down on by others. I lost both my parents at around the age of 13 within 41 days of each other; this was a major challenge to me. My grandmother encouraged me to be hard working, bold, self-sufficient, and to never look down on myself; this helped me a lot growing up.”*



*Misbahu Lawan Didi (on the tricycle), founder and president of Para-soccer Federation of Nigeria, with members. Image sourced by Ms. Hauwa Abbas of the Silver Lining for the Needy Initiative.*

Misbahu has since committed himself to raising awareness about the importance of polio vaccinations and improving community engagement:

*“I lead over 2000 polio survivors in actively participating in the polio eradication awareness in Nigeria. We partnered with government agencies, UNICEF, and other partners [within] Global Polio Eradication Initiative. I always lead the awareness campaigns and supervise the [National and Sub-national Immunization Plus days] in the high-risk states in the Country.”*

Misbahu also reflected on his motivation and role as an advocate:

*“In the past, the polio program has faced resistance, [but] we are seen as a practical example of the negative effect of the polio virus; this encourages many Nigerians to accept oral polio vaccination in the country. Our activities of advocacy and awareness in the north [remind] parents that polio is real and children are at risk without vaccination. The agencies appreciate our efforts. Our advocacy is simple and effective because we are polio survivors.”*

<sup>f</sup> National and Sub-national Immunisation Plus days are house-to-house immunization campaigns targeting all under-five children in the country and/or high-risk states that have confirmed cases of polio.



## Case Study Pakistan

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Top Left: A young girl showing her little finger, which was marked after administering polio drops to her during nationwide, door-to-door campaign in Fauji Colony, Rawalpindi, Pakistan.

Photo: © Gavi/2020/Asad Zaidi



Right: A community-based vaccinator administering polio drops to a child.

Photo: © WHO Pakistan/A. Biernat



Bottom Left: Polio worker vaccinating a child at a permanent transit point along a border area in Pakistan.

Photo: © UNICEF/PAK2016/Waseem Niaz

### AT A GLANCE

In Pakistan, cases dropped from approximately 20,000 every year in the early 1990s to only 1 case in 2021.

Although wild poliovirus has now been eradicated from most of the world, the virus remains endemic in Pakistan and neighboring Afghanistan.

The mobilization of women health workers, who are trusted members of their communities and are best placed to discuss the benefits of vaccination, has helped combat vaccine hesitancy in Pakistan.

## Case Study: Pakistan

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### Epidemiological context

Although wild poliovirus has now been eradicated from most of the world, Afghanistan and Pakistan remain the last holdouts of the virus. Pakistan and Afghanistan are considered one single epidemiologic block.<sup>29</sup> Due to deep social, cultural, and economic ties and large-scale cross-border population movement, both countries must interrupt poliovirus transmission for either country to achieve and sustain eradication. This case study focuses on Pakistan only, primarily due to the greater population size.

Since the launch of Pakistan's Polio Eradication Programme<sup>30</sup> in 1994, there was a massive decline in polio cases on both sides of the border. In Pakistan, cases dropped from approximately 20,000 every year in the early 1990s to only 1 case in 2021.<sup>31</sup> Additionally, cVDPV2 transmission has been interrupted, with no isolates detected since August 2021.

Starting in April 2022, however — after 15 months of no wild polio cases in Pakistan for the first time in history — a localized outbreak began in the North Waziristan district of southern Khyber Pakhtunkhwa (KP) province, one of the most difficult and high-risk environments for polio transmission globally. As of September 1, 2022, 18 cases of wild polio have been recorded in Pakistan, all localized to districts of southern KP.

It is encouraging that wild polio cases in Pakistan remain lower than those recorded in previous years (84 cases in 2020 and 147 cases in 2019), and the genetic diversity of

wild poliovirus in the endemics has been reduced to just two clusters (down from four in 2020 and eight in 2019), highlighting that the country has a unique window of opportunity to eradicate wild poliovirus type 1 for good. This being said, the outbreak in southern KP continues in 2022 and environmental isolates of WPV1 have been detected in 10 districts of Pakistan, including in historical reservoirs such as in Peshawar, Lahore, and Karachi. The recent unprecedented levels of flooding across the country also pose challenges to the polio program's ability to respond quickly to the ongoing outbreak and to deliver vaccines to every last child.

Though Pakistan and Afghanistan are the last two countries that are endemic for the wild virus, polio anywhere is a threat to children everywhere. Until the world has halted transmission of all forms of polio, all countries remain vulnerable to outbreaks. The virus can and does spill over from these entrenched reservoirs. Earlier this year, a wild poliovirus infection, genetically linked to a strain that was detected in Pakistan in 2019, paralyzed a three-year-old girl in Malawi<sup>32</sup> — the first wild polio case in the country since 1992.

Local, female social mobilizers and vaccinators in Pakistan are helping increase immunization rates among the hardest to reach communities.



Photo: © UNICEF

<sup>†</sup> National and Sub-national Immunisation Plus days are house-to-house immunization campaigns targeting all under-five children in the country and/or high-risk states that have confirmed cases of polio.



# Case Study: Pakistan

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## Challenges to eradication

Pakistan formally launched national anti-polio drives in 1994, and tens of thousands of vaccinators have since been staging regular inoculation campaigns across the country. Despite tremendous progress, polio vaccination drives in Pakistan have suffered setbacks due to a combination of factors,<sup>33</sup> including insecurity and community resistance stemming from false rumors and politicization of polio and vaccinations.

The main problem is that the massive vaccination campaigns are still not reaching every child. A significant number of missed children persists in some districts (more than three percent against the target of zero), almost all in core reservoirs, and mainly due to community resistance and operational challenges.

Reaching high-risk, mobile communities has been particularly difficult — campaign reach has been made more challenging with marginalized populations at high risk for polio, specifically Pashto-speaking communities that represent 15 percent of the country's population yet bear a disproportionate burden (81 percent) of Pakistan's WPV cases over the last 10 years.<sup>34</sup>

Vaccine hesitancy in some communities in Pakistan is one of the barriers to polio eradication efforts. Militant groups in the country have killed more than 100 vaccinators<sup>35</sup> and their security guards since 2012. Vaccine hesitancy, bolstered by misinformation about vaccines and vaccination programs circulating widely through social media platforms, contributed to rising refusal rates in 2019, for example. General mistrust in some communities has resulted in parents avoiding

vaccination for their children and going as far as falsely marking<sup>36</sup> their children as vaccinated. The mobilization of women health workers, who are trusted members of their communities and are best placed to discuss the benefits of vaccination, has helped combat vaccine hesitancy.

Refusals can also occur in communities in the most challenging areas, that are in need of many other basic health services and infrastructure, making polio a bargaining chip.

## Opportunities for polio eradication

Despite complex challenges, the story of polio in Pakistan is one of astounding hope — a quintessential testament to what can be achieved when the world comes together with great resolve. The marathon to eradicate polio in Pakistan is on its final stretch, bringing us closer to a polio-free world.

The path<sup>37</sup> to eradication in the final endemic countries will take,

- increased political will at all levels of government and with all local actors, through a commitment to the apolitical value of polio eradication;
- a deep and enduring partnership with marginalized communities, especially those living in the highest-risk districts for polio;
- a well-functioning program with a motivated and appropriately staffed frontline workforce, who consistently deliver vaccines to the doorstep of every household, or at every opportunity in areas where household access is restricted; and

Photo: © WHO Pakistan / A. Zaidi

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- an integrated service delivery approach that prioritizes essential immunization and the provision of other health services, and a continued investment in and improvement of surveillance quality and timeliness of detection.

With support from the GPEI, Pakistan has the opportunity to stop the spread of the virus by reaching every child under five years of age with the polio vaccine. Each National Immunization Day, more than 300,000 community health workers vaccinate over 40 million children.<sup>38</sup>

It should also be noted that Pakistan currently has the largest<sup>39</sup> environmental surveillance network in the world and is working to expand this network even further. In between vaccination drives, Pakistan's surveillance workers are constantly hunting for signs of acute flaccid paralysis in children and testing the environment for the presence of the virus.

To address challenges and certify the end of wild poliovirus transmission by 2026, the GPEI has launched a new strategy to transform its approach to permanently interrupt all poliovirus transmission in the final WPV-endemic countries of Afghanistan and Pakistan — by employing all opportunities to vaccinate children, build collective ownership and accountability of the eradication effort.

The program will use every available opportunity to ensure polio eradication remains a top public health priority for the government, including the National Task Force chaired by the Prime Minister, the Provincial Task Forces chaired by provincial chief ministers, and through direct engagement by world leaders and the Polio Oversight Board (POB) in all appropriate forums. The GPEI

will also continue to provide full support to the government and country program, including through National Emergency Action Plans (NEAPs).

By partnering with communities and local governance structures, and using context adapted vaccination strategies, the program will facilitate better health opportunities for children, while also reaching the goal of global polio eradication. For example, in both Afghanistan and Pakistan, recruiting, training, and retaining women as vaccinators, community mobilizers, and surveillance officers is a priority for the GPEI and is considered essential to campaign success, as access to children is frequently contingent on the presence of female health workers.

Recognizing that the critical path towards eradication requires a gender lens, the Pakistan polio program has also established a national gender group. This group is rolling out an initiative to systematically listen to female frontline workers across the highest risk areas for their ideas on how to better reach missed children, to understand their experiences and motivations, and to co-design solutions to remaining challenges together.

Even with the new polio cases in Pakistan, the virus is still circulating at very low levels and the world has an historic opportunity<sup>40</sup> to make sure this virus never paralyzes a child again. The fact is, we've never been closer to ending polio and it is critical that the world does not lose sight of this goal. The last mile to end polio, of course, will be challenging. And, that is why it is important that the world keep up its support for the polio programs in Pakistan and Afghanistan by continuing its investment in the GPEI.



## Case Study

# Papua New Guinea

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Young children and their parents are seen at local health clinics in Lae, Morobe Province, Papua New Guinea, where the polio vaccine is administered to children, on July 24, 2018. A confirmed variant poliovirus (VDPV) in Lae was reported to the WHO on June 21, 2018. Four rounds of supplementary immunization activity targeting children less than five years of age was planned from July to October 2018 to combat the virus.



Photos: © Gavi/2018/AAPIMAGE-Brendan Esposito

### AT A GLANCE

PNG was determined to be a high-risk country for wild poliovirus importation in 2012.

The national polio immunization programs reported administrative coverage rates between 93 percent and 97 percent.

With increased surveillance measures, no further polio cases have been detected since 2018.

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## Case Study: Papua New Guinea



Six-year-old Gafo from Morobe province during a regular physiotherapy session with Dr Winnie Sadua.

Photo: © Gavi/2018/AAPIMAGE-Brendan Esposito

In April 2018, a six-year-old child named Gafo from Morobe province was taken to the hospital with symptoms of acute flaccid paralysis (AFP).<sup>41</sup> Stool sample testing confirmed that Gafo had been infected by variant poliovirus type 1.<sup>42</sup> Gafo had previously received two doses of oral polio vaccine (OPV), and while this vaccine is safe and effective, on very rare occasions — and only in under-immunized populations — the live, weakened virus in OPV can circulate in a community for an extended period of time and revert to a form that causes paralysis.

Papua New Guinea (PNG), along with the rest of the Western Pacific region, was declared free of polio in 2000. This followed decades of intensive vaccination across PNG and its final case of WPV being recorded in 1996.<sup>43</sup> However, risks remained. In 2012, a global panel of experts conducted an assessment and determined that the risk of WPV importation for PNG (and some other countries in the Western Pacific, including the Philippines) was high.<sup>44</sup> Low vaccination rates, poor sanitation, and a breakdown in health infrastructure contributed to the risk.

With significant gaps in the quality and coverage of health infrastructure, and the majority of PNG's population living in difficult-to-access rural areas,<sup>45</sup> disease outbreaks present a major threat.



# Case Study: Papua New Guinea

## Outbreak response

To contain a potential spread, health workers reached out to members of Gafo’s family and community. Poliovirus was detected in stool samples from two of Gafo’s healthy close contacts, and on June 22, the PNG National Department of Health (NDOH) declared an outbreak of circulating variant poliovirus type 1 (cVDPV1).

The first of several rounds of subnational supplementary immunization activities in polio-affected provinces began soon after. OPV doses were provided to children under the age of five at health centers and schools, and health workers also reached children in a house-to-house campaign. As surveillance efforts ramped up, cases were detected in other provinces and the PNG government launched a national response.

The polio outbreak spread throughout PNG, causing a total of 26 cases in a period of months. This led to eight rounds of polio campaigns in 2018–2019, including three sub-national and five nationwide vaccination campaigns.

## Stronger together

The GPEI partnership played a crucial role in the PNG outbreak response from the outset. Working closely with PNG’s NDOH, the GPEI supported a rapid response to the outbreak in PNG by mobilizing resources, deploying experts, and providing technical advice. Drawing on a global network, the GPEI worked with the PNG government to respond early. In the first three months of the response, more than 90 international public health and response workers were deployed to support supplementary immunization, enhanced surveillance, and risk communication in Papua New Guinea.

International cooperation was also critical for diagnosis and testing. Through the Global Polio Laboratory Network (GPLN), stool specimens were collected by clinicians at the provincial level and shipped to the Central Public Health Laboratory Surveillance Unit, in Port Moresby. Samples were labeled, packed, and shipped to the WHO Polio Regional Reference Laboratory located at the Doherty Institute in Melbourne. Further genetic analysis was conducted by the United States Centers for Disease Control and Prevention (US-CDC).



Strong collaboration between the GPEI and Gavi ensured that the distribution of polio vaccines could be integrated with routine immunization, such as the measles-rubella vaccine. PNG declared 2019 as the Year of Immunization, building on the emergency polio response and seizing on renewed public support for strengthening the immunity of children against a broader range of infectious diseases.

A coordinated funding response — with support from the GPEI and core partners as well as the governments of Australia, South Korea, Canada, the UK, New Zealand, and the U.S. — was also key to PNG’s success.

Risk communication and mobilization of the community was a priority from the outset. To heighten awareness across the country, PNG’s National Broadcasting Corporation provided airtime for public health messages that focused on the risk to children and prevention through vaccination. The response drew on community-based volunteers, as well as church workers and students to raise awareness and identify local barriers. Posters, banners, loud hailer, and talking points were

provided to mobilizers to support community engagement.

Despite enormous challenges in accessing remote communities, national immunization programs reported administrative coverage rates between 93 percent and 97 percent.<sup>46</sup> Noting PNG was still vulnerable to reinfection, the GPEI declared PNG was no longer infected by cVDPV1 in 2020.<sup>47</sup> With increased surveillance measures since 2018, no further cases have been detected.

Effective work to constrain the polio outbreak in PNG was a credit to the leadership and coordination of the PNG government and the GPEI partners. WHO’s Regional Director for the Western Pacific presented the PNG outbreak team with an award for excellence, and lessons learned from the response in PNG have been applied to other outbreaks globally. With polio threats under control, PNG was better equipped to handle other epidemiological threats, and polio investments have helped to support testing and treatment for COVID-19 and strengthened routine immunization programs.



Photo: © Gavi/2018/AAPIMAGE-Brendan Esposito



Photo: © Gavi/2018/AAPIMAGE-Brendan Esposito

More scenes from the 2018 polio vaccination campaign at the Malahang Health Clinic in Lae, Marobe Province, PNG. On page 19 is a young child receiving a vaccine dose; on page 20 is the officer in charge of the event, Daisy Basa.



# Recommendations

Canada was the first country to contribute to the global effort to eradicate polio in 1986. Since then, Canada has cemented its legacy as a world leader in the global push to eradicate polio and to save lives through immunization.

To date, Canada has invested more than C\$940 million in the GPEI’s polio eradication efforts, including an existing commitment of C\$190 million for 2020–2024. Now, civil society partners are encouraging the Government of Canada to continue its leadership toward a polio free world by making a timely and strategic C\$60 million commitment to the GPEI at a pledging moment at the World Health Summit in Germany, bringing its cumulative pledge to C\$1 billion.

The C\$60 million would not be for now but rather, a part of Canada’s next pledge for 2025–26 because Canada has an existing pledge 2020–2024. Such an announcement would be incredibly important and strategic as part of galvanizing continued global commitment to the GPEI. There is no doubt that reaching such a milestone would act as a catalyst for other country donors to follow Canada’s lead as part of the GPEI 2022–2026 Investment Case and Budget.

In line with its feminist international assistance policy, Canada can also be proud for its support to the GPEI to build on the important role played by women in the program, from the front lines to program management and political leadership.

Global progress represents the best opportunity we have ever had to achieve eradication — yet ongoing challenges threaten the current window of opportunity.

Recent developments — such as the detection in February 2022 of the first case of wild polio in Africa since 2016; outbreaks of cVDPV throughout 2022; and the appearance of vaccine derived polio virus in locations long considered to be polio-free, including Israel, the UK, and the U.S. — jeopardize thirty years of progress and Canada’s investment of more than C\$940 million which has brought us to the threshold of a polio free world.

Now is the time to redouble our efforts to achieve and secure a polio free world. Canada must commit to continue its legacy as a leader in eradicating this paralyzing and deadly disease and pledge a minimum of C\$60 million to the GPEI at the World Health Summit.

***Civil society partners are encouraging the Government of Canada to continue its leadership toward a polio free world by making a timely and strategic C\$60 million commitment to the GPEI at a pledging moment at the World Health Summit in Germany on October 18, 2022, bringing its cumulative pledge to C\$1 billion.***



Results Canada volunteers in front of the Canadian Parliament  
Photo: © Results Canada



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The cost of implementing the Global Polio Eradication Initiatives (GPEI) 2022-2026 strategy to eradicate polio is

**\$4.8 billion**



A fully funded polio eradication effort means

**370 million children**

will be vaccinated each year for the next five years

## Funding the End of Polio

Figures from the GPEI's *Investment Case 2022-2026: Investing in the Promise of a Polio-Free World*.

Investing in polio now, many cumulatively save an estimated

**\$33.1 billion by 2100**



## About ACTION

The ACTION Global Health Advocacy Partnership ([www.action.org](http://www.action.org)) is a group of 15 locally rooted independent member organizations around the world, advocating together with allies and champions for a world where all people have equitable access to health. The partnership, which was established in 2004, is supported by a secretariat located in Washington, DC, U.S.





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