

# 3 STRATEGIC OBJECTIVES

## 3.1 INTERRUPTION OF POLIOVIRUS TRANSMISSION

Progress in polio eradication is measured against milestones set out in the *Global Polio Eradication Initiative Strategic Plan for 2004-2008*. The strategic objectives outlined in that plan form the foundation for eradication:

1. interruption of wild poliovirus transmission
2. global certification of eradication
3. development of products for potential OPV cessation
4. mainstreaming of the Global Polio Eradication Initiative.

The milestones set for each strategy are periodically reviewed and amended as necessary as per the recommendations of the Advisory Committee on Poliomyelitis Eradication (ACPE), which provides independent technical counsel to the Global Polio Eradication Initiative.

### ■ MILESTONES 2006

#### MILESTONE 1: NO COUNTRIES WILL BE POLIO-ENDEMIC AT THE END OF 2006.

**STATUS:** **NOT ACHIEVED** — Four areas of four countries remain polio-endemic. Transmission of endemic poliovirus is now concentrated in northern Nigeria, two states of India (Bihar and Uttar Pradesh), and border areas of Pakistan and Afghanistan.

Egypt and Niger are no longer polio-endemic. The ACPE in October 2006 reaffirmed that the global eradication of wild poliovirus is both technically and operationally feasible and concluded that the four remaining endemic countries now have the best tools ever to rapidly achieve polio eradication.

#### MILESTONE 2: ALL PLANNED SUPPLEMENTARY IMMUNIZATION ACTIVITIES (SIAs) WILL BE IMPLEMENTED IN HIGHEST-RISK POLIO-FREE AREAS.

**STATUS:** **ACHIEVED** — SIAs were implemented as planned in Bangladesh, Benin, Cameroon, Chad, Nepal and Niger.

Highest-risk polio-free areas are those bordering endemic reservoir areas (re-infected areas are considered under outbreak response below).

#### MILESTONE 3: 50% OF COUNTRIES WILL ACHIEVE GAVI ALLIANCE TARGETS FOR DTP3/OPV3.

**STATUS:** **ACHIEVED (2005 DATA)** — 43/72 (60%) of GAVI Alliance-eligible countries had national DTP3/OPV3 coverage greater than 80%; 22/72 (30%) of countries had national DTP3/OPV3 coverage greater than 90%.

The GAVI Alliance target calls for all countries to have greater than 80% routine immunization coverage in every district and 90% routine immunization coverage nationally by the year 2010. In 2005, 7/72 (10%) of GAVI Alliance-eligible countries had reached this target. The GAVI Alliance is focused on increasing children's access to vaccines in poor countries.

#### MILESTONE 4: ALL EMERGENCY MOP-UPS WILL BEGIN WITHIN FOUR WEEKS OF CASE CONFIRMATION.

**STATUS:** **PARTIALLY ACHIEVED** — Emergency mop-ups were conducted within four weeks of case confirmation in 5/6 (83%) importation events in 2006.

Cameroon, the Democratic Republic of the Congo (DR Congo), Kenya and Namibia conducted activities within four weeks of case confirmation. Bangladesh conducted activities within 39 days of case confirmation.

*Note: In Chad, a late-2006 case was reported in January 2007, and an emergency mop-up was conducted within four weeks of confirmation. Additionally, emergency outbreak response activities continued in a number of countries with ongoing transmission of imported polioviruses from 2005, e.g. Angola, Ethiopia, Nepal, Niger and Somalia.*

#### MILESTONE 5: ALL NON-CERTIFIED COUNTRIES WILL HAVE CERTIFICATION-STANDARD SURVEILLANCE.

**STATUS:** **PARTIALLY ACHIEVED** — 61/76 (80%) of non-certified countries have met certification-standard surveillance targets<sup>1</sup>.

The following countries did not meet the required standards: Algeria, Bhutan, Cyprus, Djibouti, Gabon, Guinea-Bissau, Kuwait, Lebanon, Malawi, Maldives, Morocco, Saint Helena, Sri Lanka, Timor Leste and United Arab Emirates.

<sup>1</sup>Excludes island nations with populations less than 300,000, e.g. Comoros, Mauritius, Reunion, Sao Tome and Principe and Seychelles.

## COUNTRIES WITH INDIGENOUS POLIO: TAILORED STRATEGIES MONITORED BY TOP POLITICAL LEADERSHIP

The world's success in eradicating polio now depends on four countries – Nigeria, India, Pakistan and Afghanistan – according to the Advisory Committee on Polio Eradication, meeting in October 2006. These countries have at their disposal the best set of technical tools in the history of eradication.

Transmission of indigenous poliovirus is geographically restricted to limited areas of these four countries, in specific populations. In December 2006, all four countries convened national technical advisory body meetings to outline local tactics for reaching all children under five years of age with vaccine enough times to protect them from polio.

### ■ EGYPT AND NIGER: INDIGENOUS POLIO TRANSMISSION STOPPED

In January 2006, Egypt and Niger were removed from the list of polio-endemic countries, reducing the number of remaining countries with indigenous polio transmission to an all-time low of four. Neither country has experienced indigenous circulation of wild poliovirus since January 2005.

### ■ NIGERIA: "IMMUNIZATION PLUS DAYS" LEAD TO PROGRESS IN LATTER HALF OF 2006

In December 2005, President Olusegun Obasanjo of Nigeria set the tone for polio eradication activities in the following year, mandating the Ministry of Health and the National Programme on Immunization (NPI) to eradicate polio and strengthen routine immunization.

The number of cases of polio in Nigeria in 2006 rose to 1,123 from 830 in 2005. As the first quarter of the year signalled a three-fold rise in numbers over the same period in 2005, the Expert Review Committee for Polio Eradication (ERC) – Nigeria's technical advisory body – endorsed a strategy of 'Immunization Plus Days' (IPDs) in March 2006. Launched by the new management of NPI in May, IPDs offer other antigens and health interventions to communities in addition to OPV. Since the introduction of IPDs, the proportion of children in northern states who had never been immunized was reduced to an average of 20% (from more than 50% at end-2005). The number of new cases dropped after June: fewer than a third of Nigeria's cases in 2006 occurred in the second half of the year.

The IPDs have also proven popular with local communities and political leadership. 'Community Dialogues', organized in key areas before IPDs, give community members the opportunity to ask questions about polio eradication efforts and have given rise to a nascent sense of ownership by civil society.

Egypt and Niger stop indigenous polio: number of remaining endemic countries reduced to lowest ever.

## NIGERIA

### KEY POINTS 2006

- Presidential mandate for polio eradication
- New strategy of Immunization Plus Days recommended by Nigeria's Expert Review Committee on Polio Eradication
- Increase in number of children reached in northern states
- Decrease in new cases in second half of year

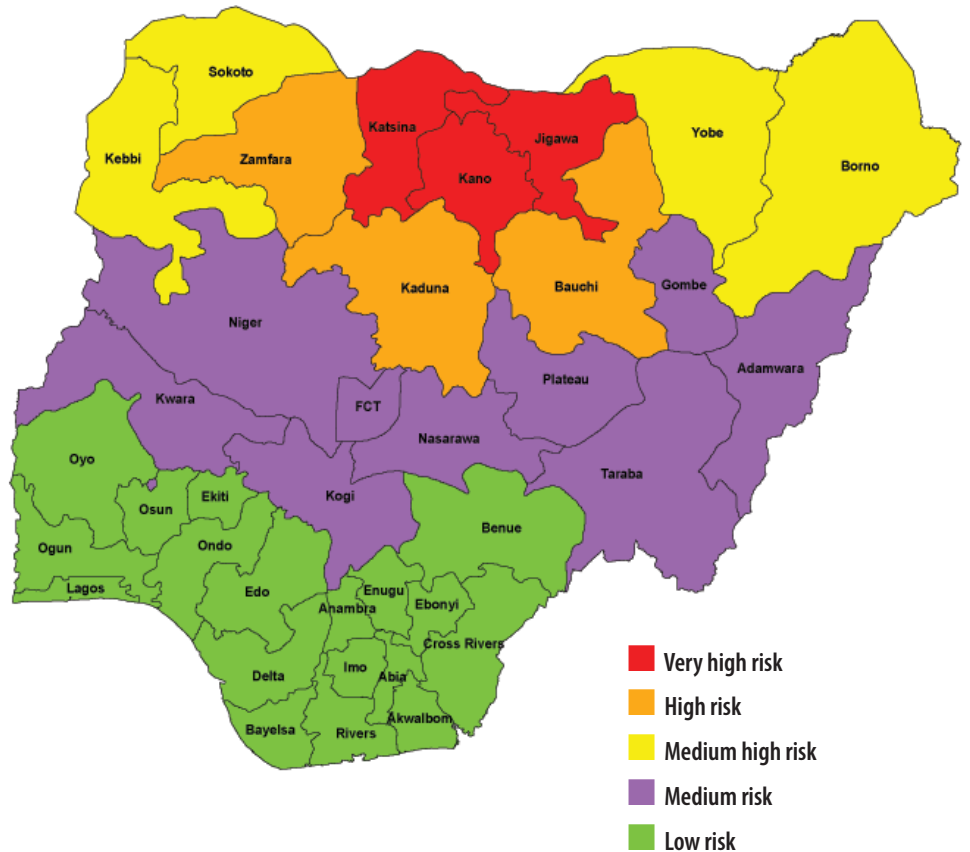
### FOCUS FOR 2007

- Build on progress achieved in 2006 through IPDs
- Use risk-classification to target Kano, Katsina and Jigawa states as 'very high risk' for ongoing polio transmission
- Further engage all communities
- Ensure all activities are state-driven

Key to success: reduce the number of 'missed children' to <10% in Kano, Katsina and Jigawa

## Nigeria: Risk classification by state

In northern Nigeria, the proportion of never-immunized children in northern states fell from over 50% to an average of 20%.



### AFRICAN UNION COMMISSION HELPING TO "KICK POLIO OUT OF AFRICA"

At the end of 2006, indigenous polio in Africa was restricted to Nigeria, as most of the countries re-infected in 2003-05 had successfully stopped polio transmission or were close to doing so. Political leadership from the Chairperson of the African Union Commission, Professor A.O. Konaré and the strong support of the Union's Social Affairs Commissioner was important to this development.

Chairperson Konaré reviewed the progress of polio eradication in Africa on a quarterly basis with the World Health Organization, and actively engaged with the Heads of State of polio-affected countries. He also encouraged donor nations, especially the G8 and the EU member states to continue their financial support to ensure the success of this historic effort on the continent.

The new approach does not come without drawbacks, not the least of which is financing. Operational costs are 60% more than polio-only supplementary immunization activities. This level of cost is difficult to sustain and demands new sources of funding. The IPDs are also operationally complex to manage, straining the health infrastructure in the north of the country. The availability of the additional vaccines, vitamins and medications that are offered is erratic due to weaknesses in operational planning or deficiencies in stock.

The ERC re-convened in December 2006 to analyse local strategies to overcome local challenges. Each geographical area was classified by the level of risk of poliovirus transmission, to enable states to better prioritize their activities. Kano, Katsina and Jigawa states – which accounted for 60% of the country's cases in 2006 – were classified as 'very high risk' due to ongoing coverage gaps of greater than 25% during IPDs. The key to successfully eradicating polio in Nigeria will be to urgently reduce the proportion of missed children in very high risk states to less than 10%.

In November 2006, Cheikh Hassan Cissé, a spiritual leader with followers across western Africa, embarked on a two-week tour of eight high-risk northern Nigerian states. He impressed upon communities there that polio immunization is a religious obligation of parents, in keeping with the teachings of Islam to protect children from disease. This tour took place at the request of the Secretary-General of the Organization of the Islamic Conference.

During this extraordinary mobilization campaign, the Cheikh, who is the Grand Imam of Medina Kaolack in Senegal, travelled most nights and met by day with Governors, Emirs and religious leaders and scholars. He addressed vast gatherings of his followers in all the major cities of the area and visited Quranic schools and mosques to speak with parents and religious leaders, quoting from the Holy Quran and the

Hadith to underscore “the need for protecting children, as they are the future,” as he put it.

In press conferences, the Cheikh encouraged members of the media to communicate his message that Islamic teachings advocate immunization. Coverage of his sermons and speeches was broadcast on and printed in local and international media.

At the end of the tour, President Olusegun Obasanjo invited Cheikh Cissé to the capital to express his gratitude and appreciation for the Cheikh’s efforts.

*Cheikh Hassan Cissé, respected spiritual leader, immunizes a child against polio during his visit to Nigeria.*



■ INDIA :

OUTBREAK IN NORTHERN INDIA, BUT IMMUNITY GAP LIMITED TO UNDER-TWO YEAR-OLDS

In India, an outbreak originating in the western end of Uttar Pradesh state resulted in the re-infection of polio-free areas of the country and a ten-fold increase in new polio cases in 2006 over the previous year (676 cases, compared to 66 cases in 2005).

The outbreak occurred primarily due to a drop in vaccination campaign quality and children being missed in late 2005 and early 2006. The Government of India reacted with swift improvements in vaccination campaign coverage in the highest-risk areas. This response, coupled with wide-spread use of monovalent oral polio vaccine type 1 (mOPV1), resulted in 60% fewer cases than India’s most recent outbreak in 2002.

Epidemiological research published in November showed that trivalent OPV is less effective at protecting children from polio in northern India than in the rest of the country or other parts of the world, due to the unique demographic, health and sanitation conditions prevalent in Uttar Pradesh and Bihar. The research vindicated the large-scale use of mOPV in these areas and indicated that immunity levels of children there would have to be boosted with more intense vaccination activities before they could reach the levels reached in other parts of India.

INDIA

KEY POINTS 2006

- Uttar Pradesh and Bihar only remaining endemic states
- Outbreak originating in western Uttar Pradesh results in ten-fold increase in cases
- Immunity gap reduced to children under two years old

FOCUS FOR 2007

- Increase frequency of supplementary immunization activities to rapidly close immunity gap
- Focus on youngest children in high-risk districts of western Uttar Pradesh and Bihar
- Maximize each contact through expanded use of monovalent OPV type 1

*Key to success: raising and maintaining immunity levels above the levels in polio-free parts of India*

## In India, field efficacy of monovalent OPV over trivalent OPV confirmed.

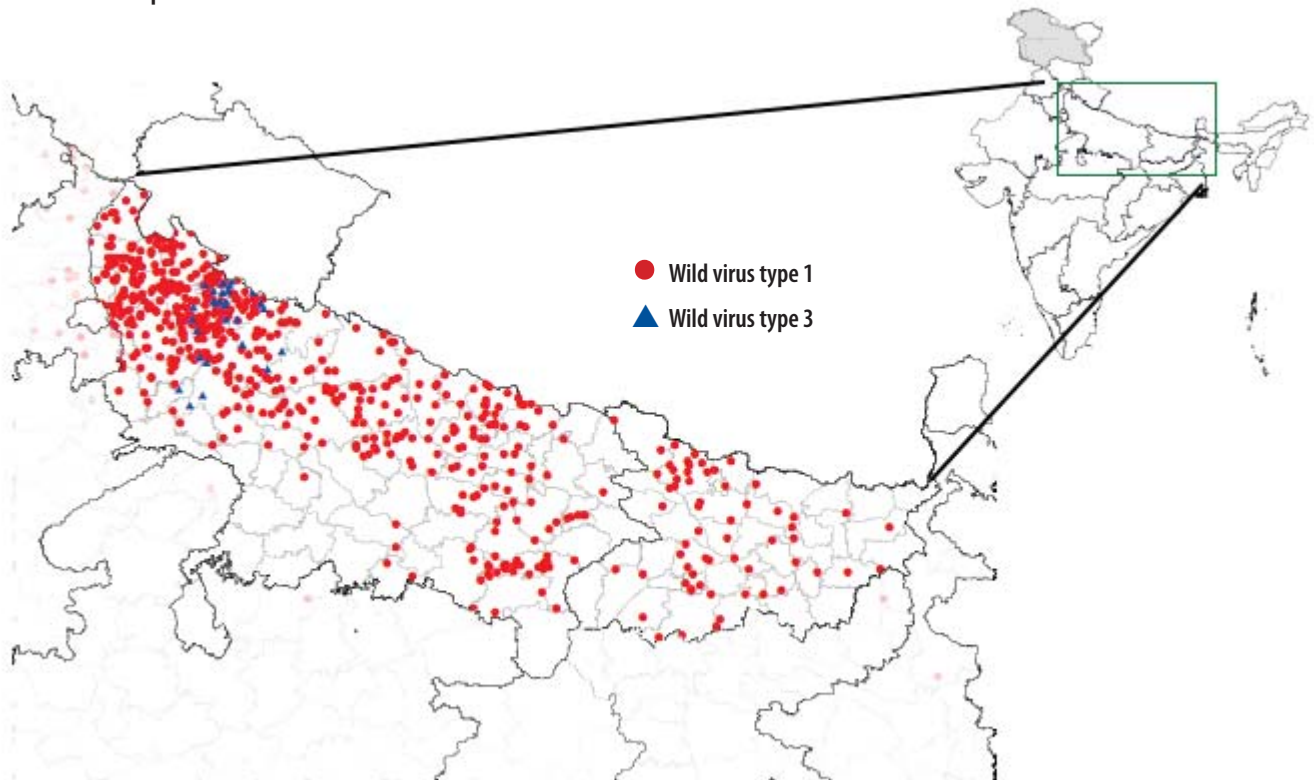
In addition, analysis of the epidemiological and programmatic data from the 2006 outbreak revealed that 73% of children affected were less than two years old, showing that mOPV had effectively immunized older children. The programme could now concentrate on reaching the youngest children more frequently, so that they would have more doses of mOPV before the age of two than previous birth cohorts.

In December 2006, armed with the vaccine efficacy research and this immunological profile, the India Expert Advisory Group on Polio Eradication (IEAG), which provides independent technical counsel to the programme, recommended a tactical refinement to close the immunity gap in the youngest age group.

Launched in early 2007, the approach calls for sharply increasing the number of large-scale supplementary immunization activities (SIAs) in the highest-risk districts of western Uttar Pradesh and Bihar and focusing on children aged less than three years of age. Large-scale SIAs with mOPV1 will be held on average every four weeks, supplemented by the administration of a dose of mOPV1 at birth.

Full implementation of this strategy is expected to close the immunity gap in the youngest children in Uttar Pradesh and Bihar states and to raise immunity levels in these areas to levels above those in the rest of India.

Wild poliovirus in 2006 in Uttar Pradesh and Bihar states of India



More than 200 Rotarians from Canada, Europe and the United States joined thousands of their counterparts in India and in African countries to immunize children against polio during numerous supplementary immunization activities in 2006.

A humanitarian service organization that has made polio eradication its top philanthropic goal, Rotary International is a spearheading partner in the Global Polio Eradication Initiative and is committed to the cause until global certification.

To that end, Rotary members around the world, including those based in the endemic and high-risk countries, donate their time and personal resources to raise funds and volunteer in the field. During mass immunization campaigns, Rotarians regularly administer the drops of oral polio vaccine, staff immunization posts, deliver the vaccine to remote villages and educate families on the importance of protecting every child against polio.

“Until polio is eradicated worldwide, every child remains at risk,” said Anil Garg, US team leader of a group that travelled to his homeland of India. “Preventing paralysis from polio in just one child has major social and economic consequences for the victim, family and entire country.”

Through its PolioPlus program, established in 1985, Rotary was the first to have the vision of a polio-free world, and continues to play a crucial role in global efforts to eradicate polio. More than one million Rotary members have volunteered to protect more than two billion children in 122 countries from polio. Rotary provides urgently needed funds: to date, the organization has contributed more than US\$ 616 million to eradicate polio. In addition, Rotary International has played a major role in decisions by donor governments to contribute more than US\$ 3 billion to the effort.



PHOTO © ANIL GARG

Rotarian Anil Garg of Simi Valley in the USA. Born and raised in Delhi, India, Garg has led numerous polio immunization trips to India and has also provided Tsunami relief.

■ PAKISTAN :

CLOSE BILATERAL COORDINATION NEEDED TO STOP POLIO AS VIRUS LARGELY LIMITED TO BORDER AREAS

Of the remaining areas which have yet to stop polio, the single epidemiological block represented by Pakistan and Afghanistan stands to achieve eradication most rapidly. In 2006, even though the number of polio cases rose to 40 (from 28 in 2005), transmission in Pakistan was limited to a handful of clearly-identified areas, largely along the Afghan border. These include the corridors between southern and eastern Afghanistan and Pakistan’s North West Frontier Province (NWFP) and Balochistan.

The interruption of transmission in 80% of the districts in Pakistan testifies to the strength of the overall strategies of mass vaccination campaigns to reach every child repeatedly to boost immunity. The vast majority of polio cases in 2006 came from previously identified zones of transmission in NWFP, Balochistan and Sindh. In a demonstration of the impact of mOPV1, no type 1 polio cases have been reported from reservoir areas in northern Sindh since 2005 and southern Punjab since July 2006.

PAKISTAN

KEY POINTS 2006

- Most of the country polio-free
- Continued polio transmission in mobile or socially conservative communities and in insecure areas
- Corridor of cross-border transmission with Afghanistan

FOCUS FOR 2007

- Increase cross-border coordination with Afghanistan to close immunity gap
- Strengthen federal and provincial political ownership of polio eradication
- Improve access to tribal agencies

Key to success: fully coordinating activities with Afghanistan to increase access to hard-to-reach populations

In Pakistan and Afghanistan, polio was largely limited to a shared corridor of transmission along the common border.

In some of the high-risk areas, most notably the Federally Administered Tribal Areas in NWFP and some areas of Balochistan, access to communities is compromised by security risks. While efforts to overcome this constraint are ongoing, further mechanisms are needed to improve access in these areas. In 2006, work focused on the identification of, and access to, mobile populations and engagement with the semi-autonomous tribal communities and their leaders.

In a joint technical meeting between Pakistan and Afghanistan, held in Oman in December 2006, advisers recommended closer cooperation between the two countries. The Ministers of Health of both countries met that same month at the Torkham border post and agreed on specific steps, including an increase in the numbers of immunization posts at formal crossings points – to vaccinate children who are travelling – and the establishment of regular inter-ministerial meetings to coordinate planning. After the meeting, each minister crossed the border and administered OPV to children in the neighbouring country.

Successfully eradicating polio in Pakistan depends on implementing a multi-pronged strategy to reach children in mobile groups, to involve conservative and semi-autonomous tribal communities and to synchronize vaccination campaigns carefully with Afghanistan in order to clear the border of poliovirus. A significant affirmation of national and provincial commitment will be vital to the effective implementation of this strategy.

## AFGHANISTAN

### KEY POINTS 2006

- Most of the country polio-free
- Polio transmission limited to mobile or socially conservative communities and insecure areas
- Corridor of cross-border transmission with Pakistan

### FOCUS FOR 2007

- Increase cross-border coordination with Pakistan to close immunity gap
- Sustain political ownership of polio eradication at national and provincial levels
- Exploit any improvement in security conditions by coordinating with relevant actors

*Key to success: fully coordinating activities with Pakistan to increase access to hard-to-reach populations*

### ■ AFGHANISTAN:

#### OUTBREAK IN SOUTHERN REGION CONTAINED DESPITE SECURITY CHALLENGES

Most of Afghanistan is today polio-free, but the country suffered an outbreak in the southern region due to continued cross-infection with Pakistan, with which it forms a single epidemiological block. Cases in Afghanistan increased from 9 in 2005 to 31 in 2006.

The outbreak in the southern region was exacerbated by deteriorating security conditions – making it perilous for health workers to move around and vaccinate children – but contained by intense vaccination activities which exploited every opportunity within the constraints of the conflict. By year-end, the outbreak had been contained within the region and Afghanistan was closer to polio eradication than any of the other three endemic countries.

In tandem with the fluctuating security situation, polio teams worked with various sectors of society at the district, state and national level to negotiate increased access to children. More local community members were recruited as vaccinators and supervisors. Teams took advantage of any opportunity when areas could be accessed to conduct rapid and focused mop-up activities, in addition to the planned large scale vaccination rounds. In August, the President of Afghanistan, Hamid Karzai, established a National Polio Action Group to align and strengthen national and provincial oversight of these activities.

The most significant chain of wild poliovirus in this region straddles the Afghan-Pakistan border and caused an outbreak in 2006 in Afghanistan's southern region. Deteriorating security in the region presented immediate hazards for health workers attempting to vaccinate children in the area, exacerbating the outbreak. To align the response in the provinces concerned, President Hamid Karzai established a National Polio Action Group in August, tasking governors in the southern region to oversee the development and implementation of plans to increase access to all populations.

Polio eradication in the southern region focused on three immediate objectives:

- To ensure the safety of staff working in the field.
- To maintain the highest levels of operational continuity possible, given the deteriorating situation.

- To ensure that polio transmission did not re-infect other areas of Afghanistan.

Polio teams used any window of opportunity to access districts in security-compromised areas, while continuing large-scale campaigns in other regions to maintain high-population immunity levels.

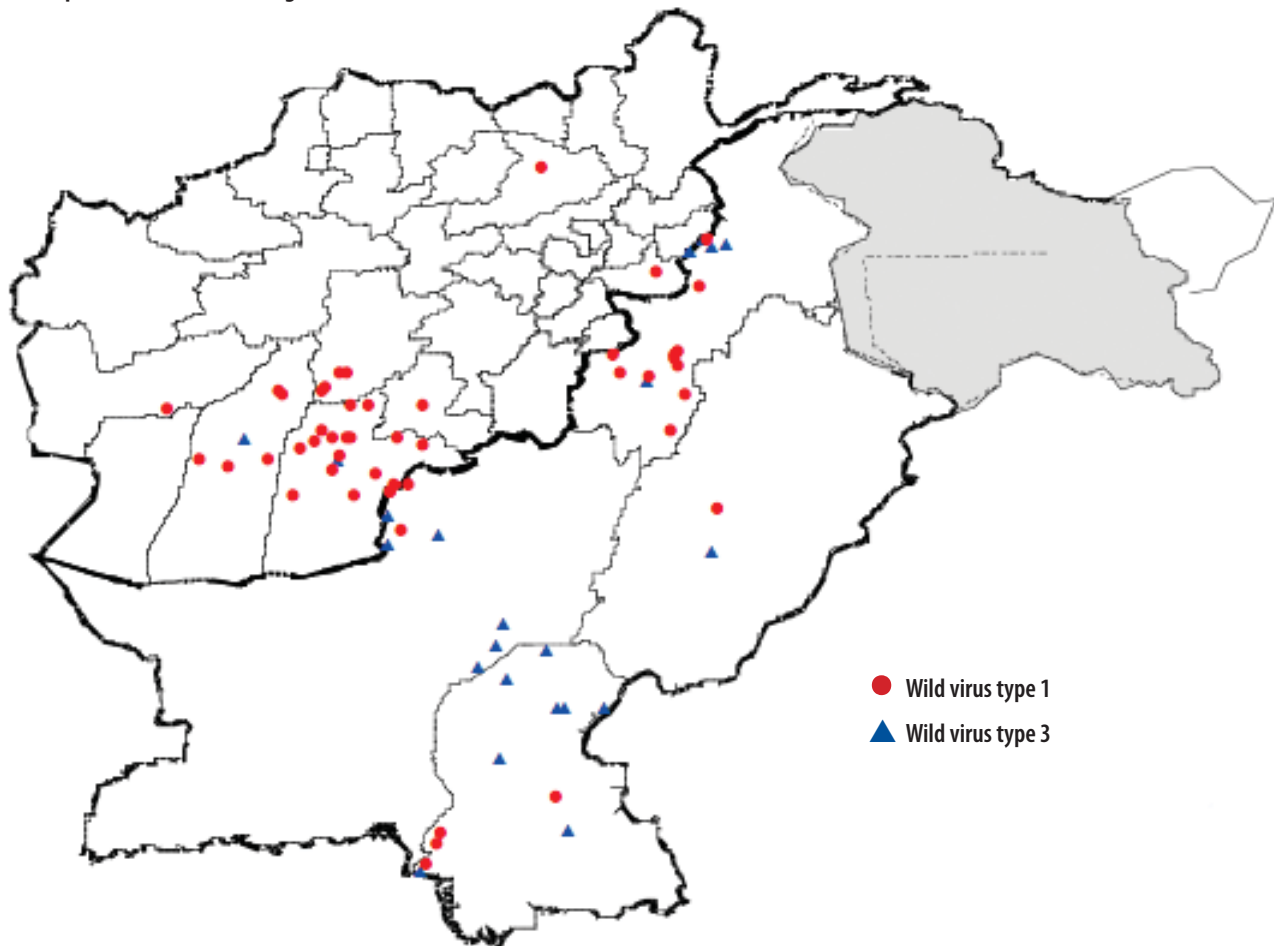
With these efforts, polio eradication remained one of the few public health initiatives to maintain operations in the southern region in 2006, and the outbreak was contained. Other areas of Afghanistan were protected from re-infection, and by the end of the year only three cases had been reported outside the southern region, one of which was on a frequently-travelled area on the border with Pakistan's North West Frontier Province.



*President Hamid Karzai vaccinates an Afghan child.*

PHOTO © EPI AFGHANISTAN

Wild poliovirus in 2006 in Afghanistan and Pakistan



- Wild virus type 1
- ▲ Wild virus type 3

Indigenous transmission of endemic poliovirus continues in Afghanistan among mobile groups – whether nomadic, displaced or seasonally migratory – and in communities who live in insecure or socially conservative areas. The poliovirus that straddles the Afghanistan-Pakistan border circulates among and with these communities. The movements of the mobile communities were mapped more systematically in 2006 and long-term immunization posts set up at key migrant gathering areas and known border crossings between Afghanistan and Pakistan.

To rapidly close the immunity gap among these “hard-to-reach” populations, in December 2006 independent technical advisers for Pakistan and Afghanistan, meeting in Oman, recommended that both surveillance and SIAs be increasingly coordinated between the two countries. In one of their first actions after this, Ministers of Health of both countries jointly addressed a historical health *jirga* of tribal leaders to request the latter’s support and the participation of their communities in reaching each child with vaccine.

Successfully eradicating polio in Afghanistan now depends on exploiting any positive security developments, on tighter coordination of activities with Pakistan and on continued top-level oversight at the federal and provincial levels to make sure no child is missed.

## RE-INFECTED COUNTRIES: NEW RESPONSE GUIDELINES SHORTEN OUTBREAKS

2006 was a testing ground for the effectiveness of new outbreak response guidelines, adopted by the World Health Assembly in May (Resolution WHA59.1). Of the 26 countries re-infected with importations of poliovirus since 2003, only 10 continued to report polio cases in the second half of 2006. An outbreak in June in Namibia, following an importation of Indian virus via Angola, affected mostly adults and caused a number of deaths. Using the outbreak response guidelines and vaccinating the entire population several times, officials limited the outbreak to a record 50 days from first case to last. Indonesia and Yemen, which suffered the largest, single country epidemics in recent years, succeeded in stopping their respective outbreaks in the first two months of 2006. As a result, re-infected countries only accounted for 6% of all polio cases in 2006, down from more than 50% of cases in 2005.

The focus for 2007 will be on rapidly stopping the high-risk outbreaks where polio transmission continues: in central Africa (Angola and the Democratic Republic of the Congo), the Horn of Africa (Ethiopia, Kenya and Somalia) and Bangladesh. Areas contiguous to endemic countries are also at heightened risk until the interruption of transmission in the latter.



PHOTO © WHO ETHIOPIA/DR TAJUDIN

*Polio immunization of a nomadic child in the Somali region of Ethiopia: 2006 witnessed rapid progress in stopping outbreaks in re-infected countries, but active polio transmission continues in Angola, Bangladesh, the Democratic Republic of the Congo, Ethiopia, Kenya and Somalia.*

Re-infected countries  
accounted for 6% of all polio  
cases in 2006, down from  
more than 50% in 2005.

The World Health Assembly, where WHO Member States set global health policies, adopted in May 2006 a resolution with clear guidelines for polio-free countries to respond to importations of virus.

Given the ease with which poliovirus travels, the risk of importation is very real as long as the virus circulates anywhere in the world, and the guidelines are designed to minimize both this risk and the consequences of an importation. The main characteristics of the response are:

- It is rapid and creates an emergency plan – a rapid investigation within 72 hours of confirmation of a case to establish an emergency plan of action;
- It is swift and sustained – a minimum of three large-scale rounds of immunization with type-specific vaccine, the first of which starts within four weeks, with at least two campaigns after the last case;
- It is large-scale – targeting at least two million children aged less than five years in the affected and adjacent geographical areas;
- It is high quality – house-to-house campaigns where applicable and independent monitoring to determine whether immunization coverage is at least 95%; with higher-than-standard surveillance for acute flaccid paralysis for the duration of the outbreak and at least 12 months thereafter and high routine immunization coverage.

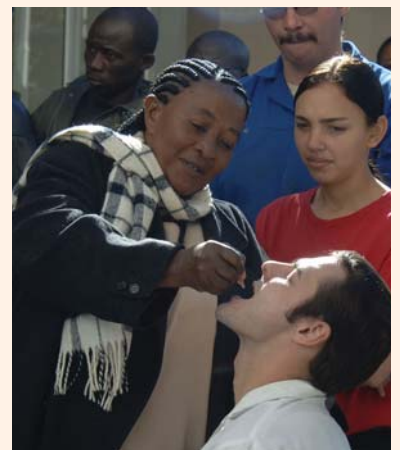


PHOTO © T. FIGUERA/UNICEF

*Swift and massive vaccination campaigns such as this one, targeting the entire population, shut down the Namibia outbreak within 50 days.*