POLIO GLOBAL ERADICATION INITIATIVE

# Annual Report 2011

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# Annual Report 2011

2012 INDIA POLIO-FREE

*This report is dedicated to the polio vaccinator.*

WHO/T. MORAN

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# Executive summary

Looking back on the second year of the Global Polio Eradication Initiative (GPEI) Strategic Plan 2010–2012, the scales are balanced between significant achievements on the one side and, on the other, some disappointing setbacks.

Success in India was the most remarkable milestone, deemed "magnificent" by the Independent Monitoring Board (IMB) of the GPEI. Long considered one of the most challenging countries in which to eradicate polio, India accomplished what the IMB called the "systematic enforcement of best practice" to reach over 98% of children with polio vaccine. The country freed itself of endemic polio and finally laid to rest the question of whether polio eradication is technically feasible.

Globally, polio cases fell to half the level of the previous year. In two of the four countries with re-established transmission of polio, no cases have been reported in the Republic of South Sudan and in Angola since June 2009 and July 2011, respectively. In the other two, Chad geographically restricted polio in the second half of the year and cases plummeted in the Democratic Republic of the Congo, after aggressive response to extensive outbreaks in early 2011. All of the eight outbreaks recorded in previously polio-free countries were successfully stopped, all but one within six months.

On the other side of the scales, the three remaining endemic countries witnessed an unexpected and serious upsurge of polio. In Nigeria and Pakistan, the continued circulation of two wild poliovirus serotypes – and a vaccine-derived poliovirus in the former – had the ripple effect of international spread to two neighbours. In Afghanistan, the number of cases also increased, with the national programme unable to reach enough children to stop outbreaks in the insecure Southern Region. At the end of 2011, the three endemic countries were off-track for eradicating polio.

The Independent Monitoring Board (IMB) warned in October 2011 that polio eradication would not be achieved on the programme's current trajectory. In November, an alarmed Strategic Advisory Group of Experts on immunization (SAGE) warned that failure to eradicate polio would constitute a failure of public health. By January 2012, the World Health Organization's (WHO) Executive Board had called for polio eradication to be declared a programmatic emergency for global health.

Completing polio eradication is now a global emergency because of the clear – and, as stated by SAGE – "unacceptable" consequences of failure. The children of Nigeria, Pakistan and Afghanistan bear the brunt of current polio transmission, but the consequences reach much farther. In recent years, the international spread of polio has become deadlier. Recent outbreaks on three continents –Tajikistan, Congo and China, all far from polio-endemic areas – paralysed mostly adults. In some of these outbreaks, half the affected adults died. When the virus affects adults who have grown up in previously polio-free countries and have received little or no vaccination, it kills far more frequently.

These consequences have triggered emergency actions among countries and the international polio partners. The Global Polio Emergency Action Plan 2012–2013, and the revised national emergency action plans that underpin it, capture the fundamental changes that polio-affected countries and their partners are making in their approach and structure, to ultimately bring about polio eradication.

Compounding this emergency is a 50% gap in financing needed to fully carry out the necessary activities in 2012–2013 (as of April 2012). In the first quarter of 2012, this has already dictated the scale-back of activities in 24 countries in Asia and Africa, increasing the risk of unchecked spread if poliovirus from endemic areas enters these countries.

The emergency eradication programme is about speed, focus and most of all accountability. From heads of state to chiefs of multilateral agencies and donors, from parent to vaccinator, every link in the chain must be tempered and strengthened to bring about a polio-free world.

# Key events 2011

## January

Rukhsar Khatoon becomes the only child in India to be paralysed by polio in 2011.

## February

The world loses a true polio eradication champion – Bill Sergeant, former Chairman of Rotary's International's Polio Plus Committee, passes away on 13 February at his home in Tennessee, USA.

WHO/C. MCNAB

*Bill Sergeant holds the award given to him by the 2006 World Health Assembly, in recognition of his commitment to polio eradication.*

Rotary International celebrates its 106th anniversary by lighting up famous landmarks, including the Trevi Fountain in Italy, the New York Stock Exchange in the USA and Charminar in India.

ROTARY INTERNATIONAL

Bruce Aylward, Assistant Director-General for Polio, Emergencies and Country Cooperation at the World Health Organization, gives a "TED Talk" on polio eradication.

## March

317 polio cases from the Republic of Congo's deadly 2010 outbreak, for which no specimens had been collected, are confirmed by the National Polio Expert Committee.

UNICEF Executive Director Anthony Lake is invited to the Democratic Republic of the Congo and meets with the Prime Minister and the Minister of Health to discuss the Government's vital role in putting an end to polio.

## April

During Immunization Week, polio vaccination campaigns are organized throughout India, central Asia and west Africa.

## May

WHO Director-General Margaret Chan and Bill Gates, co-chair of the Bill & Melinda Gates Foundation, convene a meeting on polio eradication at the World Health Assembly.

The World Health Assembly expresses concern over the GPEI's funding gap.

United Nations Secretary-General Ban Ki-moon addresses a meeting of the Governors' Forum in Abuja, Nigeria: "You have made tremendous progress [in] the past year. But if we let our guard down for a minute, polio can spring back. We cannot let this happen. Let us eradicate this crippling disease once and for all."

G8 leaders unanimously re-affirm their commitment to polio eradication at their Summit in Deauville, France.

## June

The polio "Endgame", a vision for the post-eradication era, is published in the *New England Journal of Medicine*.

## July

A case of wild poliovirus type 3 (WPV3) is detected in Pakistan, the first detected in Asia for 2011.

Polio-funded staff are mobilized to assist in the response to the "worst drought in 60 years" in the Horn of Africa.

FC Barcelona signs on to promote polio eradication.

## August

An independent expert committee confirms that the 2010 outbreak in central Asia and Russia has been successfully interrupted and declares that the WHO European Region will retain its polio-free certification.

Chinese authorities notify the GPEI of four cases of polio. China had not seen cases of wild poliovirus since 1999.

A devastating attack on the UN House in Abuja, Nigeria, claims the lives of 23 people including three WHO and two UNICEF staff members.

WHO/F. OLSEN

*Devastating attack on UN House in Abuja, claiming 23 lives and injuring many more.*

## September

The WHO Region for the Americas celebrates 20 years since its last indigenous case of wild poliovirus.

## October

Volunteers around the world show their support on World Polio Day.

The Independent Monitoring Board's fourth report is released, highlighting that time alone will not lead to polio eradication. This triggers dramatic changes at the GPEI.

World leaders at Commonwealth Heads of Government meeting in Australia commit support to polio eradication.

JARRAD SENG

*At centre, Australian PM Julia Gillard flanked by (from left) Canadian PM Stephen Harper, Nigerian President Goodluck Jonathan, PM David Cameron of the UK and PM Yousuf Raza Gilani of Pakistan.*

## November

The Strategic Advisory Group of Experts on immunization (SAGE) warns that the risk of failure to complete global polio eradication constitutes a programmatic emergency of global proportions for public health.

## December

Amitabh Bachchan, UNICEF Ambassador for Polio Eradication, launches India's new communications campaign.

UNICEF INDIA/2011

*Bollywood megastar and UNICEF Polio Ambassador Amitabh Bachchan launches the new polio eradication communications campaign – which seeks to personalize parental ownership for immunization – in Mumbai in December 2011.*

# Stopping transmission of polioviruses

## 1 | On track: India, the Republic of South Sudan and outbreaks

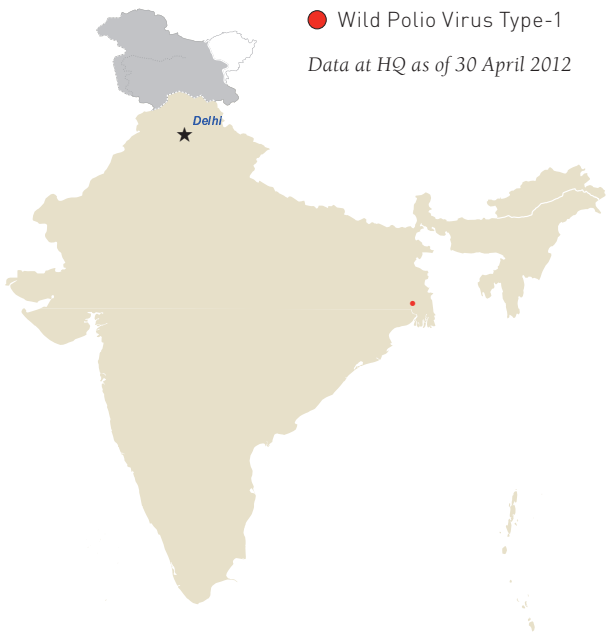
India, the Republic of South Sudan and all polio-free countries that reported outbreaks following importations ended 2011 on track to meet the milestones set out in the GPEI Strategic Plan 2010–2012. With no new cases since January 2011, India appears to have stopped the transmission of indigenous wild poliovirus. South Sudan last recorded a case in June 2009, and all new outbreaks save one (Mali) caused by poliovirus spread from an endemic area were stopped within six months.

### India

#### *Situation*

When 2011 began, India was mopping up a persistent trickle of polio cases in West Bengal. Although no cases had been reported in Uttar Pradesh and Bihar, India's last endemic states, since April and September 2010 respectively, the outbreak in West Bengal had proved tenacious. Poliovirus originating from Bihar had found under-immunized children in northern West Bengal, where immunization activities had failed to reach the necessary coverage.

**Wild Polio Virus Cases in India, 2011**




On 13 January 2011, Rukhsar Khatoon, a toddler living in the peri-urban fringes of Kolkata, developed polio-paralysis.

#### *Actions*

When Rukhsar was infected, India was already implementing intense and focused polio eradication activities, holding local governments responsible for reaching every child during the frequent immunization activities. These revolved around:

- The implementation of a specially developed strategy to seek out the traditionally under-served migrant, nomadic and mobile populations;
- The deployment of the formidable apparatus of the National Polio Surveillance Project – a joint project of the Government of India and WHO;
- The deployment of experienced personnel in target communities to enhance the effectiveness of operations and provide a more comprehensive social mobilization.

Rukhsar Khatoon is India's only case of polio in 2011, an achievement made possible by India's wholehearted diligence in applying the GPEI Strategic Plan 2010–2012, as demonstrated by the unprecedented coverage rates of up to 99% achieved in Uttar Pradesh and Bihar, and confirmed by rigorous monitoring and serologic surveys. The central Government:

- ensured unwavering funding for polio eradication activities, largely through its own funds; and
- in cooperation with concerned state governments, oversaw the implementation of the Plan at every level, persevering through all obstacles.

### Outlook

There is much work to be done if India is to protect its success. For the entire WHO Region for South-East Asia to be officially certified "polio free" by January 2014, India will have to remain polio-free for the next two years. Given that high population immunity is critical in protecting this achievement, the Government has declared 2012 the year of intensification of routine immunization.

*"This gives us hope that we can finally eradicate polio, not only from India, but from the face of the entire mother earth"*

*Prime Minister Manmohan Singh of India addressing a 1400-strong gathering at a Polio Summit in New Delhi, 25 February 2012*

This means that:

- An intense schedule of supplementary vaccination campaigns will be maintained throughout the period;
- Every state has an emergency preparedness plan should polio recur;
- Sustained surveillance will be continued relentlessly.

India is the newest voice in the community of polio-free nations, all of which have a strong stake in preventing international spread and ensuring global eradication of polio.

*"WHO will remove India from the list of countries with active endemic wild poliovirus transmission"*

*Letter from Director-General of WHO, Margaret Chan, to Minister of Health and Family Welfare Shri Ghulam Nabi Azad, 25 February 2012*

Despite enormous challenges – the sheer size and diversity of the population combined with environmental, behavioural and other factors – India, traditionally considered one of the toughest places from which to eradicate polio, has proven its detractors wrong. It is a testimony to the dogged persistence of the Government and the millions of health workers, Rotarians and others who made this possible.

This achievement benefits not only the Indian people, but also the rest of the world. Until recently, India was one of the world's main exporters of wild poliovirus, spreading as far away as Angola, the Democratic Republic of the Congo and Tajikistan. The world's largest wild poliovirus reservoir has now been shut down.

The IMB's January 2012 report stated that "success in India [...] shows that unwavering political commitment, outstanding public health leadership, clear lines of accountability, intolerance of weak performance and the systematic enforcement of best practice can stop polio." It now remains to adapt the lessons learnt from India's polio eradication programme to the world's last three endemic countries.

*"The real credit goes to the 2.3 million volunteers who repeatedly vaccinated children even in the most remote areas, often in very bad weather conditions. […] I commend each one of them for their dedication, commitment and selfless service"*

*Prime Minister Manmohan Singh at the Polio Summit in New Delhi, 25 February 2012*

## Rukhsar – the face of success

ROD CURTIS/UNICEF

*India's last case of indigenous wild poliovirus, three-year-old Rukhsar Khatoon, is carried by her mother in Howrah, near Kolkata, West Bengal.*

Rukhsar Khatoon is the face of India's polio eradication success the last child to be paralysed by indig enous wild poliovirus. Following physiotherapy sessions at the hospital, Rukhsar is now able to walk almost normally and has no pain, although she is unable to run with her siblings.

Rukhsar was always a sickly child, so her parents were reluctant to allow her to be vaccinated: "I didn't know what polio was. I thought the polio drops were for general good health," her mother, Sabera Bibi, explains. While the rest of Sabera's children have received oral polio vaccine, Rukhsar has never received a single drop.

Now Sabera worries what her daughter's future will hold. Married herself at 15, Sabera is concerned about her daughter's prospects for schooling and marriage. Abdul, who works in the zari (fine embroidery) indus try like most of his neighbours, frets about the financial costs of Rukhsar's treatments. "The doctors have been very kind," Sabera says, "but we have to think of the future and our other children."

When reading charts and trends, it is easy to forget that each case is a person whose life has been changed forever. The vast majority of polio cases are children, often living in the poorest and most marginalised com munities, where there is often no infrastructure for those with disabilities.

By eradicating polio, we are helping to ensure that thousands of children, who would otherwise have been paralysed by the disease, can reach their full potential and take their rightful place as productive members of their communities.

# Republic of South Sudan

### *Situation*

When 2011 dawned on the soon to be Republic of South Sudan, the polio eradication programme was on alert. In December 2010, an environmental sample from a sewer in Aswan, Egypt, had read positive to a form of wild poliovirus type 1 (WPV1) closely related to a virus last seen in what is now South Sudan in 2008. Sudan, which had put an end to its indigenous transmission in 2004, had been re-infected with WPV1 originating from Nigeria in 2008, causing the country to be classified as having "re-established transmission". Cases had been reported in the northern part of Sudan until June 2009, making the detection, hardly 18 months later, of a related virus in Egyptian sewage a cause for concern.

### *Actions*

In May 2011, the Technical Advisory Group (TAG) of the WHO Eastern Mediterranean Region deemed continuous undetected polio transmission in Sudan unlikely, rapid assessments having found acute flaccid paralysis (AFP) surveillance sufficiently sensitive, even among mobile populations. The TAG was instead concerned that the virus could still be circulating in South Sudan. As a result:

- South Sudan and the other countries of the Horn of Africa were advised to undertake a systematic mapping of populations likely to have been missed by AFP surveillance, polio vaccination rounds and routine immunization in 2011.
- Additional measures were undertaken to improve the quality of supplementary immunization activities (SIAs) and surveillance.

### *Outlook*

Meeting again in June 2011, the TAG expressed its satisfaction with the measures undertaken as well as with the subsequent Sub-national Immunization Days (SNID) conducted in South Sudan.

Almost 18 months after WPV1 was detected in Aswan, South Sudan is still polio-free and sewage samples in Egypt have remained negative. Meanwhile, despite uncertainties in the short-term political situation, the Government is committed to:

- continue supplementary immunization activities, and
- establish strong routine immunization systems.

However, South Sudan's best protection against polio is to end transmission of the virus in northern Nigeria.

## New outbreaks

### *Situation*

In 2011, 79 polio cases were reported during outbreaks compared to 961 in 2010. With transmission halted in India – one of the world's biggest exporters of poliovirus – there is now one less source from which wild poliovirus can spread.

The Central African Republic, China, Congo, Côte d'Ivoire, Gabon, Guinea, Mali and Niger all reported outbreaks in which the virus had travelled from endemic areas, and Kenya reported one case. Only Mali failed to stop the outbreak within six months, the limit introduced by the GPEI Strategic Plan 2010-2012.

A further 58 circulating vaccine-derived poliovirus (VDPV) cases – all of which but two were type 2 serotype – were reported in Afghanistan, the Democratic Republic of the Congo, Niger (where the one reported case was genetically linked to the outbreak in Nigeria), Nigeria, Somalia and Yemen. The bulk was reported in Nigeria where circulating VDPV type 2 transmission is ongoing since 2006. Circulating VDPVs are subject to the same outbreak control measures as wild poliovirus outbreaks, and the rapid implementation of outbreak response strategies has been successful in all affected countries, except Nigeria. Outbreak response continued late into 2011 in the Democratic Republic of the Congo and Yemen.

### *Actions*

- In all, 66 vaccination campaigns were conducted in affected countries in 2011.
- While two of the outbreaks were considered ongoing as of 12 April 2012 – the Central African Republic (where the most recent case was reported on 8 December 2011) and Niger (12 December 2011) – transmission in these countries has not yet exceeded six months.
- The IMB's January 2012 Report noted that all outbreaks had been "strongly dealt with in the main".

### *Outlook*

Over the past three years, about half of all wild poliovirus cases reported worldwide occurred in previously polio-free countries as a result of importations from an endemic country. Several lines of defence are in place against the risk and consequences of international spread of polio:

WHO/ C. WOLFF

*China responds to outbreak of polio - A school pupil is vaccinated with oral polio vaccine in candy-coated formulation.*

- The first is preventive vaccination to pre-emptively shore up immunity;
- Once the spread occurs, full implementation of internationally agreed protocols for outbreak response help reduce the consequences;
- Innovative strategies such as the Short Interval Additional Dose (SIAD) – in which two doses of vaccine are given in rapid succession – were introduced in 2011 to strengthen these protocols. Initially conceived to vaccinate children in insecure areas by taking advantage of each opportunity, the SIAD has proven effective in outbreak response as well.
- Vaccinating children up to 15 years of age or adults up to 30 (in addition to the traditional children under five) is another strategy that appears to help raise rapidly the overall immunity in places where it is significantly lower among older children or young adults, such as in China and the Democratic Republic of the Congo. This practice seems to lead to shorter outbreaks infecting less people.
- Innovative VDPV management is being finalized concurrently with the intensified efforts to eradicate the remaining strains of wild poliovirus transmission. This is a development on previous strategies, which envisaged dealing with the long-term risks of VDPVs only after certification of polio eradication. For more, see "Polio Eradication – An Emergency" section.

## Polio eradication: the gender perspective

The intense vaccination schedule and high levels of coverage required for polio eradication have ensured an equal vaccination status for girls and boys. However, further scrutiny of the gender perspective in polio eradication reveals an interesting story.

WHO/T. MORAN

*Empowering women within their networks: bringing professional opportunity and respect.*

In the few areas where endemic polio persists, it is often found among the most socially conservative communities. The house-to-house vaccination strategy can come up against local norms that do not allow male vaccinators to enter a home and vaccinate children or male supervisors or monitors to interact with females in a household. Vaccination, social mobilization and monitoring often rely on women.

Able to speak woman to woman, mother to mother or grandmother to mother, female vaccinators hold great sway over the process. By showing that they are willing to have their own children vaccinated against polio, vaccinators who are mothers demonstrate to wary parents that they have the children's best interests at heart. And in parts of Nigeria, where the advice of older women is greatly respected, the inclusion of senior women in vaccination teams has a positive effect on the number of parents who want their children to be vaccinated.

In India alone, an estimated 80–85% of the 2.3 million vaccinators participating in each round of National Immunization Days (NIDs) are women – they include auxiliary nurse midwives, accredited social health activists (known as ASHAs), employees of the social welfare department (Anganwadi workers) and volunteers. Nearly 70% of the 155 000 supervisors overseeing the work of these vaccinators are also women. In the once traditional polio reservoirs of Bihar and Uttar Pradesh, more than 92% of the 128 000 vaccination teams include at least one female vaccinator.

UNICEF India's 8000-strong Social Mobilization Network, which goes door to door spreading messages about polio and routine immunization, exclusive breastfeeding, nutrition, hand washing and diarrhoea treatment, is made up almost exclusively of women. In Nigeria's Kano, Kebbi and Sokoto states, the 970 social mobilizers at the settlement level of the Volunteer Community Mobilizer network are all women.

Polio teams do not aim for numbers alone. The recruitment of women is done only when it is appropriate both socially and from a security perspective. In Afghanistan, 12% of those employed during a polio vaccination campaign are female, working mostly as volunteers and supervisors. In many parts of the country, it can be very perilous for a woman to work outside her home. In Pakistan's Khyber Pakhtunkhwa, Federally Administered Tribal Areas and parts of Balochistan, families prefer their children to be vaccinated by women but do not want their own women to work outside the home as vaccinators. So in 2011, while the proportion of teams with at least one female vaccinator reached 88% in Punjab, it never went above 31% and 57% in Khyber Pakhtunkhwa and Balochistan respectively.

Measuring the quality of vaccination activities is another area where the female workforce is critical. In Nigeria's 12 worst performing states, quality monitoring, both during and after a campaign, is conducted by teams composed almost entirely of women. Kano, for example, has 352 female independent monitors and not a single male.

The role that women play in polio eradication benefits not only parents and caregivers but also the women themselves. Indeed, the programme has offered many a rare opportunity for professional fulfilment, as evidenced by the status of the Lady Health Workers in Pakistan, who enjoy a high level of respect in communities as health providers.

# 2 | Back on track: Angola, Chad and the Democratic Republic of the Congo

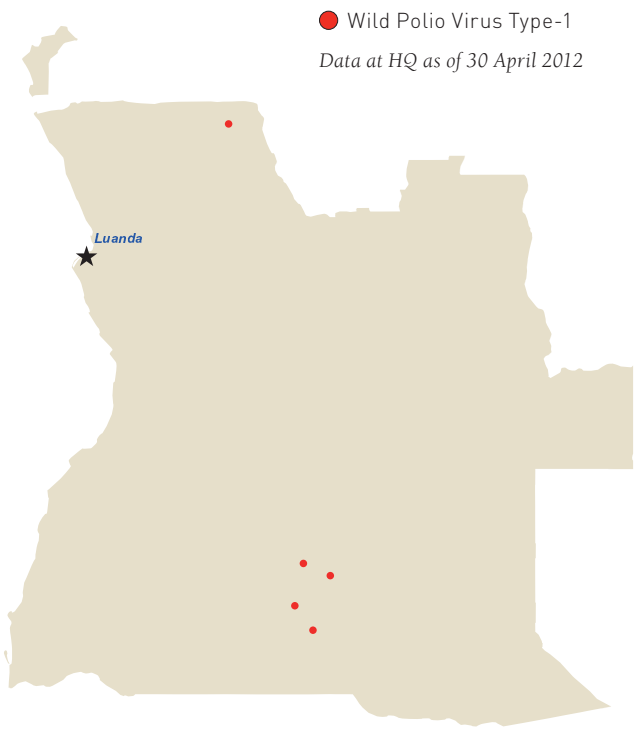
Angola, Chad and the Democratic Republic of the Congo (DRC) are showing the first signs of victory after a year of stalemate and even defeats in their battle against re-established polio transmission. No cases have been reported in Angola since July 2011 and while Chad and the DRC have experienced extensive outbreaks early 2011, polio has since been geographically contained and transmission appeared to be abating in the second half of the year.

## Angola

### *Situation*

Angola reported only five WPV cases in 2011, a significant decrease compared to the 33 cases in 2010. Four occurred in the first quarter of the year due to re-established WPV1 transmission in the south-east of the country. This particular lineage has not been detected again since March 2011. In July, a single WPV1 case was reported in the northern Uige province, re-introduced from Bandundu and Bas Congo provinces in the neighbouring DRC, where polio transmission was active at the time.

**Wild Polio Virus Cases in Angola, 2011**




### *Actions*

This 85% reduction in the number of cases between 2010 and 2011 is the result of tremendous efforts to improve the coverage and quality of polio eradication activities. The nine consecutive SIAs (four NIDs and five SNIDs) conducted in 2011 reached more children than ever before because:

- Strong government leadership was established at the central level, complemented by the decentralization of financial resources for supplementary activities to the municipal level, and a more systematic engagement of traditional and local leaders at ward level in Luanda and Benguela provinces;
- Innovative and flexible strategies were adopted to reach and vaccinate all targeted children; and
- Routine immunization services were systematiccally strengthened in 29 municipalities.

The results of these campaigns showed around 8% missed children in out-of-house monitoring. Luanda, the historical focus of polio transmission, reported between 9% and 20% missed children in five campaigns.

### *Outlook*

Despite this progress, there is a high risk that low-level circulation continues in parts of the country or that the virus could be re-introduced. In 2012, the programme focuses on:

- New micro-planning strategies with greater community participation, an approach that has been successful in raising the numbers of immunized children in high-risk communities;
- Influential voices and inter-personal communication to support social mobilization efforts and advocacy;
- Continuous decentralization of coordination and supervision to ensure an optimal level of preparation for SIAs as well as better participation, monitoring and evaluation.

UNICEF/UNICEF/NYHQ2011-0137/WILLIAMS

*UNICEF Executive Director Anthony Lake chats with children in Cacuaco municipality on the outskirts of Luanda, the capital, during polio vaccination activities.*

What lies ahead in Angola depends on maintaining the trend of local commitment and innovation, specifically:

- The leadership of municipal administrators, which will help sustain the good implementation of polio eradication strategies and scale up routine immunization interventions;
- Logistics, which can help reach scattered populations in some hard-to-reach municipalities and flood-prone areas and which will therefore require particular attention.

To ensure final success, the funding gap must be filled. The Government currently covers more than 88% of the operational costs of polio vaccination campaigns. However, the costs for supervision and monitoring in provinces and municipalities, as well as for logistics and social mobilization, remain unfunded. On its current track, and with sufficient funding, Angola can close 2012 without poliovirus.

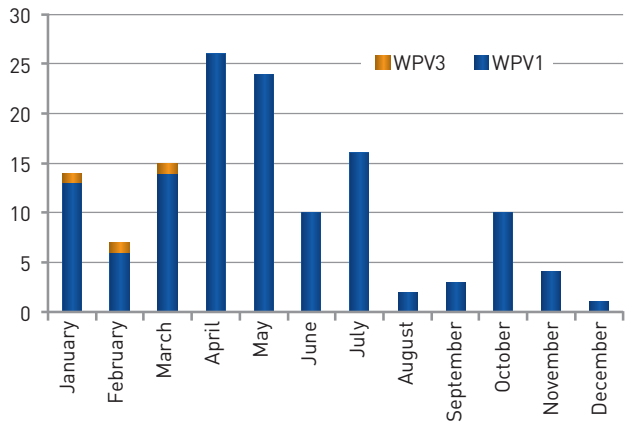
# Chad

### *Situation*

2011 was a difficult year for Chad. The country recorded 132 cases of polio, nearly a fifth of all cases reported worldwide and more than in any single year since 2003. The virus also crossed into the Central African Republic and Niger shortly after WHO informed its Member States of the risk of international spread from Chad.

Chad was affected by two epidemics: a WPV1 outbreak, which started in N'Djamena in September 2010, and a WPV3 outbreak in the eastern district of Am Dam, which started in November 2007 and re-established transmission. Both were caused by importations from Nigeria. Although the second epidemic is considered to be under control (with no cases detected since March 2011), sub-optimal surveillance warrants caution.

**Chad polio cases 2011**
**Decline in 2nd half of year**




UNICEF/CHAD/2011

*Heads of cantons and villages in Am Dam during community fora organized in May 2011 to reinforce social mobilization against the disease.*

After a period of high transmission during the first part of 2011, the epidemiological situation improved and the number of cases declined by 75% in the second half of the year. During the last 6 months, transmission has become much more focal thanks to a succession of SIAs conducted in the fourth quarter of 2011 and the first quarter of 2012. Operational issues are the main reason children are still being missed by vaccination campaigns, although social and communication problems are also important, particularly in key high-risk areas.

ROTARY/J-M GIBOUX

*Tailored strategies now focus on reaching populations no matter where they live, including nomadic groups*

### Actions

Given the magnitude of the epidemic, President Déby Itno instituted in August a monthly briefing on the status of polio eradication during regular meetings related to the health sector. In September, Bill Gates, Co-Chair of the Bill & Melinda Gates Foundation, advocated for national leaders and health officials to prioritize polio eradication and routine immunization.

In response to this public health emergency, Chad conducted six NIDs and three Local Immunization Days (LIDs) and followed the TAG's recommendation – given in September 2011 – for the formulation of an extended Emergency Plan to cover the period January to June 2012. Following these recommendations:

- The September and October campaigns gave greater involvement and ownership to central government officials and provincial governors;
- The three-day countrywide immunization strategy was reinstated;
- WHO and UNICEF stepped up their technical support, setting up six hubs throughout the country and providing nearly 100 polio and communication professionals to improve the planning, coordination and implementation of campaigns;
- Post-campaign monitoring was strengthened and Lot Quality Assurance Sampling (LQAS) was introduced as a method of quality control after the October and November rounds.

### Outlook

Six NIDs and two large-scale SNIDs are planned for 2012, to which more than 100 new staff members from various partners will participate. Effective management of, and accountability for their performance, is critical. The Emergency Plan outlines a series of steps to strengthen implementation at the district and sub-district level. They include:

- the management of partner agency human resource surge;
- the re-training and re-orientation of government health staff in the provinces;
- the engagement of nongovernmental organizations active in the provinces;
- enhanced communications and social mobilization; and
- careful attention to selection and training of vaccination teams.

In 2012, Chad will introduce a number of innovative approaches to complement the eradication effort, such as GPS technology to improve micro planning in key high-risk areas.

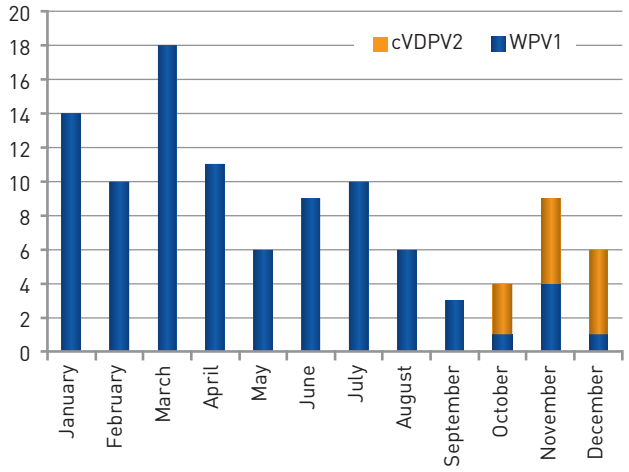
Chad succeeded in putting a stop to polio transmission once before. This success can be repeated presently. To reach that point, the momentum created by the Government and international partners must continue unabated.

# Democratic Republic of the Congo

### *Situation*

Although the level of polio transmission did not vary much between 2010 (100 cases reported) and 2011 (93 cases), the geographic reach of the virus shrank considerably. Of the 93 cases, 76% occurred in the western provinces of Kinshasa, Bandundu (in a limited zone) and Bas Congo, as well as in the capital city Kinshasa, which reported 33 cases alone.

**DR Congo polio cases 2011**
**WPV decline in 2nd half of year, but cVDPV outbreak**




Transmission was most active during the first semester, declining by 70% in the second half of the year. It also became more focal, so that by the end of 2011 the only remaining active transmission zone appeared to be in south-east Katanga and in neighbouring areas of Maniema. An outbreak of circulating VDPV type 2 late 2011 further attests to the poor immunization status in Katanga.

The persistence of the outbreak in the west and the cases reported in the east have multiple causes: the poor quality of campaigns in some areas, pockets of missed villages in remote and difficult-to-reach areas (Katanga, Bandundu) and the refusal of a number of religious sects in some communities of northern Katanga (although virtually all of these communities accepted vaccination once contacted).

UNICEF/ C. WALTHER

*A social mobilization worker calls out to the population of Popokabaka, Bandundu. During polio vaccination campaigns, social mobilization workers travel through towns, using a megaphone to inform parents of the importance of vaccination and when their children can be vaccinated.*

### Actions

Several measures were taken to improve the quality of SIAs conducted in 2011:

- Consultants were deployed to priority infected areas, with very clear geographic focus (30 consultants were in place by the end of the year);
- The target age for vaccination was raised in places where older children and young adults were affected;
- The number of teams was raised in high-risk areas and the quality of transportation improved;
- Advocacy and information campaigns addressing religious leaders and faith-based refusals were scaled up.

At the invitation of President Kabila, WHO Director-General Margaret Chan and UNICEF Executive Director Anthony Lake visited the country to discuss the support of their agencies to the Government.

### Outlook

If the Government and polio partners commit to treating 2012 as an emergency, the eradication of polio in DRC may very well become a reality by the end of the year. Two NIDs and six SNIDs are planned for 2012:

- Trivalent oral polio vaccine (OPV) will be used in at least one national and one sub-national round;
- In areas with recent circulating VDPV transmission, trivalent OPV will be used in multiple rounds;
- Remaining rounds will be conducted with bivalent OPV to ensure high levels of immunity against the two WPV serotypes.

WHO DRC

*Some areas are difficult to access specially during the rainy season.*

# 3 | Off track: Nigeria, Pakistan, Afghanistan

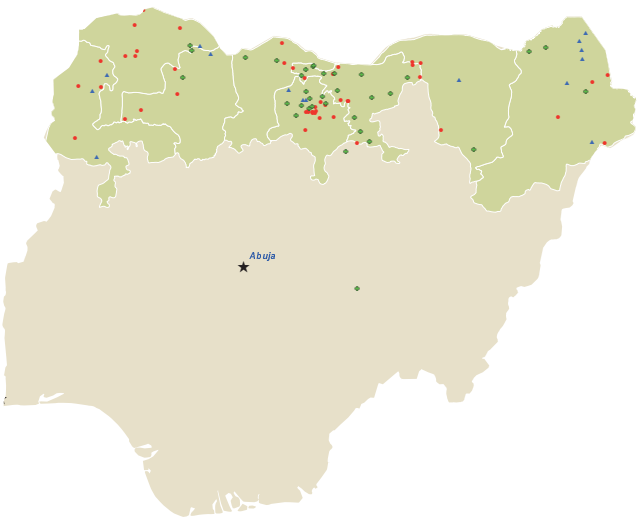
In stark contrast with India's success, the three remaining countries with endemic wild poliovirus transmission – Afghanistan, Nigeria and Pakistan – all suffered an unexpected and significant rise in the number of cases reported in 2011. Nigeria and Pakistan were the only countries in the world with confirmed WPV3 circulation, Nigeria being also affected by an outbreak of circulating VDPV type 2. Wild polioviruses from Nigeria and Pakistan were also associated with outbreaks in previously polio-free countries. In its February 2012 Report, the IMB said that Pakistan and Nigeria represented the gravest risk to polio eradication. Addressing polio transmission in these three countries must be considered an emergency in 2012. It is from there that polio will continue to spread to polio-free countries.

## Nigeria – disappointing year after progress in 2010, despite increase in vaccination coverage

### *Situation*

In 2011, Nigeria reported 62 WPV cases, of which 47 were type 1 and 15 type 3, a three-fold increase compared to 2010. A further 33 cases due to circulating VDPV type 2 were reported, making Nigeria the only country in the world affected by all three serotypes. More than 95% of all cases occurred in the eight persistently endemic northern states of Borno, Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara –68% occurred in Borno, Kano and Jigawa only. Nigeria continues to pose a significant risk to surrounding countries: in 2011, polioviruses originating from Nigeria were detected in five countries in west and central Africa.

**Wild Polio Virus Cases in Nigeria, 2011**




- Wild Polio Virus Type-1
- Wild Polio Virus Type-3
- cVDPV
- Persistent Endemic Transmission States

*Data at HQ as of 30 April 2012*

Nigeria's polio eradication efforts were significantly affected by three separate occurrences. In the first trimester, national elections distracted political and civil leadership from focusing on polio eradication. In the second trimester, a deadly car-bomb attack on the UN House in Abuja struck a terrible blow to the United Nations family (see Box). Finally, increasing insecurity during the third trimester, particularly in Abuja in Borno and Kano States, drastically complicated ongoing operations for polio eradication.

Nonetheless, immunization coverage has increased in key areas of the northern states. In the 109 known high-risk local government areas (LGAs), the proportion of children to have received three or more OPV doses rose from 51% in 2010 to 60% in 2011. This figure even reached 79% across the non high-risk LGAs. However, the polio eradication programme continues to miss too many children in key geographic areas and population groups. Despite dozens of vaccination campaigns over the past years, no more than 65% of children have received four or more OPV doses in Borno (62%), Kano (64%), Sokoto (65%) and Yobe (63%) states. In Borno, 11% of children have never received a single dose.

The picture is also mixed regarding surveillance. Nationally, AFP surveillance remains strong, with a national non-polio AFP rate of 8.8/100 000 population and a specimen collection rate of 94% in 2011 (see the section *Polio surveillance: Chasing down the virus*). While all states have met their operational targets, clusters of under-performing LGAs remain, as evidenced by the periodic detection of "orphan" viruses (viruses showing genetic evidence of long periods of undetected circulation). Although their number has declined between 2010 and 2011, their continued presence is proof of subnational surveillance gaps in key areas and/or population groups.

### Actions

Several adjustments were made to address the external factors affecting the programme and maintain immunization and surveillance operations:

- The security situation was evaluated round-the-clock to adapt the day-to-day logistic of operations;
- The groundwork was laid for a new emergency action plan addressing specifically operational challenges;
- Activities focused on improving the implementation of basic polio eradication strategies, in particular in worst performing areas;
- Greater effort was put into improving the performance and motivation of front-line health workers.

WHO/F. OLSEN

*UN House in Abuja, Nigeria: target of devastating attack*

At the same time, innovative approaches – when possible optimizing the use of new technologies – were established to supplement the basic eradication strategies:

- The use of geographic information systems (GIS) has improved the mapping and implementation of SIAs while geographic positioning systems (GPS) have helped track the progression of vaccination teams;
- Special strategies were developed to reach underserved and nomadic population groups;
- Targeted social mobilization efforts were used to clearly identify the core motives behind ongoing resistance to polio immunization in some areas, and to tailor strategies accordingly;
- Rapid surveillance reviews were used to strengthen subnational surveillance in areas with identified gaps. Particularly vulnerable areas and populations (nomadic groups and migrants) were given particular emphasis;
- Environmental surveillance was introduced in Kano to further validate programme performance and provide a clearer epidemiological picture.

### *Outlook*

Nigeria is treating the setback experienced in 2011 and the persistent spread of polio well into 2012 as an emergency. The National Polio Emergency Plan was finalized and officially launched by His Excellency President Goodluck Jonathan in March 2012. The President also announced that US$ 30 million per year would be made available for polio eradication activities, a clear sign of the country's commitment to end polio transmission for good.

A Presidential Task Force, chaired by the Minister of State for Health, Dr Mohammad Pate, will oversee the implementation of the plan, of which the main points are:

- The establishment of state-level task forces mirroring the administrative structures at the federal level;
- Close linkages between the national and state task forces to clearly define indicators at all levels;
- Active tracking, through the state and national task forces, of LGA leadership involvement to ensure accountability for programme performance;
- Proper review, by the state task forces, of preparedness indicators before each SIA and deferral in areas where preparations are not up to scratch.

In March 2012, the Expert Review Committee on Polio Eradication and Routine Immunization concluded that Nigeria has all the tools to improve rapidly the quality of immunization operations and to eradicate polio, but that success depends entirely on the full and consistent implementation of the Emergency Plan. This is an opportunity that Nigeria cannot miss, not only for the sake for its children, but for that of all children across Africa.

### *In memoriam:* Johnson Awotunde, Ahmed Abiodun Adewale-Kareem, Edward Dede, Musa Ali, Prince Abraham A Osunsanya

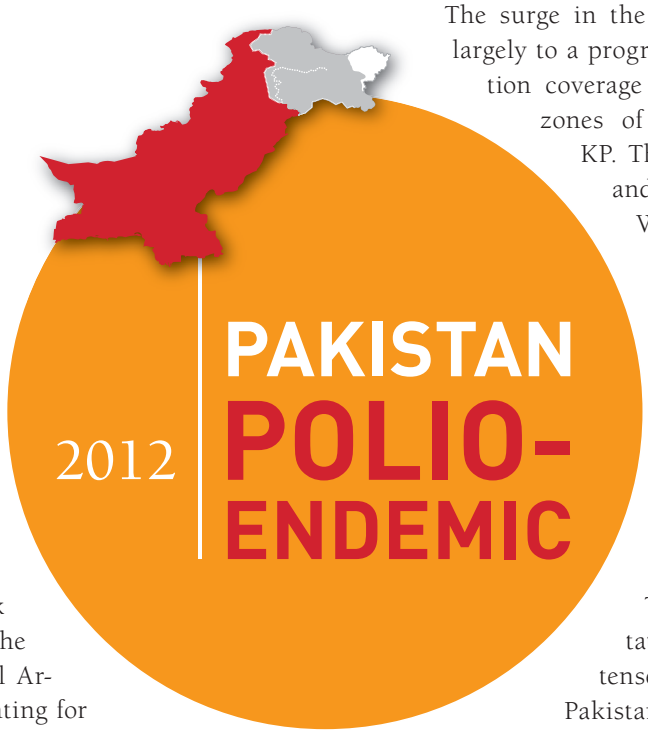
On 26 August 2011, a devastating explosion hit United Nations (UN) House in Abuja. UN House was the building where WHO, UNICEF and other UN organizations were based, and both partner agencies lost staff in the attack.

Mr Johnson Awotunde was a Monitoring and Evaluation specialist for UNICEF. Mr Ahmed Abiodun Adewale Kareem was a logistician for UNICEF. Dr Edward Dede worked with WHO as National Professional Officer for Routine Immunization. Engineer Musa Ali worked with WHO as the Zonal Logistics Assistant for the North West Zone, based in Kano. Also working for WHO, Prince Abraham A Osunsanya was instrumental in boosting donor confidence by strengthening the administration of immunization programmes to save and improve the lives of children in Nigeria.

In all, the explosion claimed the lives of 23 people and injured many more.

On the day of the attack, the WHO and UNICEF Offices in Nigeria had affirmed their intention to continue their work. This event is another tragic example of the dangerous conditions in which our colleagues are frequently working in their efforts to protect children everywhere from polio.

## Pakistan – widespread transmission as a result of declining vaccination coverage in the last WPV3 reservoir in Asia



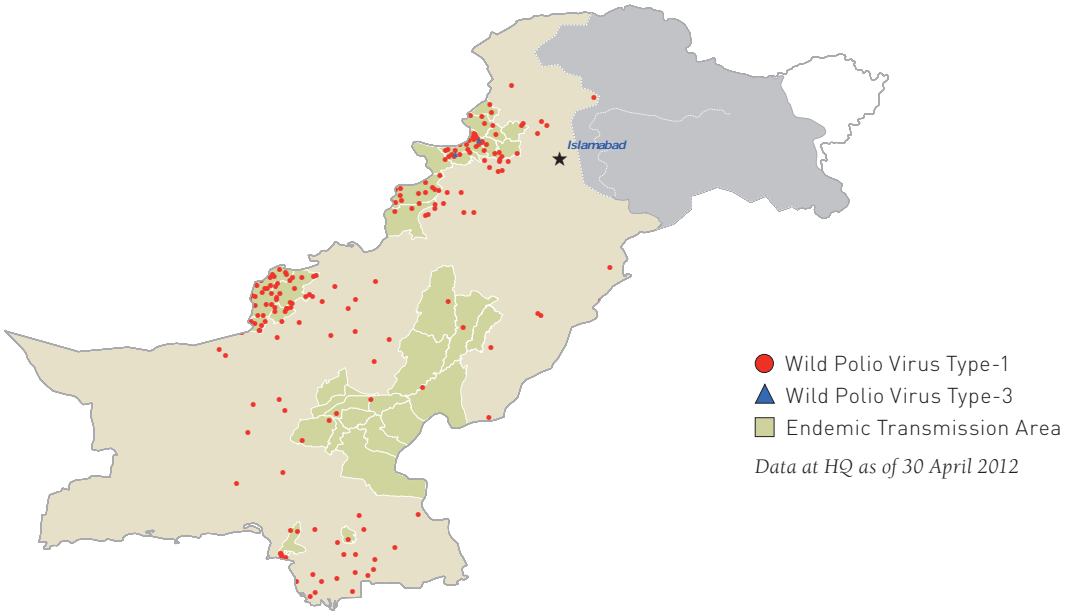

### *Situation*

In 2011, Pakistan reported a 22% increase in the number of wild poliovirus cases, from 144 cases in 2010 to 198 cases in 2011 (196 WPV1 and two WPV3). Pakistan is the only country in Asia with confirmed WPV3 transmission, a strain on the verge of eradication on this continent.

Two-thirds of all cases occurred in known high-risk districts in Balochistan and the Federally Administered Tribal Areas (FATA) – the latter accounting for 70% of all cases – affecting particularly Pashtun populations. Balochistan (Killa Abdullah, Pishin and Quetta Districts), Sindh (Karachi and northern Sindh) as well as parts of FATA and Khyber Pakhtunkhwa (KP) are Pakistan's endemic transmission reservoirs. Khyber Agency, in FATA, appears to be the only remaining WPV3 reservoir in all of Asia.

The surge in the number of cases is due largely to a progressive decline in vaccination coverage in the key transmission zones of Balochistan, FATA and KP. The decline began in 2006 and has been ongoing since. While the use of more effective vaccines, particularly bivalent OPV introduced in 2010, has partially offset this full impact, the reduction in coverage has resulted in significantly lower population immunity levels, in particularly to WPV1. This in turn has facilitated widespread and intense WPV1 transmission in Pakistan, as well as international spread to China, where it caused an outbreak in the western Xinjiang province.

**Wild Polio Virus Cases in Pakistan, 2011**



## Engaging new partners

In 2012, as part of the Augmented National Emergency Action Plan, new partners have committed to support polio eradication. They include a wide range of faith and community based associations, religious leaders and humanitarian institutions.One such important new partner is the eminent social worker Abdul Sattar Edhi, founder of the Edhi Foundation.

The Edhi Foundation is a trusted non profit organization based in Pakistan, specializing in the provision of social services and medical care to the country's most destitute populations. The Edhi Foundation is providing vital assistance to Pakistan's polio eradication effort, by contributing vehicles from its fleet of ambulances and fixed vaccination posts to advertise and facilitate access to polio vaccination. The Edhi Foundation's renown will provide a much needed boost to polio operations across Pakistan.

WHO PAKISTAN

*Eminent social worker Abdul Sattar Edhi, founder of the Edhi Foundation (left), meets WHO Regional Director for the Eastern Mediterranean Ala Alwan, at the Edhi Foundation offices in Karachi, Pakistan, in March 2012.*

### *Actions*

Operational challenges continue to hamper the quality of immunization and surveillance activities in endemic transmission areas, preventing Pakistan to reach all children with OPV. Challenges include:

- poor management and inadequate commitment and accountability from the leadership at the district and union council levels, and
- access issues due to insecurity in some areas, notably in FATA.

A National Polio Emergency Action Plan was launched early 2011 to address these challenges. Although the Plan received strong support from the national leadership, its impact at district level remained limited and its implementation was complicated by the devolution of the Federal Ministry of Health to provincial authorities.

### *Outlook*

To address the increase in polio transmission, the Federal Government has introduced new sweeping changes to the country's eradication efforts. His Excellency Prime Minister Syed Yusuf Raza Gilani appointed Ms Shahnaz Wazir Ali as his Focal Person for Polio Eradication, who is overseeing the development and roll-out of an augmented national polio emergency plan for 2012. The plan seeks to:

- ensure that sufficient staff is available, especially at the lowest administrative levels of the worst-performing districts and union councils;
- promote staff accountability;
- strengthen preparations ahead of SIAs;
- mirror the national oversight and accountability structure at the provincial level, as activities in the provinces will be overseen by the highest provincial offices.

Several significant changes were also made to improve performance and accountability at the district and union council levels:

- District Commissioners are responsible for the overall operational implementation;
- Union Council Medical Officers are responsible for overseeing local planning and implementation quality;
- Zonal Supervisors, previously responsible for local activities, were abolished due to chronic underperformance and corruption;
- in the worst-performing districts and union councils, preparations for SIAs and participation of the local leadership are tracked ahead of each event; and
- SIAs are delayed when preparations are deemed to be inadequate, to uphold the programme's quality.

## Wild poliovirus type 3 down to one district in Asia

Khyber Agency, in FATA, appears to be the only remaining wild poliovirus type 3 reservoir in Asia. Two WPV3 cases were reported there in 2011 and one in early 2012.

A key priority for the GPEI in 2012 will therefore be to interrupt rapidly and definitely any residual transmis sion of this serotype in this area. Eliminating the second of the three polio serotypes from Asia would signifi cantly boost the global eradication effort.

The only other known transmission area for type 3 appears to be in northern Nigeria.

With only seven WPV3 cases reported in 2011, type 3 could soon become a thing of the past, along with type 2, leaving wild poliovirus type 1 as the sole surviving wild poliovirus serotype.

The following operational innovations are being scaled up:

- systematic and targeted social mobilization activities, based on assessed community perceptions;
- special strategies to identify and reach mobile populations and underserved groups, particularly the Pashtun populations; and
- active review of vaccinator team performance and composition, as well as a new system to recognize high-performing vaccinators.

Finally, in order to increase vaccination coverage to newly accessible areas or population groups:

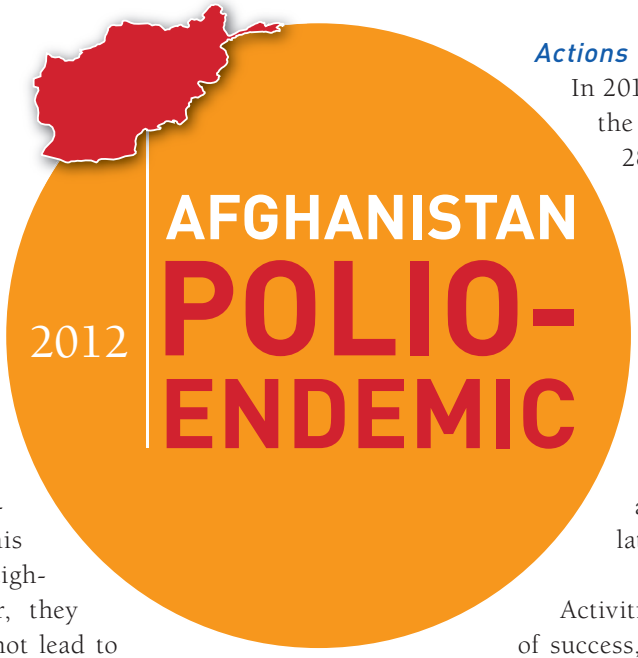
- the target age group is expanded to 15 years;
- the SIAD approach is expanded to build up immunity levels more rapidly; and
- campaign monitoring is enhanced through strengthened independent monitoring and targeted use of Lot Quality Assurance Sampling.

These measures have already proved effective: access to children has risen between the end of 2011 and the beginning of 2012, and better team composition has improved coverage in some high-risk areas, particularly in Karachi, Sindh and Quetta.

The history of polio eradication in Pakistan demonstrates that with strong government ownership and oversight and broad community commitment, children can be reached wherever they are. The most recent measures taken by the Government are precisely those needed to achieve a rapid and lasting success.

Reviewing the evidence, the TAG in Pakistan concluded in March 2012 that the Augmented National Emergency Action Plan has all the components required for the success of polio eradication. The full and consistent implementation of the plan will make the difference.

# Afghanistan – Further decline in vaccination coverage in Southern Region causes surge in polio cases




### *Situation*

With 80 WPV1 cases reported – a more than three-fold increase compared to 2010 – 2011 was a major setback for polio eradication in Afghanistan. Most of the cases (85%) occurred in the traditionally endemic Southern Region and Farah province in Western Region. The other cases were reported in nine previously polio-free provinces, the result of importations from this endemic zone and from neighbouring Pakistan. However, they remained isolated and did not lead to the re-establishment of the virus in these areas.

In the endemic zone, SIA quality has been declining steadily during the past three years, so that the immunization status of children was worse in 2011 than it was in 2008. The proportion of children who have never received a single dose rose from 9% in 2010 to 21% in 2011.

In addition to problems accessing children in insecure areas, serious flaws in the management and accountability of the polio eradication programme persisted in 2011. Poor access and management were compounded by poor advocacy and a failure to sufficiently communicate to parents and communities the importance of polio eradication.

### *Actions*

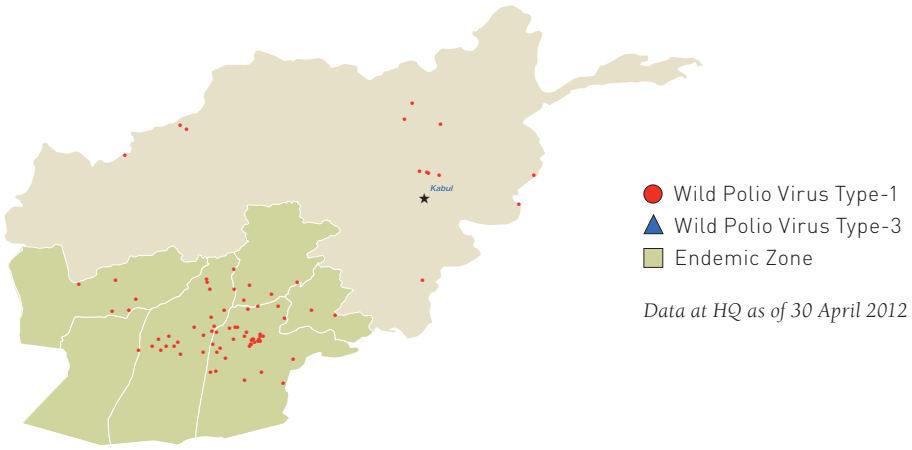
In 2011, activities focused most of the available resources on the 28 worst-performing districts of Hilmand, Kandahar, Uruzgan and Farah provinces by:

- implementing the SIAD approach whenever possible to build up immunity levels more rapidly;
- negotiating greater access to underserved populations.

Activities met with varying degrees of success, depending on the district, and while some immunization campaigns did well, others failed to reach enough children. As many as 20% of children were missed during a campaign conducted in September.

The programme was more successful in preventing wild poliovirus from re-establishing a foothold in non-endemic areas. Although isolated cases were reported in other provinces, a combination of higher levels of pre-existing immunity and effective outbreak response preserved polio-free status in these areas.

**Wild Polio Virus Cases in Afghanistan, 2011**




*Data at HQ as of 30 April 2012*

### *Outlook*

In 2012, the programme will focus on:

- improving the quality of SIAs in the same 28 districts of the endemic zone; and,
- ensuring high immunity levels in polio-free areas to keep polio from re-establishing itself in the event of a re-infection.

Early 2012, the Government and its polio eradication partners finalized a National Polio Eradication Emergency Action Plan to define and address the key challenges for missing too many children.

To address access problems in conflict areas, the Emergency Plan aims to:

- renew efforts in the worst-performing districts to more fully engage local leaders and stakeholders;
- engage with humanitarian organizations active in conflict areas;
- negotiate access using local-level access negotiators;
- continue to scale-up proven operational approaches, such as SIADs; and
- roll-out new innovative operational approaches, including the "permanent polio teams" approach (see Box for more).

#### Permanent polio teams in districts where security is compromised

"Permanent polio teams" are vaccination teams that include locally respected community members and that are based in key districts for a period of three months at a time. During that period, teams are able to participate in large scale NIDs and SNIDs and administer additional OPV doses in communities living in hard to reach and insecure areas. It is but one example of the many new approaches being undertaken in Afghanistan to eradicate polio once and for all.

To improve management and accountability, the Plan will:

- strengthen programme capacity at the district level by appointing dedicated full-time district polio managers in each of the 28 endemic districts;
- closely monitor and assess activities through provincial level polio teams; and
- refine post-campaign monitoring to obtain a clear picture of programmatic performance in near-real time, enabling corrective measures to be implemented.

To support the managerial aspects of planning, implementing and monitoring of SIAs and surveillance activities, the Emergency Plan aims to:

- raise the number of technical staff;
- strengthen micro-planning at the local level; and
- increase the recruitment of local personnel for vaccination teams and supervision, and ensure that new staff receives appropriate training.

Finally, to generate greater demand for immunization in communities, the Emergency Plan will:

- build up communications activities; and,
- continuously assess community perceptions using techniques such as knowledge, attitudes and practices (KAPs) surveys, using findings to inform social mobilization strategies.

Of the three remaining endemic countries, Afghanistan is probably the one where interrupting transmission would be the least technically challenging. Only one geographically contained serotype remains, and the reasons for its continued circulation are clearly identified. Committed and unwavering implementation of the National Polio Emergency Action Plan can only lead to a polio-free Afghanistan.

# 4 | Protecting polio-free areas

## Preventing and managing international spread to polio-free areas

Most countries have successfully stopped polio transmission at great financial, political and social expense. Yet, nearly half of the people paralysed by polio during the past three years lived in polio-free countries, and were infected by a virus imported from an endemic country. As long as the virus is not eradicated in these reservoir countries, polio will continue to spread and re-infect polio-free areas, as it did in 2011, when a virus of Pakistani origin caused an outbreak in China's Xinjiang province. All the WHO Regions, save that of the Americas, have suffered importations of poliovirus since becoming polio-free.

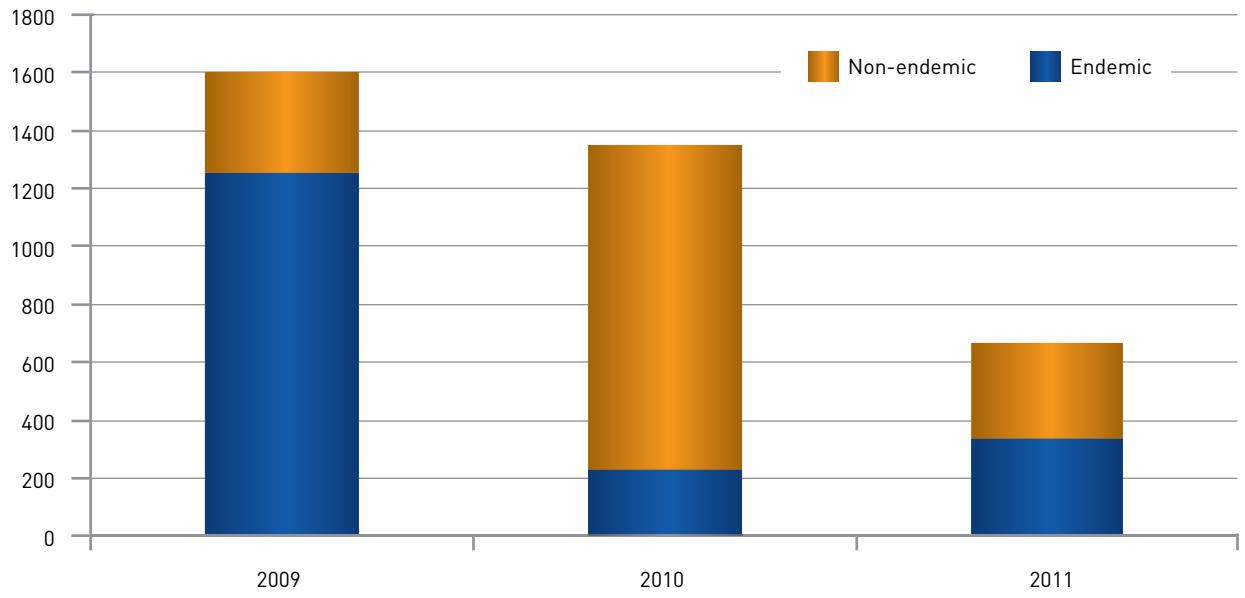
*The few remaining areas with polio are now threatening the polio-free world*

With most of the world now polio-free, some areas are affected by declining vaccination coverage, and therefore a growing numbers of young adults are immunologically susceptible, also never having been exposed 'natural immunization' due to exposure of endemic circulation of wild poliovirus. The tragic consequences are an increase in the number of outbreaks affecting adults and significantly higher case fatality rates. In the recent outbreaks in the Republic of Congo (2010) and China (2011), half the victims were adults. In the Republic of Congo, nearly half of them died. Outbreaks with such devastating consequences will occur at an increasing rate unless polio is eradicated.

In 2011, experience in dealing with outbreaks in polio-free areas has confirmed four key lessons that complement the internationally agreed response protocols for in these domains.

- First, preventive polio vaccination campaigns, particularly when synchronized across several countries, build an immunity barrier. The west African "polio importation belt" reported fewer cases in 2010–2011 than it did during the 2003–2005 outbreaks largely thanks a series of preventive campaigns to improve immunity. In 2011, 128 polio SIAs were held in 37 polio-free countries at risk of importation. However, these campaigns had to be discontinued or scaled-back in 24 countries during the first quarter of 2012 due to lack of funds.

**Proportion of cases in non-endemic areas 2009 - 2011**



- Second, surveillance is an essential underpinning of rapid response because it enables a faster detection of the spread. This was clearly demonstrated in the 2011 outbreak in China, where improving the quality of surveillance was an integral part of response activities.

- Third, response must be swift. The sooner the immunization campaign is launched, the shorter the duration of the outbreak and the lower the number of cases.

- Fourth, the response should be tailored to the nature of the outbreak and to the affected population's profile. China and the Republic of Congo provide examples of successful innovative approaches, such the SIAD, where two doses of vaccine are delivered in quick succession to boost immunity among children, or raising the vaccination age to 15 years or higher to improve rapidly the overall immunity in places where it is significantly lower among older children or young adults.

*Responding to polio outbreaks in polio-free countries cost US$ 336 million in 2011*

The recent outbreak in China is a perfect example of the danger posed by polio even in countries with high reported national vaccination coverage. This is why the WHO Executive Board recommends that countries:

- identify any areas with suboptimal immunization coverage and rapidly fill these gaps;
- strengthen surveillance to more rapidly detect a virus importation (allowing for a more rapid outbreak response); and
- fully apply vaccination recommendations for all travellers to polio-infected areas.

Polio-free countries also have a responsibility to help fund the global polio eradication effort, and to make available the technical support required to complete the task.

## Polio surveillance: chasing down the virus

### *Situation*

High levels of immunity must be associated with strong surveillance to truly minimize the risk and consequences of re-infection. The quicker polio is detected, the faster it can be dealt with, and experience has shown that a rapid response directly translates into shorter outbreaks, limited spread and fewer cases. Since 2009, new procedures within the Global Polio Laboratory Network (GPLN) have halved the time needed to confirm the presence of poliovirus in clinical specimens, markedly reducing the size and duration of new outbreaks.

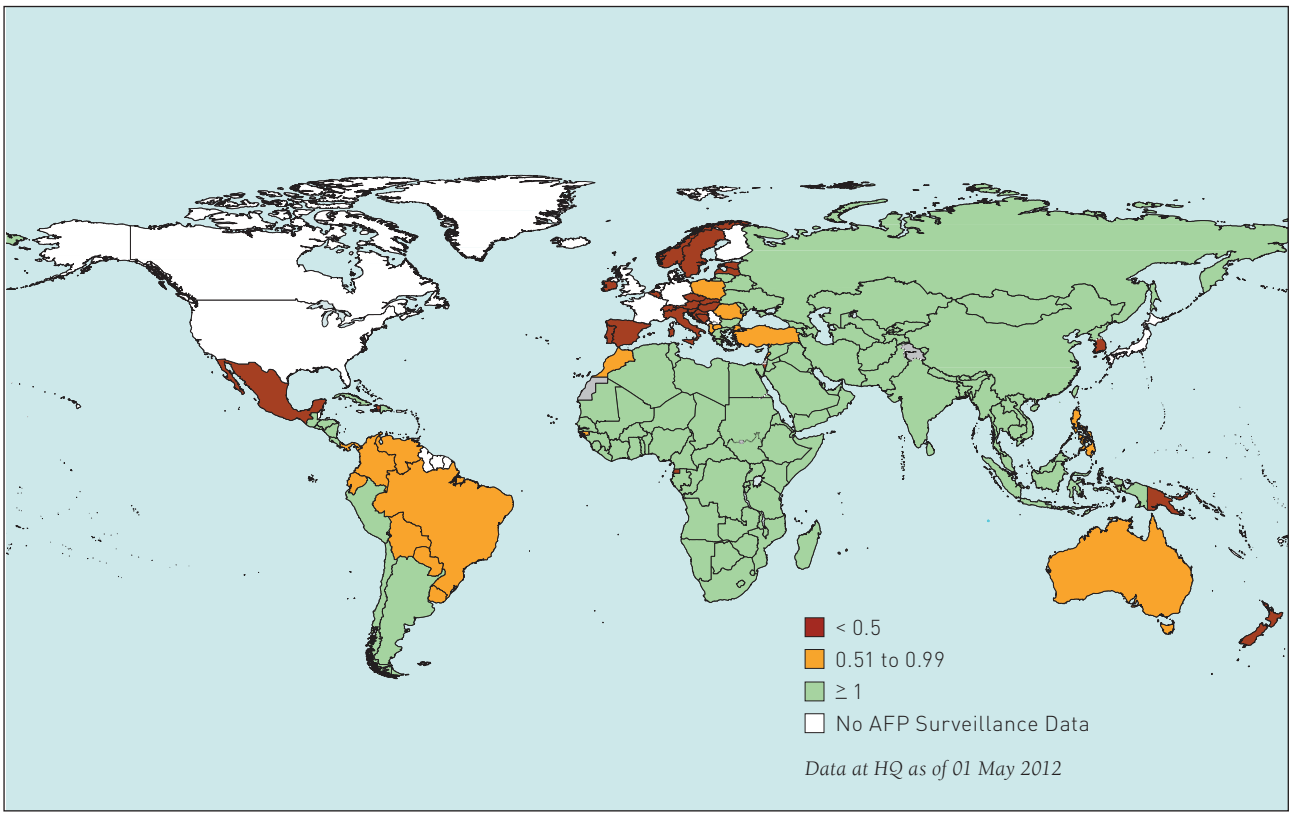
AFP surveillance remains the core strategy to detect both wild and vaccine-derived poliovirus in a timely manner. Three performance indicators are used to determine whether AFP surveillance is of certification standard:

- detecting and investigating more than one non-polio AFP case per 100 000 population aged less than 15 years (in priority countries, the target is more than two cases per 100 000);
- collecting adequate specimens from at least 80% of reported AFP cases; and,
- processing all specimens in an WHO-accredited GPLN laboratory.

**Surveillance indicators 2010 vs 2011**

| REGION | AFP CASES REPORTED | | NON POLIO AFP RATE | | AFP CASES WITH ADEQUATE SPECIMENS (%) | |
|---|---|---|---|---|---|---|
| | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 |
| AFR | 16 500 | 16 643 | 4.3 | 4.4 | 87 | 88 |
| AMR | 2 006 | 1 843 | 1.2 | 1.1 | 79 | 78 |
| EMR | 11 338 | 11 686 | 5.6 | 5.7 | 91 | 90 |
| EUR | 2 087 | 1 542 | 1.2 | 1.3 | 86 | 87 |
| SEA | 60 456 | 65 557 | 11.2 | 12.1 | 83 | 85 |
| WPR | 6 401 | 7 312 | 1.8 | 2.1 | 89 | 90 |
| **Global total** | **98 788** | **104 583** | **5.6** | **5.9** | **85** | **86** |

**AFP surveillance at national level - 2011**




In 2011, surveillance sensitivity improved in all WHO Regions, with the exception of the two Regions for the Americas and Europe, where the number of reported non-polio AFP cases declined slightly.

All priority countries – polio endemic, re-established transmission and "polio importation belt" – achieved the augmented recommended AFP detection rate of more than two per 100 000 population, except Guinea-Bissau where the rate was 1.7. In a number of key countries however, the detection of "orphan" viruses and/or of polioviruses from non-AFP sources (for instance from environmental samplings of sewage water) attests to continued gaps in subnational surveillance.

### *Actions*

Several mechanisms were scaled up in 2011 to enhance poliovirus detection and help rapidly identify and address subnational surveillance gaps:

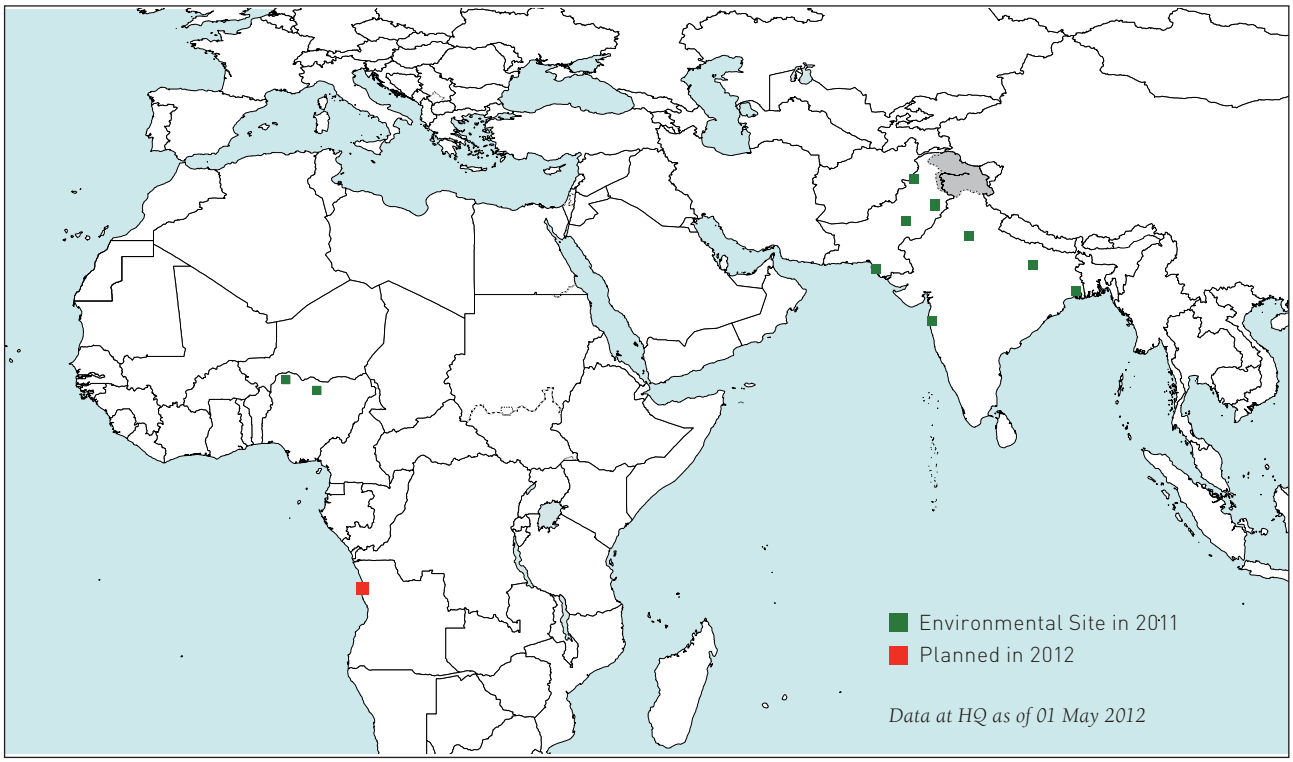
- Comprehensive surveillance reviews were conducted in 20 countries spread over the WHO Regions for Africa, the Eastern Mediterranean, South-East Asia as well as Europe (following outbreaks in Kazakhstan, the Russian Federation Tajikistan and Turkmenistan in 2010).
- Innovative "rapid assessments", first piloted in 2010, were implemented in key areas of Nigeria. These new tools – a quick survey of surveillance sensitivity by joint national and international experts, followed by immediate deployment to help develop operational plans to address identified surveillance gaps – provided crucial insight into the epidemiological picture affecting Nigeria.
- To further validate the performance of surveillance programmes, environmental sampling was expanded to Kano in Nigeria, and to Patna and Kolkata in India, and the groundwork was finalized to introduce the system in Luanda in Angola, in the first half of 2012.

The GPLN, a network of 145 laboratories all accredited by WHO, continued to work overtime throughout 2011 to support the GPEI. Although a cornerstone of polio eradication, much of the network's activities take place behind the scenes so that its contribution is all too often unrecognized. Without the GPLN's tremendous work, polio eradication would be operating essentially blindly. It is largely thanks to its input that poliovirus

transmission can be accurately tracked and mapped, allowing epidemiologists to target strategies more efficiently.

The GPLN's primary responsibilities are to analyse AFP clinical specimens and characterize poliovirus isolates. However, testing increasingly includes specimens from non-AFP sources (such as sewage samples, specimens from healthy children or blood samples). This work helps better understand the dynamics of poliovirus transmission and characterize population immunity levels therefore ensuring optimal immunization interventions. In 2011, more than 104 000 AFP cases were detected, and more than 201 000 specimens were analysed by the GPLN, a more than 10% increase compared to 2010.

**Global environmental surveillance sites at national level - 2011**




The genetic analysis of poliovirus isolates (regardless of the source) provides crucial information to epidemiologists and public health specialists. The analysis helps detect potential surveillance gaps, track the biodiversity of virus lineages and identify the origin of imported viruses (such as the 2011 outbreak in Xinjiang Province, China, which was linked to a poliovirus circulating in neighbouring Pakistan).

### *Outlook*

The global network for the surveillance and detection of poliovirus, created 25 years ago, is one of the great successes of the GPEI. Over the years, it has become increasingly sensitive and efficient. In 2012, the GPEI will work on making it even stronger, faster and more focused:

- Within WHO, a new data and monitoring team is being established to ensure a multi-pronged approach to systematically capitalize on all available data sources.
- Across all levels of the spearheading technical partners, in particular WHO and the United States Centers for Disease Control and Prevention (CDC), dedicated teams of experts will continuously analyse data sources to provide near real-time tracking of poliovirus circulation and identification of problem areas.

- Data sources will be expanded to include not just core AFP data information, but also population immunity levels (obtained by analysing the vaccination status of non-polio AFP cases, routine immunization data, SIA coverage and seroprevalence surveys) and environmental surveillance data.
- Surveillance activities will be further strengthened among key population sub-groups.
- Community-based surveillance will be expanded.
- Rapid assessments will be further rolled-out, particularly in insecure areas with known orphan viruses.
- New technologies, including mobile phone SMS services, will be prompted for active surveillance in priority areas.
- Environmental sampling will be further expanded, including in outbreak settings and along recognized transmission routes.

As the identification of problem areas improves, experts on standby will be able to shift rapidly the appropriate technical, personnel and financial resources to support the development and implementation of corrective operational plans. The aim is to speed up the detection of polioviruses in all areas and communities, and to ensure surveillance gaps are immediately detected and addressed.

## Strengthening immunization systems

Ensuring strong immunization systems for the delivery of routine childhood vaccines, one of the GPEI core strategies since 1988, remains a key objective in the Strategic Plan 2010–2012. High-quality routine immunization services greatly enhance the effectiveness of polio eradication strategies, and significantly minimize the risk – and consequences – of international spread to polio-free areas.

In the remaining endemic countries, strengthening routine immunization is a key component of national polio emergency plans because it helps increase polio vaccination coverage in the highest-risk areas and improve capacity in polio-free areas. Its progress is monitored by national technical advisory groups for polio eradication in line with the latest epidemiology and programmatic updates.

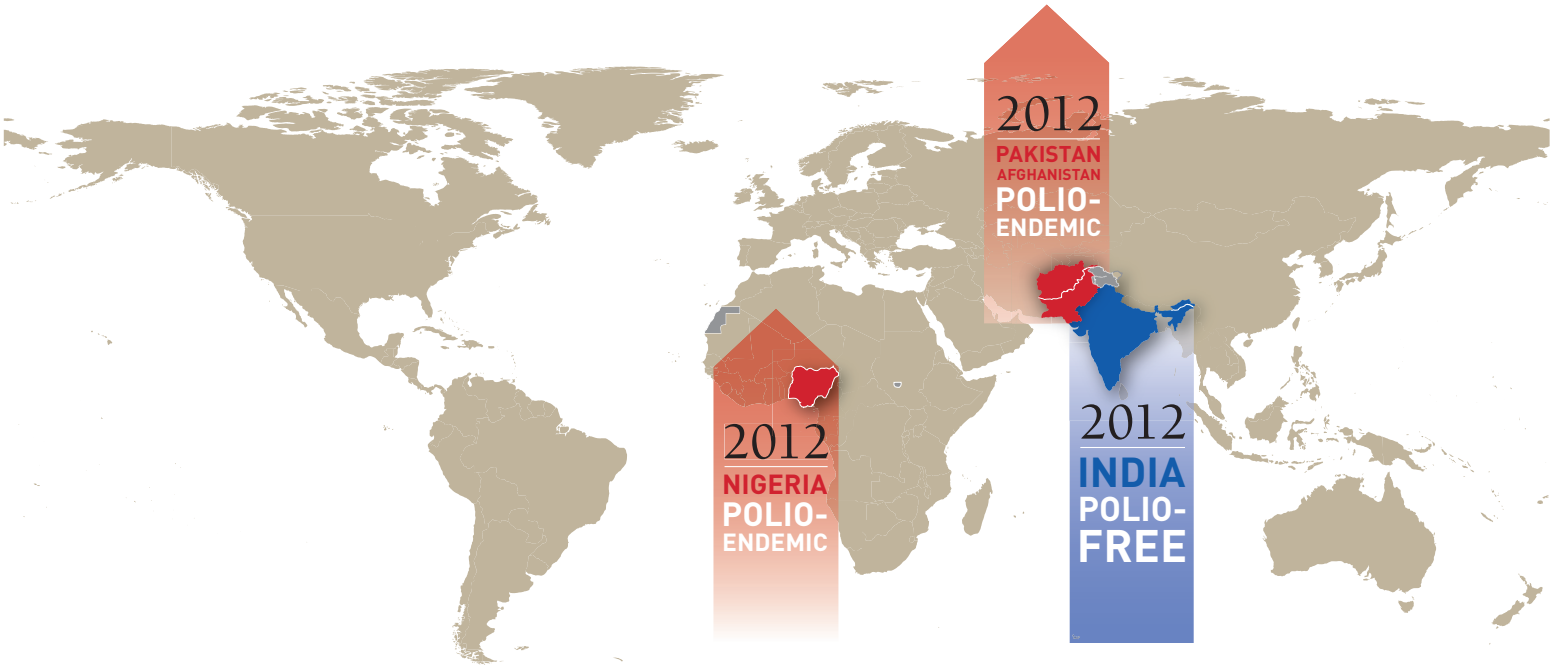
India provides perhaps the best example of how the polio infrastructure can be used to strengthen immunization systems. The nationwide network of surveillance medical officers of the National Polio Surveillance Project (NPSP) supports central and state governments for monitoring and evaluation, the introduction of new vaccines, training and capacity building, adverse events following immunization and vaccine-preventable disease surveillance, giving priority to high-risk and low-performing areas . In 2011, the NPSP helped monitor nearly 8000 routine immunization sessions every month, and verified the vaccination status of more than 60 000 children aged 0–23 months. At district-level, NPSP task force meetings – originally established to review the preparation and performance of SIAs – have become the main forum for sharing routine immunization data and information. Following the recent success in polio eradication, the network has also begun supporting measles and other vaccine-preventable disease surveillance in high-burden states. Its long record of evidence-based decision makes the NPSP the ideal partner to help India strengthen its immunization system in a strategic and pragmatic manner.

India in not the only example: an increasing number of countries have begun using existing polio infrastructure to strengthen their immunization systems. At global, regional and national levels, the GPEI is systematically engaging with the GAVI Alliance to improve collaboration on routine immunization and coverage in priority areas. Building on the lessons learnt in India, polio eradication activities and routine immunization are increasingly being aligned, especially in high-risk areas and among underserved populations. This means that:

- Polio monitoring mechanisms are used to identify gaps in routine immunization systems;
- Polio personnel deployed to complete the eradication programme are used to support the strengthening of routine immunization,
- Polio communications and social mobilization strategies, capacities and activities are used to systematically promote routine immunization;
- Opportunities for collecting social data/research for polio are increasingly informing the Expanded Programme on Immunization (EPI) communications strategies;
- Routine immunization plans are harmonized with polio microplans to ensure their completeness.

The years of accumulated experience and structures established for polio eradication are now helping to improve access to vaccines for children most at risk of vaccine-preventable disease, particularly those from difficult-to-access and underserved populations.

# Polio Eradication – An Emergency




On 21 January 2012, having reviewed the global epidemiology and financing situation of the GPEI, the WHO's Executive Board adopted a landmark resolution, declaring the completion of polio eradication a programmatic emergency for global public health.

Since the launch of the GPEI Strategic Plan 2010–2012, the incidence of polio has fallen by more than 50%, and India has proven beyond a doubt that it is technically feasible to eradicate polio. At the same time, countries with re-established poliovirus transmission have shown signs of encouraging progress.

If these achievements are to be preserved in 2011, two emergencies must be tackled as a matter of urgency. The first is epidemiological: poor implementation in Afghanistan, Nigeria and Pakistan has resulted into an upsurge of cases in all three countries. In Nigeria and Pakistan, where both wild poliovirus type 1 and type 3 continue to circulate, it was further accompanied by the exportation of cases to previously polio-free countries. In its latest report, the IMB straightforwardly blamed a "performance of variable quality that […] consistently [fell] below best practice in polio-affected areas". As a result all three countries are off track, having missed the 2010 and 2011 end-of-the-year milestones set by the GPEI Strategic Plan 2010–2012.

The second is financial. Only half the funding required for the period 2012–2013 has been received so far, putting in jeopardy the progress achieved everywhere. In the first quarter of 2012, activities essential to prevent the risk of re-infection had to be cut down in 24 high-risk countries due to acute cash shortage.

Unless poliovirus is rapidly eradicated from the last endemic zones, it will continue to spread and re-infect polio-free areas. About half of all cases reported during the past three years occurred in polio-free countries. Meanwhile, lack of exposure to endemic wild

poliovirus has given rise to a growing number of immunologically susceptible young adults, or in other words, people with no "natural immunity". The consequences of this phenomenon are tragic: an increase in the number of outbreaks affecting adults, and significantly higher case fatality rates. Mathematical modelling shows that failure to eradicate the remaining 1% puts the world at significant risk of polio resurgence, potentially leading to over 200 000 children paralysed annually within a decade – a prospect the IMB called "unthinkable".

*Emergency mode: faster, focused and fully accountable!*

In order to put an end to this very serious threat, the GPEI Emergency Action Plan 2012–2013 was developed in cooperation with Afghanistan, Nigeria and Pakistan. The goal is straightforward: to help all three countries get their respective eradication efforts back on track rapidly, and ensure polio is eradicated from these areas once and for all. The Action Plan banks on three factors: faster, focused and fully accountability. Polio eradication activities must be **faster** at detecting problems, even more **focused** in effectively addressing them and all stakeholders and staff **fully accountable** to ensure the full and timely implementation of Plan.

The GPEI switched to emergency mode at the start of 2012. CDC activated its Emergency Operations Center, UNICEF officially activated an inter-Divisional Emergency Coordinating Committee operating directly under the Deputy Executive Director, and WHO moved its polio operations to the Strategic Health Operations Centre (SHOC).

These measures, usually reserved for global threats such as the H1N1 pandemic or extreme disasters such as the 2004 Indian Ocean tsunami, allow a massive surge in technical capacity, a near real-time tracking of programme performance and the immediate implementation of corrective action plans, as necessary.

Perhaps more importantly, it means that the polio emergency is now overseen at the highest level of the partnership. The supervision provided by the new Polio Oversight Board – which includes the heads of the five partner agencies (WHO, Rotary International, CDC, UNICEF and the Bill & Melinda Gates Foundation) – ensures greater accountability and better use of each organization's strengths.

CENTERS FOR DISEASE CONTROL AND PREVENTION

*CDC Emergency Operations Center (EOC) serves as command center for monitoring and coordinating CDC's emergency response activities to public health threats.*

WHO

*Centre for Strategic Health Operations (SHOC) is the nerve centre of WHO's global epidemic response providing a single point of coordination for response to acute public health crises including infectious disease outbreaks, natural disasters and chemical emergencies.*

In the last three endemic countries, national emergency plans have been augmented and strengthened, and their implementation will be monitored at the highest government level. The plans are based on the following six priorities:

- ensuring accountability at all levels for programme implementation,
- addressing key operational challenges,
- more robustly monitoring tactics,
- improving subnational surveillance sensitivity,
- further creating community awareness and demand, and
- strengthening routine immunization.

Upon reviewing the status of implementation and the priorities laid down in the emergency plans, national technical advisory bodies in Afghanistan, Nigeria and Pakistan concluded that all was in place to achieve success, provided the plans are implemented swiftly and fully.

The funding crisis must be addressed concurrently as continued lack of funding will preclude the full implementation of the national emergency plans, and put the goal of a polio-free world at risk.

## Innovative management of the polio endgame

The GPEI is setting the path for an innovative and more efficient medium-term strategy to address the long-term risks of vaccine-derived polioviruses (VDPVs). The new polio endgame will combine VDPV management with the eradication of residual wild poliovirus transmission. This is a development on previous strategies, which envisaged dealing with the long-term risks of VDPVs only after certification of polio eradication.

In 2011, 56 of the 58 circulating VDPV cases were caused by type 2 serotype contained in trivalent OPV. As WPV type 2 transmission has been successfully interrupted, the Strategic Advisory Group of Experts on immunization (SAGE) has endorsed in principle a switch from trivalent OPV to bivalent OPV (containing only type 1 and 3 serotypes) before the interruption of the remaining strains of WPV type 1 and 3 is confirmed. This view was echoed by WHO's Executive Board in January 2012.
In 2012, policy development will be largely guided by the new SAGE Polio Working Group. It will advise on the best way to proceed with the switch from trivalent OPV to bivalent OPV, and provide SAGE with appropriate guidance to formulate related policy. Such a switch will be contingent first on the successful elimination of all persistent circulating VDPV type 2, and second on the availability of an affordable inactivated polio vaccine (IPV), which would enable countries to maintain immunity to type 2 poliovirus. The introduction of a supplementary dose of IPV could further accelerate the eradication of WPV type 1 and 3 transmission, depending on the timing and extent of its introduction.

If properly implemented, the switch from trivalent OPV to bivalent OPV would have significant public health benefits. Over the past ten years, more than 80% of all circulating VDPV cases were due to type 2. Of the estimated 250-500 annual vaccine-associated paralytic polio cases, up to 38% are due to type 2. Once the change is done, these will disappear. In addition, the switch would be a significant step towards the end of oral polio vaccines. Successfully terminating type 2 OPV would establish the feasibility of withdrawing the remaining serotypes of oral polio vaccines and guide the management of associated risks.

# Financing

*"We must see this [effort] through to the end…"*
*Dr Margaret Chan, Director-General, WHO*

2011 was a year of unprecedented political and financial support, despite a bleak beginning marked by a US$ 335 million funding gap in January against a US$ 982 million budget. The gap had been reduced to US$ 125 million at the start of the fourth quarter when, by a combination of new and forward funding targeted particularly at west, central and east Africa, the total of contributions for 2011 suddenly rose to over US$ 1.1 billion, the largest amount ever received by the GPEI.

During the May 2011 World Health Assembly, delegates' focus was divided between the "significant advances" against polio achieved in 2010 and the funding gap which the IMB had called, in its April 2011 Report, the "single greatest threat to the GPEI's success". WHO Director-General Margaret Chan told the assembled health ministers that the job was not finished and that "we must see this through to the end".

During the World Economic Forum in Davos on 28 January 2011, Prime Minister David Cameron announced a doubling of the United Kingdom's funding for the next two years in a challenge grant. Underlining the importance of strengthening routine immunization as a key part of the bigger picture, Mr Cameron said that for every additional US$ 5 pledged by other donors between 1 January 2011 and 31 December 2012, the United Kingdom would increase its support by US$ 1 up to a maximum of £40 million over the period. "There is never a wrong time to do the right thing. […] We have a once-in-a-lifetime opportunity to rid the world of the evil of polio. We have the vaccines and the tools to do it. All that's missing is real and sustained political will to see this effort through to the end," concluded Mr Cameron.

On 26-27 May 2011, G8 nations unanimously re-affirmed their commitment to polio eradication at their Summit in Deauville, France: "We stress our continuing commitment to the eradication of polio. Our past support has contributed to the 99% decrease of polio cases in the developing countries. We flag the need for a special focus on this issue and renewed momentum. To this end, we will continue to support the GPEI."

Finally, on 31 October 2011, at the Commonwealth Heads of Government Meeting in Perth, Australia, the leaders of Australia, the United Kingdom, Canada, Nigeria and Pakistan joined Bill Gates in pledging more than US$ 100 million in new funds to help deliver a polio-free world. In announcing the Australian pledge of AU$ 50 million pledge, Prime Minister Julia Gillard said: "We are within grasp of declaring the end of polio worldwide. We need to keep this action going. We know it will yield real results. At the end of the day, it's a simple action of two drops of vaccine. We can do that in our world and end polio forever." When Canada's Prime Minister Stephen Harper announced a further CAD$ 15 million in funding, he added "now is the time for the final push…. If we don't stamp out polio we risk its re-emergence, not just in the region but around the world."

## The response: unprecedented financial support in 2011

Acknowledging the financial benefits of eradicating polio (an estimated US$ 40–50 billion through 2035) and the humanitarian consequences of failing to do so, the international donor community provided more than US$ 866 million which, combined with domestic funding, met the requirements for 2011. In addition to the significant contributions provided by G8 nations, the Bill & Melinda Gates Foundation, Rotary International and UNICEF, new commitments were received from Brunei Darussalam, Cyprus, Liechtenstein, Monaco, Romania, the Kingdom of Saudi Arabia and Turkey as well as the Crown Prince of Abu Dhabi, the Arab Gulf Fund for Development, the Google Foundation, the Islamic Development Bank and Shinnyo-en. In all, 31 donors contributed external funding to the GPEI.

As financial support from development partners reached unprecedented levels, domestic funding from the remaining polio endemic countries and those affected by outbreaks due to importations remained strong. Domestic funding accounted for about 27% of the total GPEI contributions for 2011. Of note, India's self-financing topped US$ 249 million at end-2011, with US$ 240 million projected for 2012 and US$ 174 million for 2013. Nigeria committed US$ 9.90 million and during the Commonwealth Heads of Government Meeting in Perth, President

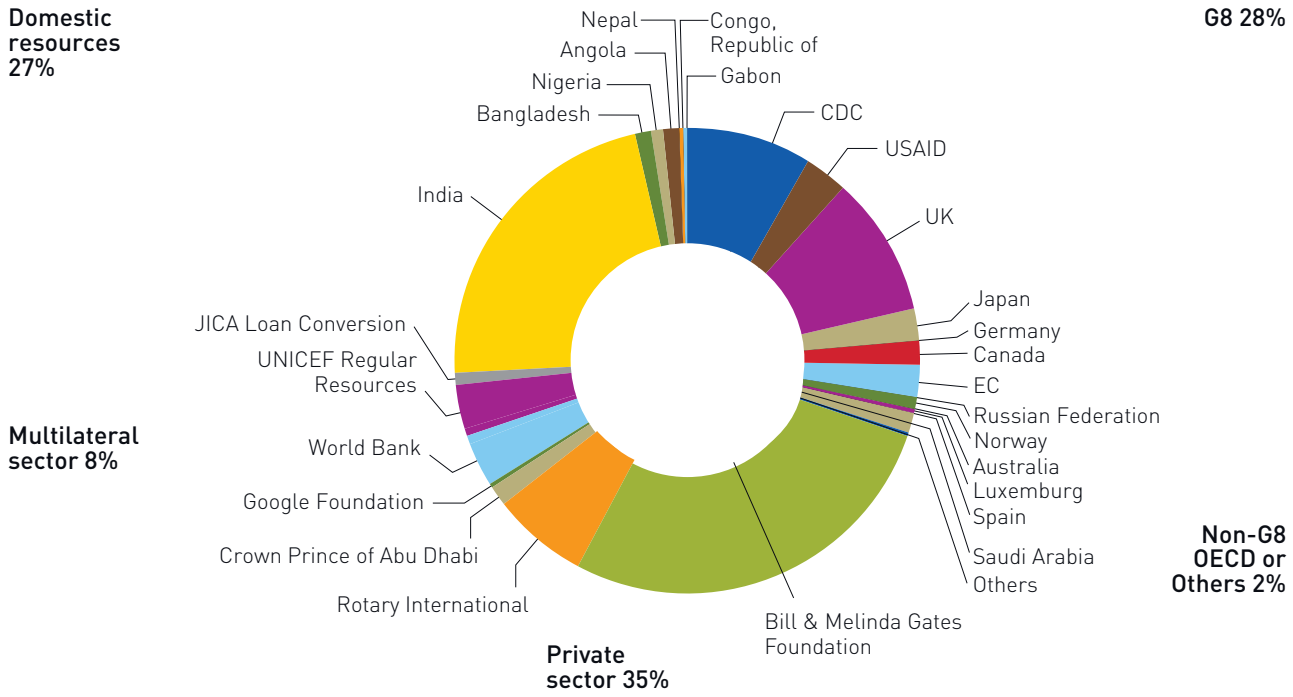
Jonathan also announced an increase in annual funding of up to US$ 30 million starting in 2012. Angola provided US$ 12.53 million to sustain its achievements.

## Going beyond traditional financing

Innovative financing represents an increasing portion of GPEI funding. New funding for the period included extensions of the World Bank "buy-down" mechanism for OPV for Pakistan (US$ 41 million) and Nigeria (US$ 60 million) for the period 2011–2012, co-financed by the Bill & Melinda Gates Foundation, CDC and Rotary International.

In August 2011, the Japan International Cooperation Agency (JICA) launched a new financing mechanism in partnership with the Bill & Melinda Gates Foundation. Under this "loan conversion" model, Japan provided a 4.9 billion JPY (approximately US$ 65 million) overseas development assistance loan to Pakistan for both vaccine and operations costs. If performance criteria are met, the Bill & Melinda Gates Foundation will repay the loan credit to JICA on behalf of Pakistan, in effect converting the loan to a grant.

Financial Contributions of US$ 1.1 billion for 2011




'Others' includes governments (Brunei Darussalam, Cyprus, Finland, Italy, Liechtenstein, Monaco, Romania & Turkey) and other institutions (AGFUND, CERF, Islamic Development Bank & Shinnyo-en). *As of 19 April 2012*

# Contributors

The **Arab Gulf Fund for Development (AGFUND)** awarded a US$ 90 000 grant for polio eradication activities in Ethiopia.

**Australia** announced a new four-year commitment of AU$ 50 million (approximately US$ 49 million) to be operational by early 2012. Australia also continued supporting Uruzgan province in Afghanistan and provided US$ 340 000 to respond to the VDPV outbreak in Myanmar, bringing Australia's total funding to US$ 18 million.

The **Bill & Melinda Gates Foundation** provided an additional US$ 125.85 million in supplemental grants to WHO and UNICEF as well as third party funding for the World Bank buy-down for Nigeria and Pakistan, bringing the Foundation's total commitment for 2011 to more than US$ 300 million. It also granted Rotary International an additional US$ 50 million to extend their partnership over 2013–2015. These grants bring the Foundation's total contribution to the GPEI, including matching grants to Rotary International, to US$ 1.47 billion.

**Brunei Darussalam** provided US$ 150 000 for the period 2011–2013. This is the Sultanate's second multi-year commitment, bringing its total contribution for the period 2008–2013 to US$ 300 000.

**Canada** disbursed US$ 23.97 million for Afghanistan and sub-Saharan Africa as part of a multi-year commitment announced in November 2010 following the Muskoka Initiative for maternal and child health. A further CAD$ 15 million, to be made available early 2012, was announced during the Commonwealth Heads of Government Meeting in Perth. Canada is the fifth-largest public sector donor to the GPEI, having provided more than US$ 306.67 million.

The **Central Emergency Response Fund (CERF)** responded quickly to funding appeals for the VDPV outbreak in Myanmar, providing US$ 370 000 to UNICEF. CERF has provided US$ 5.13 million to date.

In addition to its role as a spearheading partner, the **United States Centers for Disease Control & Prevention (CDC)** provided funding for OPV, operational costs and programme support to UNICEF and WHO and continued to dispatch its epidemiologists, virologists and technical officers to assist polio-affected countries in implementing polio eradication activities. US Congress appropriations to CDC for polio eradication in its fiscal year 2011 totalled US$ 101.6 million, bringing CDC's total contributions to more than US$ 1.6 billion.

The **Crown Prince of Abu Dhabi**, His Highness Sheikh Mohammed bin Zayed Al Nahyan, provided US$ 17 million to WHO and UNICEF to deliver polio vaccines in Afghanistan and Pakistan. This contribution was part of a larger partnership with the Bill & Melinda Gates Foundation.

**Cyprus** provided US$ 2000 through its partnership with the United Nations Foundation. This complements a previous contribution, bringing the country's total support to US$ 4000.

The **European Commission** provided € 20 million for activities in Nigeria in 2011 and 2012. **ECHO** also provided € 782 110 for the outbreak in Côte d'Ivoire and € 420 000 for the VDPV outbreak in Myanmar. The **European Commission** is the sixth largest public-sector donor to the GPEI, with contributions totalling US$ 224 million.

**Finland** provided US$ 260 000, the second instalment of a three-year 10:1 matching grant with Rotary International for activities in Afghanistan, bringing its total support to US$ 1.64 million.

**Germany** disbursed US$ 2.54 million as part of its 2011 commitment to WHO and the programme in India. Germany's total support to the GPEI has reached US$ 390.94 million, making it the fourth largest public sector donor.

The **Google Foundation** provided US$ 4 million to address the critical funding gap for OPV for outbreak response. The donation enabled UNICEF to secure its vaccine pipeline and sustain its polio eradication programme in 2011.

The **Islamic Development Bank** granted Afghanistan US$ 470 000 for OPV to be purchased by UNICEF.

**Italy** provided US$ 600 000 in global unspecified funding through WHO. Italy's total support to the GPEI is US$ 39.76 million.

**Japan** reinforced its strong commitment for polio eradication and continued to provide critical support for the procurement of OPV via UNICEF in 2011. Japan provided more than US$ 24 million for OPV and operations costs for Afghanistan, Angola, DRC, India, Liberia and Pakistan. Japan, together with JICA and the Bill & Melinda Gates Foundation, initiated a new loan conversion mechanism, **"JICA Loan Conversion"**, for Pakistan, totaling US$ 65 million to cover OPV procurement and operational costs for the period 2011–2013. Multi-stakeholder dialogue was enhanced during the Asia Pacific High-level Meeting on Innovative Partnership for Health in October, and a charity reception for World Polio Day 2011 was hosted by the Japan Institute for Global Heath, along with Rotary International and the Bill & Melinda Gates Foundation. It included the participation of the Diet Task Force on Global Polio Eradication, established in 2011. Japan is the third largest public sector donor to the GPEI, with contributions totalling more than US$ 426.93 million.

The **Principality of Liechtenstein** provided CHF 15 000 as a year-end contribution, bringing its total support to US$ 50 000.

**Luxembourg** contributed US$ 700 000 as part of a multi-year commitment covering the period 2009–2013. Luxembourg is the second largest per capita contributor with a total of US$ 15.06 million.

**Monaco** became the GPEI's largest per capita contributor. For the first time, Monaco concluded a multi-year agreement for 2011–2013, contributing € 375 000 for activities in Niger. This brings Monaco's total funding for polio eradication activities in Niger to US$ 1.06 million.

**Norway** continued to provide critical unspecified contributions to the GPEI. In 2011, it provided US$ 9.78 million, bringing its total contributions to US$ 85.80 million.

**Romania** made its first-ever contribution to the GPEI, totalling US$ 20 000, through its partnership with the United Nations Foundation.

**Rotary International**, in addition to being a spearheading partner in the GPEI, is also the second-largest private sector donor. By January 2012, Rotary International announced that Rotary Clubs worldwide had succeeded in meeting the Bill & Melinda Gates Foundation's US$ 200 million match in funding for polio eradication – reaching the fundraising milestone six months early. In 2011, Rotary International disbursed US$ 72.83 million to the GPEI. By 2013, Rotary International will have contributed more than US$1.23 billion.

The **Russian Federation** disbursed US$ 2 million as part of a US$ 5 million multi-year commitment (2010–2012) made in response to the 2010 G8 communiqué. Russia has provided US$ 33 million to the GPEI since 2003.

The **Kingdom of Saudi Arabia** provided US$ 15 million as part of a US$ 30 million 2011–2012 commitment for OPV and operations in west Africa and the Horn of Africa.

**Shinnyo-en** provided US$ 100 000 to support technical assistance and surveillance activities in the Western-Pacific Region, bringing its total contribution to date to US$ 1.22 million.

**Spain** contributed € 520 000 as part of a 2009–2011 commitment for surveillance activities in Africa. This was complemented by US$ 390 000 in additional unspecified funding. Since joining the GPEI in 2004, Spain has contributed US$ 14.18 million.

**Turkey** continued its support, providing a year-end contribution of US$ 50 000, bringing its total support to US$ 780 000.

On 28 January 2011 at the World Economic Forum in Davos, UK Prime Minister David Cameron announced a doubling of the United Kingdom's funding for 2011–2012 in a challenge grant. For every additional US$ 5 pledged by other donors between 1 January 2011 and 31 December 2012, the United Kingdom will increase its support by US$ 1 up to a maximum of an additional £40 million over the period. For 2011, the match requirement was fulfilled by May. Coupled with its multi-year global commitment, matching funds and specified support for the DRC, the **United Kingdom's Department for International Development (DFID)** disbursed US$ 107.84 million. The United Kingdom is the second largest public sector contributor with total contributions of US$ 962.08 million.

In 2011, spearheading partner **UNICEF** continued to see polio eradication as priority and provided significant funding to its country offices. In total, UNICEF provided more than US$ 37 million for polio eradication activities through several channels: US$ 15 million for OPV from the discretionary core funding, US$ 18.9 million for OPV and staff costs from country offices core resources (Board approved budget) and US$ 3.3 million for polio eradication activities in priority countries fundraised by UNICEF National Committees.

The **United Nations Foundation (UN Foundation)** continued its support of the GPEI's resource mobilization efforts with a contribution of US$ 200 000. In addition to its financial support, the UN Foundation played a key role in facilitating support from non-traditional donors, such as Cyprus, Liechtenstein and Romania. The UN Foundation's total support for the GPEI is US$ 43.54 million.

The US Congress in its fiscal year 2011 allocated US$ 31.9 million to the **United States Agency for International Development (USAID)** for polio eradication activities. Funds were used to support social mobilization, surveillance and laboratory activities, outbreak response and monitoring in priority countries, bringing USAID's total support to US$ 444 million.

An innovative financing mechanism with the **World Bank**, commonly referred to as "IDA buy-downs", was developed to allow the use of credit issued by the International Development Association (IDA), the concessionary lending arm of the World Bank, for OPV procurement. Third-party donor funding (provided by the Bill & Melinda Gates Foundation, CDC, Rotary International and UNF) is used to "buy-down" IDA credits and turn them into grants. In 2011, US$ 33.61 million was disbursed under the buy-downs for Pakistan and Nigeria. The total amount of support committed until 2012 under this mechanism, called "the World Bank Investment Partnership for Polio", is US$ 316.37 million. In addition, the World Bank provided a grant of US$ 4.8 million for the DRC.

# Annex 1 | 2011 progress report of the global milestones and process indicators of the GPEI Strategic Plan 2010-2012

| MILESTONE | MEASUREMENT | BASELINE | STATUS |
|---|---|---|---|
| **By mid-2010, cessation of all polio outbreaks with onset in 2009** | Number of countries[1] with 2009 outbreak reporting related WPV after 30 Jun 10 | 15 countries with WPV importation in 2009 | 0 countries reporting genetically related WPV after 30 Jun 2010 |
| **Cessation of new outbreaks within six months of confirmation of index case** | Number of countries[1] with a new importation WPV (genetically distant from previous circulation in the country) persisting >6 months from confirmation of index case | 8 countries with WPV importation in 2011<br><br>(Central African Republic, China, Côte d'Ivoire, Gabon, Guinea, Kenya, Mali, Niger) | 1 country with WPV importation persisting >6 months<br><br>(Mali - most recent WPV on 23 June 2011) |
| **By end-2010, cessation of all 're-established' poliovirus transmission** | Number of countries with 're-established' transmission reporting genetically-related WPV after 31 Dec 2010 | 4 countries with 're-established' transmission (Angola, Chad, DRC, South Sudan) | 3 countries with 're-established' WPV after 31 Dec 2010<br><br>Chad: WPV1 importation in Sept 2010 persists >12 months and now considered 're-established' |
| **By end 2011, cessation of polio transmission in at least 2/4 endemic countries** | Number of WPV cases reported year-to-date 2010 and 2011 | WPV Jan-Dec 2010[2]<br>Pakistan: 144<br>Afghanistan: 25<br>Nigeria: 20<br>India: 42 | India[3] > 12 months without WPV<br>WPV Jan-Dec 11[2] in 3 endemic:<br>Pakistan: 197 (+37%)<br>Afghanistan: 80 (+220%)<br>Nigeria: 57 (+185%) |

1 *Excluding endemic and re-established transmission countries (analysed separately).*
2 *Calculated from data reported to WHO/HQ from 25 January 2011 and 24 January 2012.*
3 *India was officially removed from the list of endemic countries in February 2012 after full year of negative laboratory results from AFP and environmental surveillance.*

## COMMENTS

No country with onset of outbreak in 2009 has reported a genetically-related WPV in 2011

| Country | Most recent case 2011 | Type | Number of months most recent case and | |
|---|---|---|---|---|
| | | | Notification of index case | Onset of paralysis of index case |
| Country with 2010 importation persisting >6 months | | | | |
| Mali | 23 Jun | W3 | 8 | 9 |
| Country with importation in 2011 | | | | |
| Niger^ | 22 Dec | W1 | <1 | <1 |
| CAR | 8 Dec | W1 | 2 | 2.6 |
| Niger^ | 30 Oct | W3 | Single case | |
| China | 9 Oct | W1 | 1.4 | 3 |
| Guinea | 3 Aug | W3 | 2 | 2.7 |
| Kenya | 30 Jul | W1 | Single case | |
| Côte d'Ivoire | 24 Jul | W3 | 3 | 5 |
| Mali^ | 10 Jun | W3 | 2 | 4 |
| Gabon | 15 Jan | W1 | Single case | |

Note: A Nigerian nomad AFP was reported on 18 Jan 12 from Cameroon. Investigation ongoing to determine country of onset.
^Countries with multiple importations.

| Country | Date of most recent WPV | |
|---|---|---|
| | 're established' | new importation |
| Chad | 20 Dec 2011 | |
| DRC | 28 Nov 2011 | 29 Sep 2011 |
| Angola | 27 Mar 2011 | 7 Jul 2011 |

India[3]: most recent WPV 13 Jan 11
Date of onset of most recent WPV in 3 endemic countries:
Pakistan: 6 Jan 2012
Afghanistan: 1 Jan 2012
Nigeria: 2 Dec 2011

## Process indicators for end-2011

| | |
|---|---|
| **INDIA** | >95% population immunity to type 1 and type 3 polio in the persistent transmission areas of western Uttar Pradesh and central Bihar |
| **STATUS** | **Partially achieved** |
| | Serosurvey 2011: Field work was completed in August 2011. Preliminary results at Q1 2012 indicate:<br>Uttar Pradesh: 98% immunity to type 1; 89% immunity to type 3<br>Bihar: 99% immunity to type 1; 87% immunity to type 3 |
| **NIGERIA** | >80% of children with >3 doses of OPV (per non polio AFP data) in each of the 12 high risk states (including the eight persistent transmission states)<br>*Note: Progress has been assessed on the basis of ≥3 doses* |
| **STATUS** | **Not achieved** |
| | 9 of 12 states achieved |
| **PAKISTAN** | 1. <10% missed children during at least 90% of SIAs in the Quetta area and in the persistent transmission districts of Khybher Pakhtunkhwa and agencies of Federally Administered Tribal Areas (FATA);<br>2. >90% of children with >6 doses of OPV in Sindh and Punjab*<br>** Assessed in children with non polio AFP 6 35 months of age.* |
| **STATUS** | **Not achieved** |
| | 1. 1 of 7 districts achieved |
| | 2. 0 of 2 provinces achieved |
| **AFGHANISTAN** | <10% missed children during at least 80% of SIAs in the 13 conflict affected districts with persistent transmission in Southern Region.<br>*Note: Progress has been assessed on the basis of "at least 6 SIAs" as per the Strategic Plan* |
| **STATUS** | **Not achieved** |
| | 0 of 13 districts achieved |
| **ANGOLA** | <10% missed children in all districts of Luanda, Benguela and Kwanza Sul during each SIA |
| **STATUS** | **Not achieved** |
| | 30 districts: 9 districts - no data; 6 of 21 districts achieved |
| **CHAD** | <10% missed children in greater N'Djamena and in the southern and eastern WPV transmission zones during each SIA |
| **STATUS** | **Not achieved** |
| | 0 of 3 zones achieved |
| **DR CONGO** | <10% missed children in each SIA in Orientale, North & South Kivu and and all provincial capitals); AFP rate >2 with 80% adequate specimens in all provinces |
| **STATUS** | **Partially achieved** |
| | 1. 4 of 7 provinces achieved |
| | 2. 11 of 11 achieved for NPAFP<br>4 of 11 provinces achieved for adequate specimen |

| | | | | |
|---|---|---|---|---|
| **SOUTH SUDAN** | end-2010: <10% missed children in each state during each SIA; AFP rate >2 with 80% adequate specimens rates in all states | | | |
| **STATUS** | **Partially achieved** | | | |
| | 1. 4 of 10 states achieved<br>2. 10 of 10 states achieved | | | |
| **WPV IMPORTATION BELT** | <10% missed children in two SIAs in all 1st and 2nd level priority countries in the WPV importation belt (based on end 2010 prioritization) | | | |
| **STATUS** | **Not achieved** | | | |
| | 19 countries: 11/19 countries achieved (2 countries no data) | | | |
| **SURVEILLANCE** | Non polio AFP rate >2 and >80% adequate specimen rate achieved at the sub national level in all endemic, re established transmission and "WPV importation belt" countries. | | | |
| **STATUS** | **Not achieved** | | | |
| | **All countries** | | **Countries** | **Outcome*** |
| | Non-polio AFP rate ≥2 and ≥80% adequate specimen rate achieved at sub-national level in all endemic, re-established transmission, and WPV importation belt countries | Non-polio AFP rate | Endemic | 3 of 4 |
| | | | Re-established transmission | 2 of 4 |
| | | | WPV importation belt | 5 of 19 |
| | | | Outbreak countries outside of WPV importation belt | 2 of 12 (excluding China, no data) |
| | | Specimen adequacy | Endemic | 1 of 4 |
| | | | Re-established transmission | 1 of 4 |
| | | | WPV importation belt | 3 of 19 |
| | | | Outbreak countries outside of WPV importation belt | 4 of 12 (excluding China, no data) |
| | ** Outcome for current quarter. Date of current (4th) quarter data: IM (Jan-Dec 2011), NPAFP (28 Dec 2010-27 Dec 2011)* | | | |
| **ENVIRONMENTAL SAMPLING EXPANDED TO TWO ADDITIONAL RESERVOIR AREAS.** | | | | |
| **STATUS** | **Achieved** | | | |
| | Pakistan: Environmental surveillance for polioviruses continues in Pakistan. No new sites were added in 2011. | | | |
| | India: Environmental surveillance continues in Mumbai and Delhi in India. New environmental sites added in 2011 in Patna, Bihar and Kolkatta, West Bengal. | | | |
| | Nigeria: Environmental surveillance commenced in Kano. | | | |

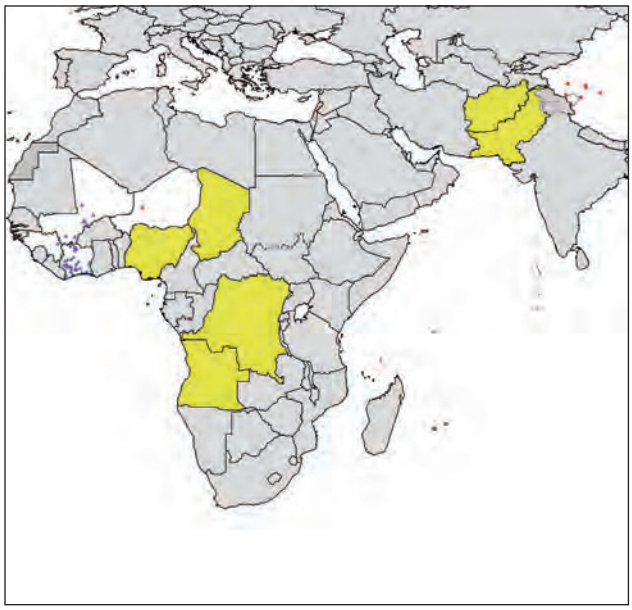
| OUTBREAK RESPONSE | 100% of WPV importations and cVDPVs in previously polio free areas responded to per updated outbreak response guidelines based on 2010 operational research and clinical trials; international assessment conducted in 90% of countries with importation events persisting for >6 months. |
|---|---|
| STATUS | Partially achieved |
| | WPV: 9 of 10 importation events responded to as per international outbreak response guidelines*<br>* Côte d'Ivoire was unable to conduct an SIA response within 4 weeks of notification due to civil unrest. The first response was conducted 8 weeks after notification. |
| | cVDPV: 1 of 3 new cVDPV emergences in previously polio-free areas responded to as per international outbreak response guidelines.*<br>* Mozambique response was conducted 7 weeks after notification. Yemen response was delayed due to insecurity in affected area. |
| | International assessments: 1 outbreak >6 months (international assessment conducted in Mali). |
| STRENGTHENING IMMUNIZATION SYSTEMS | 1. Reaching Every District (RED) implemented in at least 80% of districts at highest risk of importations<br>2. Tracking of immunization systems indicators in at least 80% of countries |
| STATUS | Partially achieved |
| | 1. Not achieved<br>AFRO: 59% of countries achieved (one country data not available)<br>EMRO: 50% of countries achieved<br>SEARO: 66% of countries achieved |
| | 2. Achieved |
| | Assessed through % of districts with microplans to raise immunization coverage, and multi-year plan in place for immunization (yes or no); data as at end-2010 per WHO-UNICEF Joint Reporting Form: AFRO (countries in wild poliovirus importation belt of sub-Saharan Africa); EMRO (Afghanistan, Pakistan); and, SEARO (Bangladesh, India, Nepal) |

# Annex 2 | Supporting data for progress report

## Milestone 1: Cessation of all new polio outbreaks within 6 months

Status at 24 Jan 2012: 1 outbreak persisting >6 months (Mali)

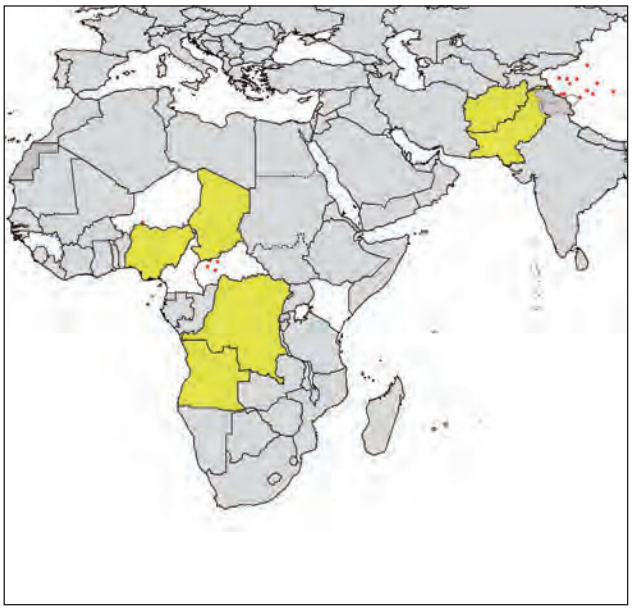
**Outbreak countries with WPV reported 6-12 months ago (25 Jan 2011 – 24 Jul 2011)***



**Mali:** WPV3 importation of Sept 2010 persisted >6 months. The most recent related WPV was detected 23 June 2011.

- ● WPV1
- ▲ WPV3
- ☐ Country with WPV importation
- ☐ Endemic / Re-established transmission country (India will be officially removed from the list of endemic countries by the end of February 2012 after a full year of negative laboratory results from both AFP and environmental surveillance)

**Outbreak countries* with WPV reported <6 months ago (25 Jul 2011 – 24 Jan 2012)**



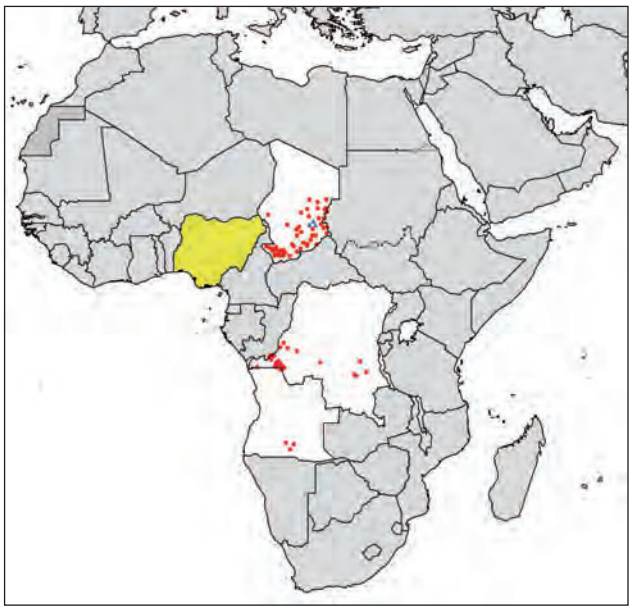
**Note:** A Nigerian nomadic child was reported as AFP on 18 Jan 2012 from Cameroon. Investigation ongoing to determine country of onset.

*Data at WHO/HQ as of 24 Jan 2011.*
**Kenya and Guinea will pass 6 months without WPV on 30 Jan 2012 and 3 Feb 2012 respectively.*

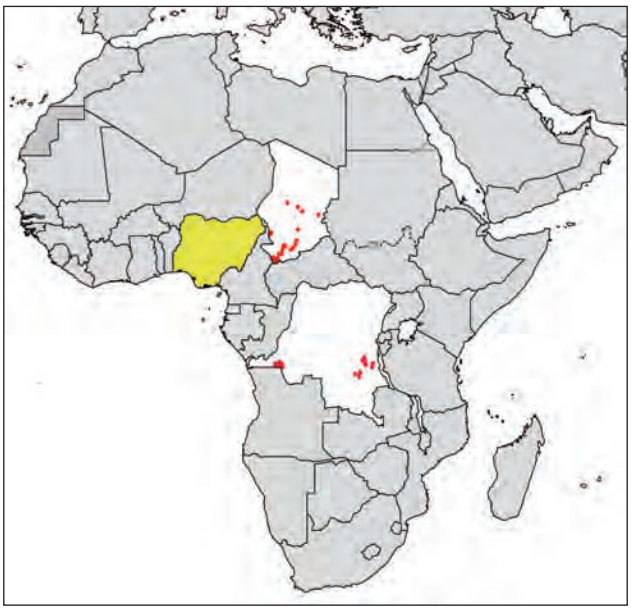
## Milestone 2: By end 2010, cessation of all re-established WPV

Status at 24 Jan 2012: 3 countries with continued re-established WPV

**Re-established transmission countries WPV reported 6-12 months ago (25 Jan 2011 – 24 Jul 2011)**



**Re-established transmission countries WPV reported <6 months ago (25 Jul 2011 – 24 Jan 2012)**



- WPV1
- WPV3
- Endemic country
- Re-established transmission country

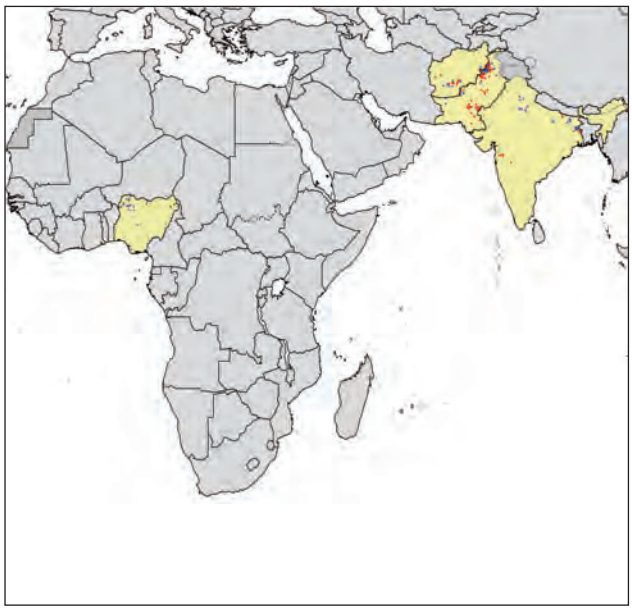
*Data at WHO/HQ as of 24 Jan 2011*

| | Number of WPV cases 6 12 months ago | | | Number of WPV cases <6 months ago | | |
|---|---|---|---|---|---|---|
| | Total | Type 1 | Type 3 | Total | Type 1 | Type 3 |
| Angola | 4 | 4 | 0 | 0 (-100%) | 0 | 0 |
| Chad | 98 | 95 | 3 | 24 (-76%) | 24 | 0 |
| DRC | 62 | 62 | 0 | 17(-72%) | 17 | 0 |

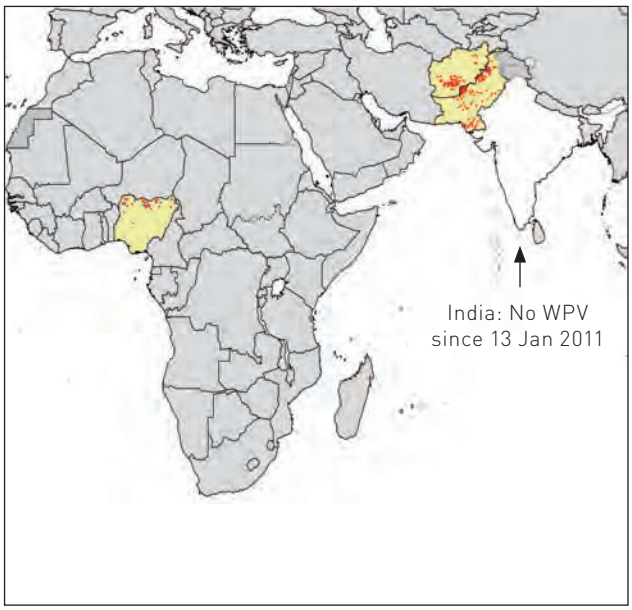
## Milestone 3: By end 2011, cessation of WPV in 2 / 4 endemic countries

Status at 24 Jan 2012: 1 country >12 months without report of WPV (India)

January to December 2010



January to December 2011



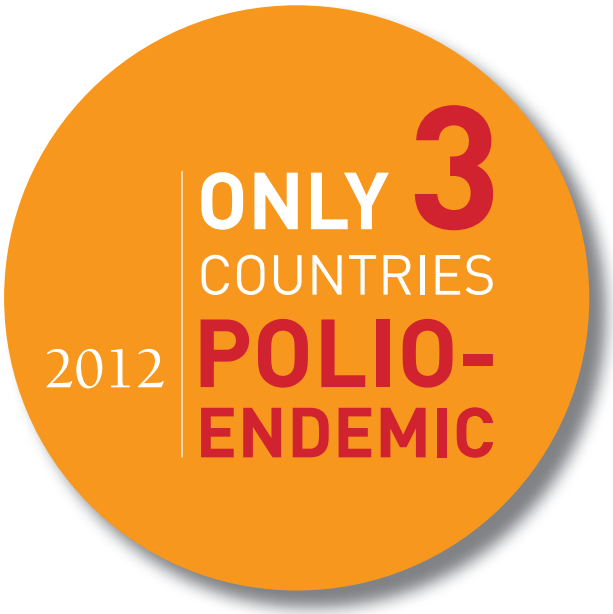

WPV1
WPV3

| | Number of WPV cases Jan Dec 2010 | | | Number of WPV cases Jan – Dec 2011 | | |
|---|---|---|---|---|---|---|
| | Total | Type 1 | Type 3 | Total | Type 1 | Type 3 |
| Afghanistan | 25 | 17 | 8 | 80 (+220%) | 80 | 0 |
| India | 42 | 18 | 24 | 80 (+220%) | 1 | 0 |
| Nigeria | 21 | 8 | 13 | 57 (+171%) | 44 | 13 |
| Pakistan | 144 | 120 | 24 | 197 (+37%) | 195 | 2 |

*Data at WHO/HQ as of 24 Jan 2012*
*(*India officially removed from the list of endemic countries at end February 2012 after a full year of negative laboratory results from both AFP and environmental surveillance)*

# Acronyms and abbreviations

| | |
|---|---|
| **AFP** | Acute flaccid paralysis |
| **AGFUND** | Arab Gulf Fund for Development |
| **BMGF** | Bill & Melinda Gates Foundation |
| **bOPV** | Bivalent oral polio vaccine |
| **CDC** | US Centers for Disease Control and Prevention |
| **DRC** | Democratic Republic of the Congo |
| **EPI** | Expanded Programme on Immunization |
| **FATA** | Federally Administered Tribal Area |
| **FRR** | Financial Resource Requirements |
| **GIS** | Geographic information systems |
| **GPEI** | Global Polio Eradication Initiative |
| **GPLN** | Global Polio Laboratory Network |
| **GPS** | Geographic positioning systems |
| **IMB** | Independent Monitoring Board |
| **IPV** | Inactivated polio vaccine |
| **JICA** | Japan International Cooperation Agency |
| **KAP** | Knowledge, Attitudes and Practices |
| **KP** | Khyber Pakhtunkhwa |
| **LGA** | Local Government Area |
| **LQAS** | Lot Quality Assurance Sampling |
| **NID** | National Immunization Day |
| **OPV** | Oral polio vaccine |
| **SAGE** | Strategic Advisory Group of Experts on immunization |
| **SHOC** | Strategic Health Operations Centre (WHO) |
| **SIA** | Supplementary immunization activity |
| **SIAD** | Short Interval Additional Dose |
| **SNID** | Sub-national Immunization Day |
| **TAG** | Technical Advisory Group |
| **tOPV** | Trivalent oral polio vaccine |
| **UNF** | United Nations Foundation |
| **UNICEF** | United Nations Children's Fund |
| **USAID** | United States Agency for International Development |
| **VDPV** | Vaccine-derived poliovirus |
| **WHA** | World Health Assembly |
| **WHO** | World Health Organization |
| **WPV** | Wild poliovirus |
| **WPV1** | Wild poliovirus type 1 |
| **WPV3** | Wild poliovirus type 3 |

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