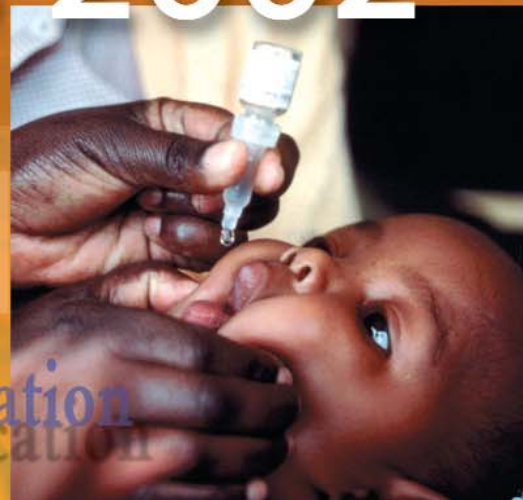
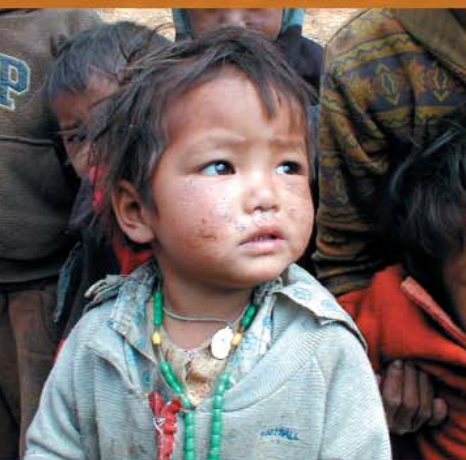


Global

Polio

Eradication
Initiative

Progress 2002



2002



World Health Organization

Global



Polio

E r a d i c a t i o n
I n i t i a t i v e

Progress
2002



Department
of Vaccines and Biologicals



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2002

Executive summary

polio eradication
polio eradication



In 2002, the number of polio-endemic countries dropped to seven, the lowest level in history: (from highest to lowest) India, Nigeria, Egypt, Pakistan, Afghanistan, Niger and Somalia. Within these countries, the extent of transmission was geographically limited, with 80% of cases confined to just six states/provinces of India, Nigeria and Pakistan.

However, the global case count quadrupled over 2001, due to an epidemic in northern India, and a rise in reported cases in northern Nigeria. The result was 1919* virologically confirmed cases in 2002, compared with 483 for 2001.

Apart from India, Nigeria and Egypt, all countries endemic in 2001 either stopped transmission or saw a decline in indigenous polio cases. No polio was detected in Angola, Ethiopia or the Sudan in 2002. New cases decreased in Afghanistan, Niger and Somalia. While some areas of Pakistan still had intense transmission in 2002, the number of new cases fell by 22%.

The Technical Consultative Group on the Global Eradication of Poliomyelitis (TCG) held an interim meeting in November 2002 to review progress and identify strategies for stopping wild poliovirus transmission globally as quickly as possible. The TCG noted that provided the quality of activities remains high and that access to all children improves in Afghanistan, Niger and Somalia, those countries could stop transmission by mid-2003, with Pakistan following shortly thereafter. However, the TCG warned that stopping transmission in Egypt, India and Nigeria will require multiple rounds of high-quality supplementary immunization activities (SIAs), backed by strong political engagement at every level.

India is the largest country-level challenge to the global Initiative. In India, the number of cases increased six-fold in 2002 over 2001, as 1600 reported cases were confirmed, accounting for 83% of all cases worldwide. Particularly affected is the northern state of Uttar Pradesh, representing 65% of all global cases. The massive epidemic that began in Uttar Pradesh in 2002 was largely the result of a reduction in the quantity of large-scale SIAs. For the first time in the Initiative's history, extensive transmission was re-established in polio-free areas, as the epidemic in Uttar Pradesh spread into the Indian states of Gujarat, Rajasthan and West Bengal.

Despite tremendous international support to the Global Polio Eradication Initiative (GPEI) in 2002, the programme continued to have a US\$ 275 million funding gap for activities planned through to the end of 2005 – the greatest overall threat to achieving a polio-free world. The risks posed by this funding gap were highlighted at the end of 2002, as an acute funding shortfall for 2003 forced the scaling back of a number of planned eradication activities.

The world is very close to being polio-free, with wild poliovirus transmission being more geographically contained than ever. It is time to renew the global commitment to this largest public health initiative in history, and eradicate this paralysing disease once and for all. ■

* All data in the 2002 Progress Report from WHO HQ are correct as of 30 April 2003. Final data were still being compiled at time of print; acute flaccid paralysis reporting: classification of 36 412 of 36 854 samples completed.

2002

Polio eradication – major developments in 2002



polio eradication
polio eradication

Highlights 2002

- ◆ Only seven countries in the world remain polio endemic – it is the lowest number of polio endemic countries in history. In 1988, the year the Initiative began, more than 125 countries were endemic.
- ◆ Polio is more geographically contained than ever. Ninety-nine per cent of the world's 1919 reported polio cases in 2002 were located in India, Nigeria and Pakistan.
- ◆ Eighty per cent of all global cases in 2002 were found in only six of the 76 states/provinces of India, Nigeria and Pakistan.
- ◆ In June 2002, the **WHO European Region was certified polio-free**, joining the WHO Regions of the Americas and the Western Pacific. The result: more than three billion people, half the world's population, in 134 countries and territories now live in areas certified polio-free.
- ◆ As part of the global polio eradication effort, in 2002 500 million children were vaccinated during 266 activities in 93 countries in every WHO region, using 2.2 billion doses of oral polio vaccine (OPV).
- ◆ Two recent poliovirus reservoirs, Ethiopia and the Sudan, appear to be polio-free, with no new polio detected for well over a year. These countries join two other former poliovirus reservoirs, **Bangladesh and the Democratic Republic of the Congo**, as polio-free. Success in these countries demonstrates the polio eradication strategies work even in the most challenging settings.
- ◆ **Pakistan, one of three remaining high transmission areas for poliovirus, had a 22% decrease in the number of polio cases following eight large-scale SIAs.** Pakistan has had strong political commitment and independent monitoring right down to the district level.
- ◆ **Access in conflict-affected countries improved further.** The April 2002 ceasefire in Angola allowed access into areas of eastern provinces where none had been possible for years. In Somalia, international teams entered Mogadishu in October to monitor polio eradication activities for the first time since the spring of 2001. Access for surveillance improved in Afghanistan – filling the surveillance gaps which occurred in the aftermath of 11 September 2001.
- ◆ **Type II wild poliovirus has not been found since October 1999**, suggesting that indigenous transmission of one of the three types of wild poliovirus may have been interrupted.
- ◆ **The G8 put polio eradication firmly on its agenda during its June 2002 Summit, and pledged to provide the funding needed for polio eradication activities in Africa.** Canada and the United Kingdom followed up immediately on this commitment, with an additional US\$ 32 million from Canada and US\$ 25 million from the United Kingdom.
- ◆ **Rotary International launched a fundraising campaign amongst its membership** aiming to raise US\$ 80 million by June 2003. The response from Rotary club members has been tremendous, with clubs all over the world working to raise money. **Funds received in this campaign will push Rotary's total donation to polio eradication to over US\$ 500 million.**

Despite complex emergencies • Clear gains for polio eradication

There is perhaps no greater testament to the soundness of the polio eradication strategies than the success in eliminating polio in countries suffering complex emergencies. In some of the most challenging countries of the world, from Afghanistan to the Sudan, polio eradicators have carried on with the job, and despite the dangers have succeeded in reaching children everywhere. Angola, the Democratic Republic of the Congo, Ethiopia, Sri Lanka and the Sudan all appear to be polio-free. Angola, which suffered 25 years of civil conflict and the largest polio outbreak in Africa's recent history, recorded no cases in 2002. The remaining conflict-affected

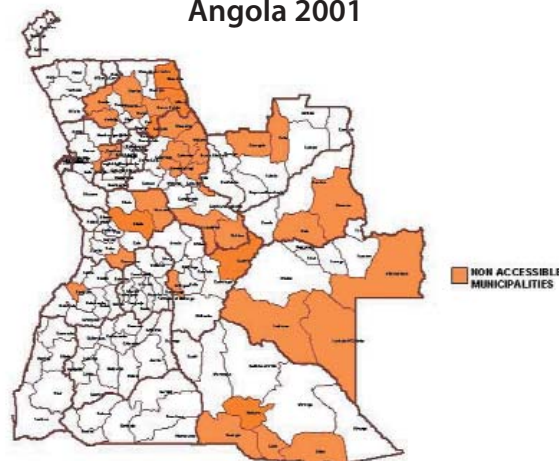
endemic countries, Afghanistan and Somalia, detected only a handful of cases with continued access to difficult regions, particularly in Kandahar (Afghanistan) and Mogadishu (Somalia). "The partners learned early that we could not wait for conflicts to end to put an end to polio," said Carol Bellamy, Executive Director, UNICEF, "so we have used all means, including Days of Tranquility, cross-border negotiations and sheer bravery in many cases, to reach children caught in the midst of conflict. These creative approaches have been hugely successful for polio eradication, and now serve as a model for delivering other types of humanitarian aid in times of crisis."

Photo: ©WHO/Elias Durr

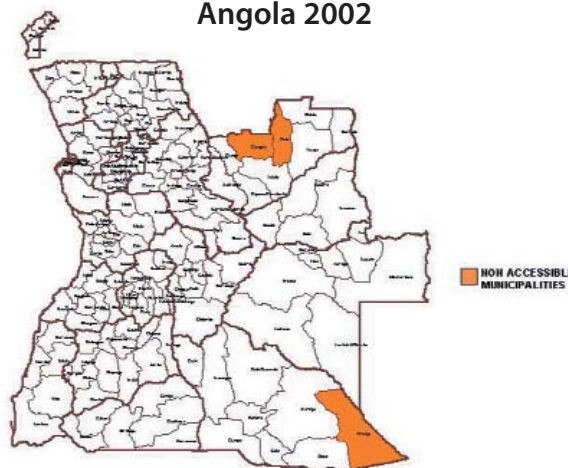


Under security escort, a team of polio staff enter Mogadishu in October 2002.

Accessibility during NIDs, Angola 2001



Accessibility during 1st round NIDs, Angola 2002



Challenges 2002

- ◆ **The major geographic risks to global polio eradication include Egypt, India and Nigeria. The major global risk is funding.**
- ◆ **An epidemic in northern India threatened global polio eradication.** Despite pushing the incidence of polio down to just 268 cases in 2001, a cutback in the number of large scale SIAs, combined with ongoing immunization gaps in some areas, led to a polio epidemic in Uttar Pradesh, resulting in 1600 paralysed children in India in 2002. Furthermore, for the first time in the Initiative's history, extensive

transmission was re-established in previously polio-free areas, as the epidemic in Uttar Pradesh spread into the states of Gujarat, Rajasthan and West Bengal.

- ◆ **Intense transmission documented in Nigeria:** In Nigeria, improved surveillance quality demonstrated intense poliovirus transmission in the north of the country, with a nearly fourfold increase in cases over 2001 in those areas. The increase in cases can be attributed to insufficient quality of SIAs in the northern states, and low routine immunization coverage. Continued transmission in Nigeria threatens the polio-free status of other African countries.



Complex cultures – complex challenges •

Reaching all children in India and Nigeria

Asixfold increase in polio cases in India, together with a fourfold increase in Nigeria, has caused the global case count to rise over the previous year for the first time since 1997. In India, an epidemic originating in Uttar Pradesh resulted in 1600 cases (compared to 268 in 2001). The epidemic spread into Bihar, and into formerly polio-free states, including Gujarat (24 new cases), Rajasthan (40 new cases) and West Bengal (47 new cases). The polio epidemic was a direct result of population immunity gaps in high-risk areas, where monitoring data showed that up to 15% of houses were missed during SIAs, often in minority areas such as Muslim communities. These gaps also resulted from a major reduction in the number of SIAs in India – from a high of ten in 1999/2000, to only three in 2002. In northern Nigeria, particularly in the states of Kaduna and Kano, enhanced surveillance detected 202 cases in 2002, compared to just 56 in 2001, demonstrating more intense

transmission than previously thought. Data from these states showed that less than 50% of non-polio AFP cases had received 3 or more doses of OPV – an insufficient quality of supplementary immunization activities (SIAs) to interrupt transmission. “Effective monitoring, AFP surveillance and laboratory data amply demonstrate the quality gaps,” said Déo Nshimirimana, Regional Adviser at the WHO Office for Africa (AFR). “Now we must use this information to target the communities most heavily affected by polio and rapidly fill these immunity gaps through multiple rounds of high quality SIAs.” Eleven rounds of SIAs are planned for 2003 in high-risk areas of India (two NIDs and four SNIDs) and Nigeria (two NIDs and three SNIDs). Further SIAs are planned for 2004 with the addition of intense mop-up campaigns, to ensure transmission of wild poliovirus is interrupted.



Photo: WHO

- ◆ **Environmental sampling in Egypt demonstrated wide geographic transmission of poliovirus, previously undetected due to gaps in the quality of surveillance.** From mid-2002, new leadership heralded immediate improvements in surveillance and the quality of SIAs, with 10% more children immunized in December 2002 (9.8 million children) than in December 2001 (8.8 million children).
- ◆ **Importations into two polio-free areas and detection of a circulating vaccine-derived poliovirus (cVDPV) reinforced the need for certification-standard surveillance in all countries.** Importations into Burkina Faso and Zambia were detected through strong polio surveillance and quickly contained through massive mop-up activities. An episode of cVDPV was detected in Madagascar, a country with low routine immunization coverage. A nationwide house-to-house immunization campaign with OPV stopped circulation of this virus.
- ◆ **For the first time in five years an acute cash shortage in late 2002** forced a scaling back and reprioritization of activities in 2003. In 2003, increased emphasis will be placed on the seven endemic areas, achieving certification standard surveillance in all countries and replacing large-scale ‘preventative’ campaigns with an emergency response strategy.
- ◆ **At the end of 2002, the global funding gap of US\$ 275 million for planned eradication activities through to the end of 2005 remained the single largest global threat to polio eradication.** ■



2002

Interrupting transmission of polioviruses

polio eradication
polio eradication

Stopping transmission

Milestone 2002:

Transmission of wild poliovirus will be stopped in all countries

Status: Achieved in all but seven countries

EUR will be certified polio-free

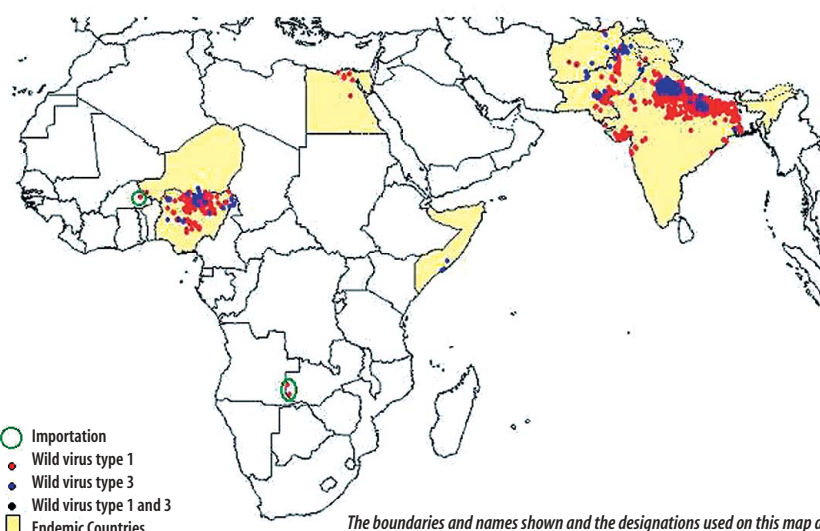
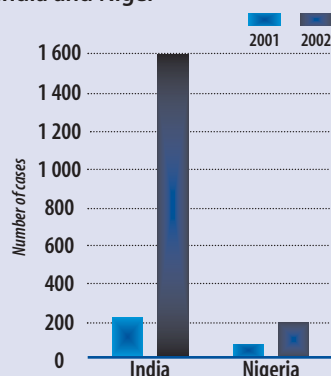
Status: Achieved 21 June 2002

By the end of 2002, wild poliovirus was eliminated from all but seven countries in the world, the fewest in history. The vast majority of cases, 99%, were confined to northern India,

northern Nigeria and areas of Pakistan with 80% of the global total restricted to just six of the 76 states/provinces of those countries (see map). In Egypt, seven cases were reported in 2002, increased from five cases in 2001. Recent poliovirus reservoirs, Ethiopia and the Sudan, recorded no cases in 2002, suggesting polio-free status. Angola, the country which suffered the largest polio outbreak in Africa in recent history with 1103 cases in 1999, detected no cases. Surveillance is ongoing to confirm Angola's polio-free status. Importation related cases were detected in Burkina Faso (one case) and Zambia (two cases). Despite certification-standard surveillance, the number of detected cases in Afghanistan, Niger and Somalia were very low (ten cases, three cases and three cases respectively).

Laboratory confirmed cases of poliomyelitis, * 2002

Rise in polio cases 2002 vs 2001: India and Niger



*Excludes viruses detected from environmental surveillance and vaccine derived polio viruses.

Data in WHO HQ as of 30 April 2003.

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border.

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Note: For the purposes of tracking progress, wild poliovirus transmission is considered interrupted in a country following at least 12 months with no evidence of circulation of endemic wild poliovirus in the presence of high-quality surveillance.

While the number of endemic countries fell to the lowest ever in 2002, a significant increase in cases in just two countries, India and Nigeria, saw the global total of polio cases quadruple over 2001. Of the 1919 cases in 2002, 1600, or 83%, were in India, with 65% clustered in the state of Uttar Pradesh alone. Nigeria recorded 202 cases, 39% of which clustered in the states of Kaduna and Kano. Pakistan had the third highest proportion of cases with 91, but transmission was stopped in a number of former reservoir areas of that country (see box below).

Egypt emerged as a particular concern during 2002, as expanded environmental sampling demonstrated much more extensive transmission than had been detected through AFP surveillance. From mid-2002, new leadership of the programme heralded immediate improvements in surveillance and the quality of SIAs.

Despite the widespread disturbances in late 2001 and the massive repatriation of refugees in early 2002, indigenous poliovirus transmission declined slightly in Afghanistan, as 10 cases were reported, one less than in 2001. A lack of access

continued to hamper some activities in 2002, particularly in Somalia. The situation improved in the second half of the year, as international teams entered Mogadishu in October to monitor polio eradication activities for the first time since the spring of 2001. In total, three cases were reported in 2002, in that country. In Niger, only three cases were reported, down from six cases in 2001. The detected viruses are closely related to those found in neighbouring Nigeria; however monitoring data clearly demonstrates that independent low-intensity circulation is occurring in Niger. Niger conducted five large-scale SIAs, and two intense mop-ups; such activities will need to continue throughout 2003, as Niger is affected by high levels of population movement, and the risk of importations from neighbouring Nigeria remains high.

Finally, importations were detected in two countries – Burkina Faso and Zambia. These countries rapidly responded with mass immunization campaigns, which rapidly stopped transmission. Continued importations into polio-free countries do, however, underscore the fragility of the progress to date, and the fact that all countries must continue to protect their children fully against polio and maintain certification-standard AFP surveillance through global certification.

Pakistan – progress where it counts

With polio maintaining a stubborn foothold in Pakistan at the outset of 2002, Pakistan demonstrated strong political commitment by conducting eight large-scale SIAs, including four NIDs and four SNIDs targeting high-risk areas. The programme has flourished under strong leadership at national, state and district levels. Pakistan also implemented third party monitoring of SIA quality throughout the year, resulting in early identification of susceptible populations and rapid, subsequent refinement of strategies. AFP surveillance improved, from a non-polio AFP rate of 2.33 cases per 100 000 population <15 years of age in 2001, to 2.73 in 2002 nationally. This strong work has resulted in an 22% decline in new cases over 2001. More significantly, the country saw a definite reduction in the genetic diversity of circulating viruses. In 2001, a total of 14 clusters of genetically-related viruses were found to be circulating, compared to only nine clusters in 2002, with the vast majority of poliovirus Type 1 being related to only two clusters. With continued multiple rounds of high-quality SIAs and political commitment at all levels, the global TCG felt Pakistan could still eliminate polio by late 2003.

For 2003 – challenges to stopping poliovirus transmission

The interim meeting of the global TCG in November 2002 outlined the opportunities and challenges to stopping transmission by the end of 2003.

Overall success in every country requires the highest possible quality polio eradication activities, including >90% coverage during SIAs and the maintenance of certification-standard surveillance for acute flaccid paralysis (AFP).

In particular, the TCG noted that continued high-quality supplementary polio immunization campaigns could stop transmission by mid-2003 in Afghanistan, Niger and Somalia. Success is contingent on continued access to difficult areas of the conflict-affected endemic countries, particularly the Kandahar region of Afghanistan



and the Mogadishu area of Somalia. The TCG also determined that Pakistan could stop transmission in 2003 if high-quality activities continue throughout the year, with strong political commitment at each level of government.

Egypt, India and Nigeria

In November 2002, the global TCG noted: “grave concerns about achieving eradication within the next six to twelve months, particularly in India, Nigeria and Egypt.” The TCG specifically recommended at least six rounds of high-quality supplementary polio immunization campaigns in the polio-infected areas of each country, possibly combined with decentralized operations to enhance the quality of these activities. The TCG noted that such steps must be carried out in the first half of 2003 to interrupt transmission by the end of the year. Enhanced high-level political engagement at all levels in these countries would be required to make this possible.

By early 2003, each of these countries had already demonstrated progress toward implementing these recommendations. India has scheduled two NIDs and four very large-scale SNIDs in high-risk areas, and strengthened the management of operations in Uttar Pradesh. Some improvements were already noted in India's January and February 2003 NIDs, with more children reached than in the late 2002 rounds (in Uttar Pradesh alone: 33 million children in January 2003, and 33.9 million children in February 2003, versus 30.4 million children in November 2002). Nigeria had also scheduled additional rounds, with particular plans to target the highest burden states of Kano and Kaduna in early 2003. At least two further SIAs are planned in that country in late 2003.

In Egypt, a joint national/international Technical Advisory Group (TAG) review in early 2003 found that the direct oversight of the polio programme by His Excellency the Minister of Health and Population led to a substantial improvement in eradication activities in the second half of 2002. SIA quality in late 2002 was deemed better (9.8 million children vaccinated in December 2002 versus 8.8 million children in December 2001), with enhanced efforts to deliver vaccine door-to-door, particularly in the

Stopping transmission of the wild poliovirus in all countries requires:

- Reaching more children during polio eradication campaigns in Egypt, India, Nigeria and Pakistan.
- Closing the US\$ 275 million funding gap for 2003–2005.
- Improving access in conflict-affected countries, particularly in Afghanistan (Kandahar area) and Somalia (Mogadishu area).
- Continuing certification-standard surveillance in polio-free and polio-endemic countries.

vast suburbs surrounding Cairo. Of equal importance, AFP surveillance quality also improved, particularly in the second half of the year, resulting in a 2.4 non-polio AFP rate for all of 2002.

Overall, continued improvements in the quality and management of the polio eradication strategies in each of these countries, combined with multiple rounds of high quality SIAs in 2003, are critical to the objective of interrupting transmission of wild poliovirus globally. To build on the potential gains of 2003, a similar schedule of multiple rounds of high-quality SIAs will also be required in 2004, with the addition of large scale mop-up campaigns in areas with residual transmission.

External financing

Globally, the single greatest threat to polio eradication continues to be the US\$ 275 million funding required for eradication activities through end-2005. The consequences of this funding challenge became particularly apparent in early 2003, with an acute cash shortage for 2003 activities. This resulted in the unprecedented cancelling of planned immunization activities in a number of high-risk countries, shortened duration of contracts of polio-funded staff, and the cutting of surveillance budgets by 30%. WHO and its polio partners urgently appealed to donors for support, noting the situation could be managed if sufficient new funding was in place by July 2003. The polio partnership is appealing for unearmarked funds to fill the US\$ 275 million funding gap, so that the Initiative can act quickly to manage unexpected outbreaks and fill other urgent funding needs. ■

2002

Polio eradication Strategic Plan 2001 – 2005

Areas of work



Intensified supplementary immunization activities

Milestones 2002:

Endemic countries

Three to four NIDs/year and mop-up campaigns will continue in all countries that were endemic in 2000-2001, using a house-to-house strategy.

Status: Achieved.

Polio-free countries

Continued annual SIAs in all high-risk polio-free countries and long-term SIA plans established for all countries with routine OPV3 coverage of <90%

Status: Achieved.

◀ This milestone was set in response to the 1999 World Health Assembly resolution to accelerate polio eradication. Acceleration includes:

- Conducting more than two rounds of NIDs each year in endemic areas.
- Improving the quality of SIAs, particularly with a house-to-house strategy, a multisectoral approach, detailed micro-planning, extensive social mobilization and comprehensive supervision of planning and implementation.
- Rapidly attaining certification-standard AFP surveillance to guide SIA planning and mop-up campaigns

2002			
Country	Number of SIAs	OPV-delivery Strategy	Case Count
Afghanistan	6	House to House	10
Angola	5	House to House	0
Egypt	5	House to House	7
Ethiopia	2	House to House	0
India	3	House to House & fixed Post	1 600
Niger	5	House to House	3
Nigeria	5	House to House	202
Pakistan	8	House to House	91
Somalia	4	House to House	3
Sudan	8	House to House	0

In 2002, supplementary polio immunization campaigns reached 500 million children around the world, during 266 SIAs in 93 countries. Of these, 54 were carried out in the 10 countries considered polio-endemic at the outset of 2002. (See table on right.)

Of special note is Pakistan which undertook four NIDs and four SNIDs in 2002 to capitalize on the reduction in new polio cases in 2001. Neighbouring Afghanistan, which shares a poliovirus reservoir with Pakistan (i.e. a shared geographic area spanning across the border of both countries, with a common family of wild

poliovirus), held a similar schedule of eradication activities (four NIDs and two SNIDs), with the two countries synchronizing many of these activities.

India steadily reduced the quantity of SIAs as new cases declined, from a high of six NIDs in 1999 to just one NID and two SNIDs in 2002. The global TCG noted that the decreased quantity, combined with suboptimal quality of activities (up to 15% of homes were missed in the highest-risk areas of Uttar Pradesh), resulted in the polio epidemic in northern India in 2002.



Photo: WHO/JM Giloux

Vaccinators reach a refugee camp during an NID in Afghanistan

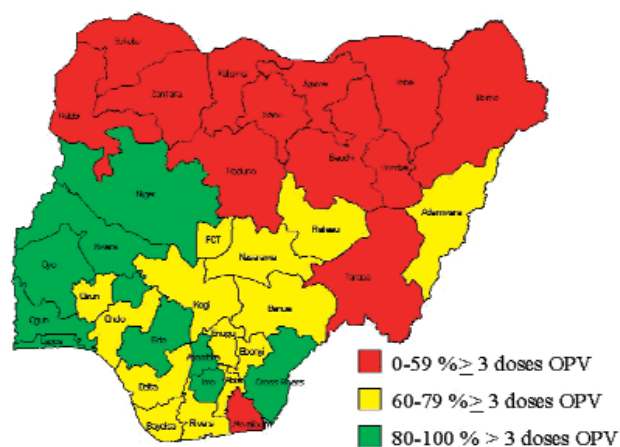
Nigeria conducted sufficient quantities of SIAs in 2002 – with three consecutive NIDs and two SNIDs. However, the fourfold increase in cases in Nigeria in 2002 demonstrates the persistence of substantial gaps in SIA coverage, with many missed children in northern states. SIA monitoring data highlight clear differences between the quality of SIAs in polio-free versus polio-endemic states (see figure below), based on OPV coverage of non-polio AFP cases. The global TCG recommended that Nigeria could make better use of SIA and AFP data to optimize the quality of SIAs in 2003.

Niger, a country with low population density and limited virus circulation, carried out three SNIDs and two consecutive NIDs coordinated with neighbouring Nigeria. High population immunity will have to be maintained through routine immunization and ongoing SIAs to stop endemic circulation, and protect against importations from Nigeria in 2003 and 2004.

Egypt held two large-scale SNIDs in the first half of 2002, and three consecutive rounds of NIDs in the second half of the year. However, environmental sampling suggested wide geographic

transmission of polio, previously undetected due to surveillance gaps. From mid-2002, under a new leadership, immediate improvements in the quality of SIAs were seen.

OPV Coverage based on Surveillance Data, Nigeria
Percentage of Non-polio AFP Cases <60 months of age w/3 or more doses of OPV
January – December 2002



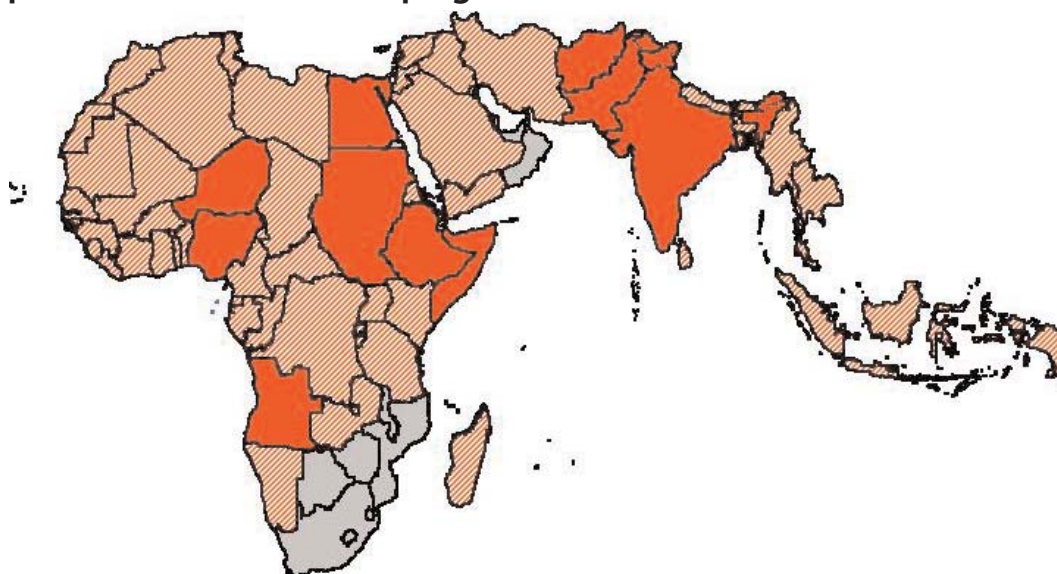
For 2003 – focus on stopping transmission, managing outbreaks

Given the focal transmission of polio in just parts of seven countries in 2002, and the limited financial resources available, the Initiative is reprioritising activities, giving an increased emphasis to the seven endemic areas while

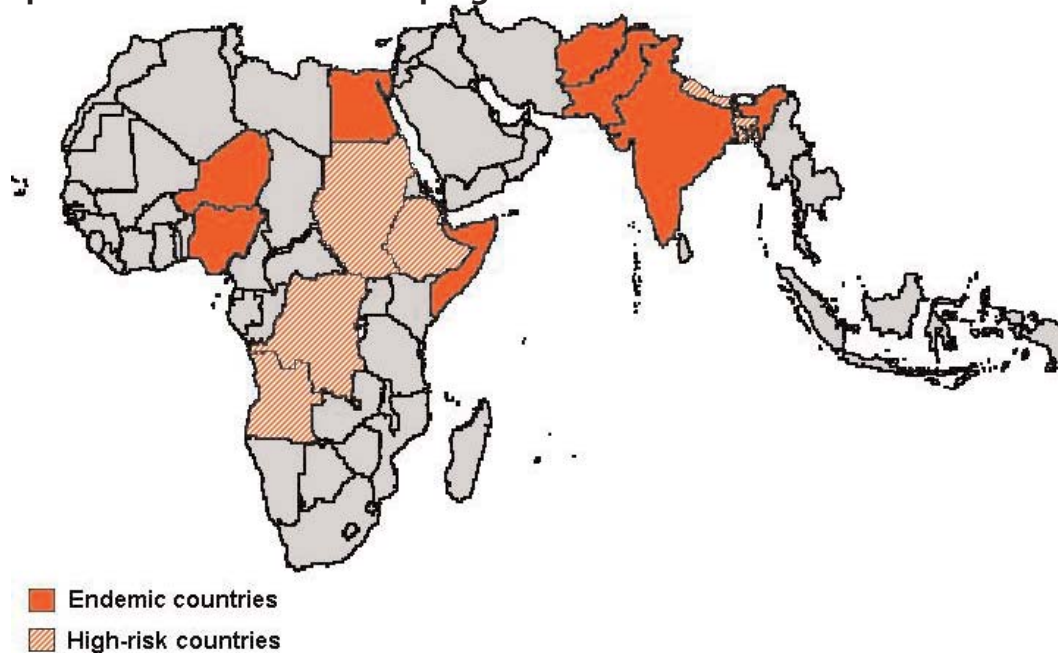
achieving certification standard surveillance in all countries. At the same time, large-scale 'preventive' campaigns will be replaced with an emergency response strategy in all but six countries.

Tactical shift – revised campaigns in the 3 remaining polio-endemic Regions (AFRO, EMRO and SEARO)

2002 polio immunization campaigns



2003 polio immunization campaigns



Note: in 2002, 266 polio immunization campaigns were conducted in 93 countries. In 2003, the focus will be on 51 polio immunization campaigns in 13 countries.

Certification-standard surveillance

Milestones 2002:

AFP Surveillance
Certification-standard surveillance will be achieved and maintained in all regions and in >90% of countries.
Status: Achieved.

Certification
National Certification Committees will be established in all countries including all endemic and recently endemic areas.
Status: Achieved.

AFP Indicators

1. AFP case detection rate.
2. Stool specimen collection rates.
3. Specimen processing in a WHO-accredited laboratory.

Surveillance for poliomyelitis and poliovirus relies primarily on AFP notification, supplemented in specific circumstances by complementary systems, such as environmental and/or enterovirus surveillance. The quality of AFP surveillance in a country is evaluated through three key indicators: 1) non-polio AFP rates (target: >1 per 100 000 population aged <15 years); 2) adequate stool specimen collection rates (target >80%), and 3) specimen processing in WHO-accredited laboratories (target 100%).

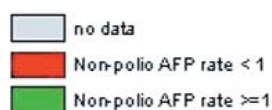
AFP surveillance completeness, quality and timeliness continued to build on the successes of 2001, with even stronger performance indicators. Overall, AFP surveillance sensitivity globally increased 8% in 2002 with almost 3000 more AFP cases detected than in 2001. Increases in AFP case

Non-polio acute flaccid paralysis (AFP)

2001

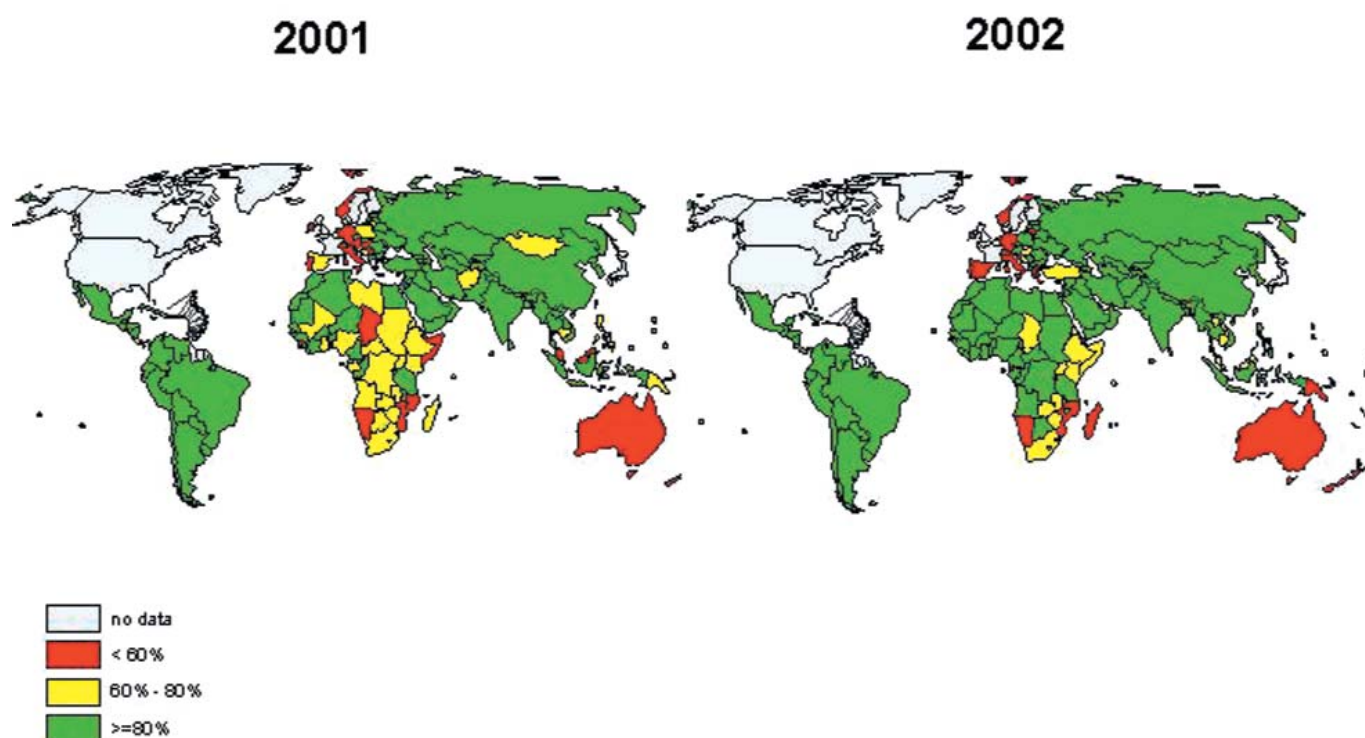


2002



Data in WHO/HQ as of 2 April 2003

Adequate stool specimen collection rate



Data in WHO/HQ as of 2 April 2003

detection were especially significant in SEARO (+18%) and EMRO (+16%).

Globally, the non-polio AFP rate increased from 1.6 in 2001 to 1.9 in 2002; the adequate stool specimen collection rate increased from 82% in 2001 to 86% in 2002; and 100% of specimens were processed in a WHO-accredited laboratory. All WHO regions have now achieved certification-standard AFP performance indicators. Significantly, the WHO African Region (AFR) reached certification-standard performance for the first time in 2002, with a non-polio AFP rate of 2.9; and 83% adequate stool specimen collection rate.

Given the strong AFP performance at the regional level, surveillance efforts were increasingly targeted at improvements at national and subnational levels. Of the seven polio-endemic countries, all achieved or maintained certification-standard surveillance in 2002, with the single exception of Somalia, where the sample collection rate lagged slightly at 67% due to limited access in

some areas as a result of the ongoing civil conflict. Surveillance improvements in Nigeria resulted in the detection of a significantly higher number of confirmed poliomyelitis cases in that country (56 in 2001 vs 202 in 2002).

To further improve the quality of AFP surveillance, and to provide appropriate expert advice to national and subnational authorities, a number of surveillance reviews were conducted in 2002, including in Angola, Chad, Congo, Democratic Republic of the Congo, Egypt, Eritrea, Ethiopia, Iran, Pakistan, and Sudan. These reviews focused especially on polio-endemic countries, and recently polio-endemic countries with surveillance gaps, confirming reported surveillance progress and concluding that it is unlikely that wild poliovirus continues to circulate undetected in the recently polio-endemic countries.

Despite these improvements, important surveillance gaps persist in some polio-free areas. For example, several recently polio-endemic countries



in southern and eastern Africa have not yet achieved certification-standard surveillance. In addition, surveillance is still suboptimal in some border areas, especially in areas where civil unrest continues to be a challenge. For example, although Angola's national AFP surveillance rate is 3.0, and the surveillance rate in the Democratic Republic of the Congo is 5.0, there are substantial 'blind areas' with little surveillance data in both countries.

For 2003

For all WHO regions to be in the process of polio-free certification in 2005, the quality of surveillance for AFP cases must be raised to certification standard, especially in 24 countries and territories in the WHO Regions of Africa (AFR) (16 countries), the Eastern Mediterranean (EMR) (6 countries), and South-East Asia (SEAR) (2 countries). National Certification Committees have been established in almost all endemic and recently-endemic countries.

All countries in the three remaining endemic regions (AFR, EMR, SEAR) have established NCCs, with the exception of Somalia. All NCCs have been working closely and effectively with their respective Regional Certification Commission (RCC), focusing on increasingly complete documentation of national polio-free status. While individual countries are not 'certified' as polio-free (only WHO regions as a whole can be 'certified'), all NCCs are sending annual progress reports to their RCCs for review,

with the objective of eventually submitting the complete RCC-required national documentation verifying national polio-free status. Since end-2001, the EMR has begun to formally review national documentation from member countries which have been polio-free for three years or more and have maintained certification-standard surveillance during that period. To date, the RCC/EMR 'accepted' national documentation from 13 of 23 Member States. However, NCCs from all countries will need to provide annual update reports until eventual certification of the entire region is achieved. NCCs in certified regions will remain active and continue to provide update reports at least until global certification.

Laboratory network – working overtime on polio

Timely, accurate results from the polio laboratory network are crucial, as they focus the Initiative on the last pockets of polio, facilitating targeted, cost-effective responses.

A global network of 145 laboratories forms the foundation of surveillance for the polio eradication initiative, investigating faecal samples from AFP cases for the presence of polioviruses. The laboratory performance is monitored through annual proficiency testing and on-site evaluations undertaken as part of a formal accreditation programme coordinated by WHO. One hundred percent of countries had access to a WHO-accredited laboratory.

In 2002, network laboratories investigated 70 000 faecal samples – a 12% increase over 2001. Network laboratories isolated wild polioviruses from about 2000 AFP cases in 2002 representing a 155% increase compared to 2001, and managed an increased demand for genetic characterization of viruses to investigate possible transmission linkages. Despite this increase, results were available within the programme target of 28 days for the vast majority (90%) of samples.



Photo: © WHO

Containment of wild poliovirus stocks

Milestones 2002:

Process

National Task Force (NTF) / Coordinator and National Plans of Action (NPA) for laboratory containment are established in all non-endemic countries

Status: Mostly achieved – 80% of all non-endemic countries in AMR, EMR, EUR and SEAR have established a NTF/Coordinator and NPA .

Outcomes

National laboratory surveys are initiated in all non-endemic countries of AMR, EMR, EUR, SEAR with complete inventories in WPR.

Status: Partly achieved – 70% of non endemic countries in AMR, EMR, EUR and SEAR have begun surveys. In the WHO Region of the Western Pacific (WPR), 34 of 38 countries have completed inventories.

Considerable progress has been made towards achievement of the 2002 milestones for laboratory containment of wild polioviruses. Eighty per cent of all non-endemic countries (173/212) established a NTF/Coordinator and NPA. Ninety-four per cent (125/133) of the non-endemic countries in AMR, EMR, EUR and SEAR have begun conducting a national survey of laboratories for stocks of wild poliovirus or potentially infectious materials. The most progress has been made in the three WHO Regions already certified polio free – the AMR, EUR, and WPR with polio-free countries in the three remaining polio-endemic regions also making strides in 2002.

Countries of the WHO European Region made substantial progress in order to meet the containment requirements for Regional Certification in July 2002. Nearly all (50) of the 51 countries of the region established a NTF, created a NPA, compiled a list of laboratories, and initiated a national survey. Of the 51 countries, 41 (80%) submitted national inventories to the European Regional Certification Commission. The 10 remaining countries are highly industrialized western European nations that face substantial logistical challenges in contacting a large number of biomedical institutions.

Similarly, in WPR, China and Japan have not yet submitted a national inventory to the RCC, as they also face substantial logistical challenges. In total, 34 countries/territories of WPR have submitted completed inventories.

Progress with the "survey and inventory" phase laboratory containment activities				
Member States in each Region which have >>>>>>>	Appointed a national coordinator	Begun compiling list of biomedical facilities to be surveyed	Started conducting survey of laboratories	Submitted finalized national inventory of laboratories
Africa (48 countries)	6	0	0	0
Americas (47 countries)	47	41	19	0
Eastern Mediterranean (24 countries)	23	17	16	5
European (51 countries)	51	50	50	41
South-East Asia (11 countries)	10	7	6	0
Western Pacific (38 countries)	36	34	34	33
Worldwide (219 countries)	173	149	125	79

In the Americas, laboratory surveys are ongoing in 19 of 47 (40%) countries of the Region. Of note, the United States launched a nationwide survey of over 30 000 clinics, 450 academic institutions, 637 biomedical institutions, 56 state and local health departments, and 12 federal government departments. Replies from these institutions will likely represent well over 100 000 laboratories and are expected to be received by mid-2003.



Laboratory containment activities are also underway in polio-free countries of WHO Regions that have yet to be certified (AFR, EMR, SEAR). All non-endemic countries of EMR and SEAR have appointed a NTF/Coordinator and many of them have begun conducting a survey. The WHO African Region also began containment activities in 2002 with two countries, Cameroon and Uganda, established to serve as pilot countries for guiding the process in the Region during 2003.

For 2003

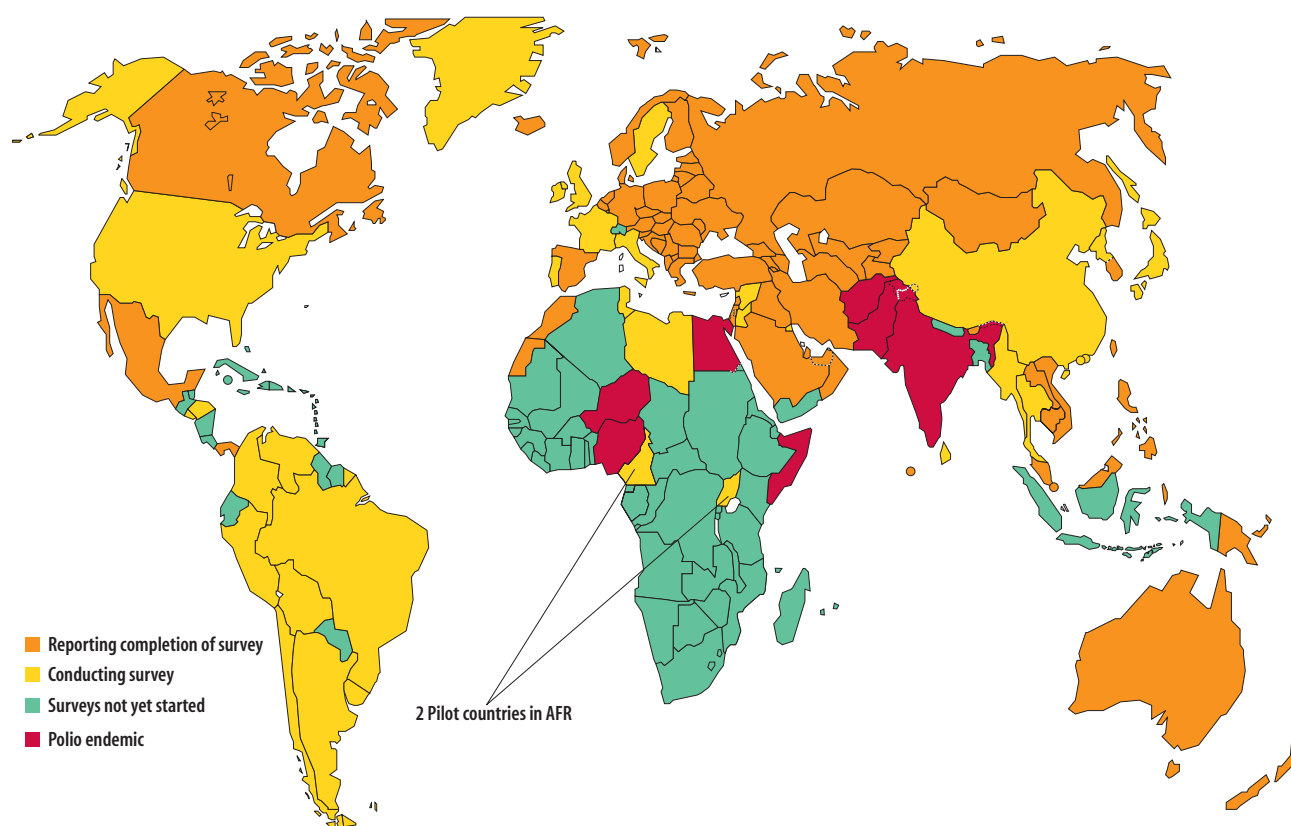
To continue progress in 2003 and beyond, a second edition of *the Global action plan for laboratory containment of wild polioviruses* was published to reflect lessons learned from experiences with containment implementation to date. It clarifies the activities in each of the two phases leading to laboratory containment: the laboratory survey and inventory phase and the global certification phase. Biosafety requirements during these two phases are defined in terms of wild poliovirus risk. Recommendations for the

containment of vaccine-derived polioviruses (VDPVs) are expanded in this new document. Finally, the *plan* examines the implications of post-certification immunization policies on poliovirus biosafety requirements.

Steps to increase containment practices at IPV manufacturing sites are also being addressed. Manufacturers have worked closely throughout 2002 with biosafety experts and WHO to implement more stringent containment practices at manufacturing facilities. In February 2003, the WHO Expert Committee on Biological Standardization (ECBS) convened to finalize the guidelines for an increased containment process for all IPV manufacturers.

Work in 2003 will focus on: (a) completing the national survey and inventory activities in non-endemic countries, and (b) continuing preparations for global certification by working with the Global Certification Commission (GCC) to further define how containment implementation will be evaluated prior to global polio-free certification.

Laboratory containment 2002 – Progress with the “survey and inventory” phase



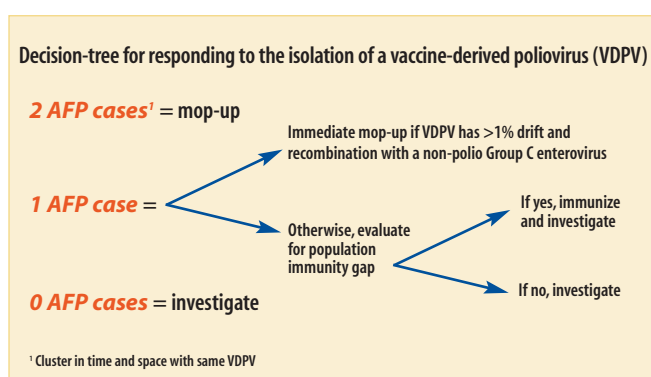
Development of post-certification immunization policy

Milestones 2002:

Data generation
All programmatic data required for policy development has been identified or collected
Status: Achieved.

Policy development
A framework is developed for assessing and managing post-certification risks of paralytic polio.
Status: Achieved.

The global TCG and other forums have previously noted the need for a relatively simple framework to summarize the risks of paralytic poliomyelitis in the post-certification era and explain how those risks might evolve over time. Such a framework will be of particular importance for discussions with countries using OPV and for developing policy decision models. A framework has now been developed that summarizes these risks into two major categories, including (a) those due to VDPV, and (b) those due to the handling of wild poliovirus stocks.



Risk category	Risk	Frequency	Estimated global annual burden**
Risks of polio paralysis from continued use of oral polio vaccine	VAPP (vaccine-associated paralytic polio)	1 in 2.4 million doses of OPV administered	250–500 cases per year
	cVDPV (circulating vaccine-derived polioviruses)	One episode per year in 2000–2002 (Haiti, Madagascar, the Philippines)	Approx. 10 cases per year (total of 29 cases in three years)
	iVDPV (immuno-deficient excretors of vaccine-derived polioviruses)	19 cases since 1963 with 2 continuing to excrete; no secondary cases	<1 case per year
Risks of paralysis from mishandling of wild poliovirus	Inadvertent release from a laboratory	None to date	
	Inadvertent release from an IPV manufacturing site	One known event in early 1990s	No cases
	Intentional release	None to date	

* Under current polio immunization policies
 ** Study and data collection is ongoing for all categories

This framework also summarizes current knowledge on the magnitude of these risks, how these risks are expected to evolve over time, and the expected impact of each of the proposed risk-management strategies. The risk framework assumes that OPV will continue to be used for the foreseeable future.

Data generation

Collection of laboratory and epidemiological data that will be required for post-certification policy development proceeded well in 2002. Data generation focused on quantifying the small but continuing risks of paralytic polio related to the continued use of OPV, including vaccine-associated paralytic poliomyelitis (VAPP), circulating vaccine-derived polioviruses (cVDPV) and excretion of vaccine-derived polioviruses from immunodeficient people (iVDPV).

The screening process for Sabin-like isolates implemented in the WHO polio laboratory network identified a new episode of cVDPV in 2002 due to a Type II virus in Madagascar. With just three documented episodes of cVDPV since 2000 (Hispaniola 2000/2001, the Philippines 2001 and Madagascar), episodes of cVDPV are still very rare and more screening data are needed to understand the significance of these viruses to post-certification policies. Studies of new laboratory methods for screening for cVDPVs have been initiated.

Follow-up of the 19 long-term iVDPV excretors identified during 40 years of OPV use worldwide has found that only two are known to continue to excrete. Data from the UK and US suggest that persistent excretion occurs in at most 0.01-1% of persons with severe immunoglobulin deficiency diseases (such immuno-deficiencies occur in approximately 1 in 100 000 people in a general population).

The field component of an IPV study in Cuba to address immunogenicity and mucosal immunity in the tropical developing country setting was completed. A study of the circulation of OPV-derived viruses before, during and after a switch to IPV in February 2002 in New Zealand was implemented to document the effect of IPV on Sabin virus circulation. Early indications of this study suggest that vaccine-derived viruses seem to disappear after a few months following the switch from OPV to IPV, though the study is not expected to be completed until April 2003 with full results being analysed in the summer of 2003. To assess if IPV-induced immunity will stop vaccine-derived viruses from circulating in a tropical setting, the Initiative has been discussing the possibility of conducting similar field studies with the governments of Cape Verde and Indonesia. In the area of vaccine stockpile development, a review of the regulatory issues for monovalent OPV was initiated, and initial estimates of the size of the stockpile that might be required were developed.

Policy development

This area of work involved international consensus building on policy for the post-certification era, including evaluation of the economic, political, operational and financial implications of each potential policy option. To obtain advice from policy makers, primarily from developing countries, the Institute for Global Health sponsored a Global Health Forum in April 2002 in Annecy, France, on post-certification immunization policy development. This forum generated important information on the data that would be required to develop national policy for the post-certification era. This forum also led to suggestions on appropriate mechanisms for discussing and generating policy consensus, to

eventually be adopted by the World Health Assembly (WHA).

A detailed communications and public information package to keep countries and interested parties abreast of these issues and the ongoing work towards consensus on post-certification immunization policy was developed and made widely available.

Plans for 2003 and beyond

1. Expanding the post-certification policy work to include the development of future policies for:
 - surveillance and notification of poliovirus;
 - stockpiles and emergency response mechanisms;
 - long-term containment of all poliovirus strains, and
 - routine childhood immunization
2. Expanding on the forum on policy development held in Annecy in 2002, to strengthen the scientific basis for policy development.
3. Collation of all generated data into a scientific publication, containing generated information relating to the risk framework, containment, policy options and economics (target publication date: January 2004, Bulletin of WHO).
4. Revision of the briefing pack, and dissemination to a wider audience (target dissemination date: Q1 2004).



WHA will be the forum for international decisions for future policies on poliomyelitis

Strengthening health systems through routine immunization and surveillance

Milestones 2002:

Routine immunization

Five of the countries with a large polio infrastructure will have explicit phased plans linking that infrastructure with the routine EPI goals.

Status: Mostly achieved – Joint EPI and polio country visits were to Bangladesh, the Democratic Republic of the Congo, Ethiopia, Pakistan, and Sudan with the objective of documenting work over the past 12 months using existing ICC-approved plans. Emphasis will be placed on surveillance expansion, microplanning, monitoring and evaluation.

Surveillance

All countries using AFP surveillance will have established a timeframe for expansion to include the notification of at least tetanus and measles cases with laboratory capacity to diagnose measles.

Status: Mostly achieved.

Partnership

Lessons learned from the ICCs are documented, with best practices defined.

Status: Mostly achieved – ICC process is now being strengthened through GAVI.

The GPEI was launched with the dual goals of interrupting wild poliovirus transmission globally and pursuing eradication in a manner which would contribute to the strengthening of health systems, particularly routine immunization services. Since 1988, the GPEI has made a huge investment in routine immunization and surveillance systems through its institutional arrangements, physical infrastructure and human resources. For example, the cold

chain, communications and transport capacity for routine immunization has been largely replaced or refurbished in many low income countries, particularly in sub-Saharan Africa, and tens of thousands of vaccinators and surveillance personnel have been trained or retrained worldwide. The surveillance capacity developed for polio eradication is being used extensively to detect and respond to outbreaks of numerous important diseases such as cholera, measles, meningitis, and yellow fever. Despite these investments, questions have been asked as to whether the short-term disruptions in the delivery of routine immunization and other services due to polio activities might have longer term impacts, particularly given the limited gains in routine immunization globally since the early 1990s.

Consequently, the milestones established to monitor progress in this area of work in the 2001–2005 Strategic Plan were reviewed and substantially revised during the April 2002 meeting of the Technical Consultative Group for the Global Eradication of Poliomyelitis (TCG). The main purpose of these revisions was to establish milestones which were more ambitious and quantifiable. Drawing on the experience gained since 1999, this area of work was divided into three sub-areas with milestones for each:

- a) strengthening routine immunization,
- b) expanding surveillance, and
- c) partnership management.

Although the programme of work under strengthening routine immunization is multi-faceted, the revised milestones were designed to ensure that the infrastructure established for polio eradication was fully utilized to strengthen routine immunization. Recognizing that 77% of the human resources deployed through the eradication initiative are concentrated in just 10 countries (table 1), it was recommended that a long term plan for systematically expanding the work of this infrastructure be established and implemented in each of those countries. In 2002 the methodology was established and by early 2003 planning missions had been completed in 4 countries: Afghanistan, Ethiopia, Pakistan and the Sudan. In each country the extensive linkages between the polio infrastructure and routine immunization services were better documented and plans were established to further draw on the lessons and infrastructure of the GPEI to strengthen routine services. As intended, the plans do not follow a common format, but rather reflect the local circumstances both in terms of the



major barriers and opportunities for strengthening routine immunization services and the existing resources of the polio infrastructure. Common to all plans is a detailed timeline and activities which focus on improving the quality, completeness, and use of district level coverage data, supporting microplanning for delivery of routine immunization, and incorporating monitoring of key routine immunization activities (e.g. cold chain, wall chart, supply, safety) into active AFP surveillance visits to facilities.

In the area of surveillance it was recommended that the Initiative closely monitor and promote the use of the AFP surveillance capacity to report and investigate other important diseases, particularly measles and neonatal tetanus (NNT). In 2002, polio eradication management meetings at the global, regional and country level were used to promote this, and by end-2002 integrated disease surveillance was standard policy in all regions (see table 2). WHO also began establishing the capacity to systematically monitor and report on the number of countries which were actually implementing this policy.

In the area of partnership management, the ICC mechanisms established for polio eradication are now being systematically used and strengthened through the work of the Global Alliance for Vaccines and Immunization (GAVI). The endorsement and adoption of the ICC mechanism by GAVI has been important to sustaining these forums in countries where they already existed, as well as expanding their terms of reference and work to include routine immunization systems

Table 2

Region	Number of countries with AFP system	Number of countries with confirmed policy of integrating measles, NNT and/or other diseases
Africa (48 countries)	46	28
Eastern Mediterranean (24 countries)	23	23
South-East Asia (11 countries)	10	10
Americas (47 countries)	44	44
Western-Pacific (38 countries)	37	4
Europe (51 countries)	39	2
Total (219 countries)	199	111

strengthening, immunization safety and new vaccine introduction. GAVI has also provided the impetus to establish or resuscitate ICCs in countries where they had not existed or had lapsed.

The achievements of 2002 demonstrate substantial progress in systematically building on the polio infrastructure. That the milestones in this area were only partly rather than fully achieved reflects the start-up challenges inherent in implementing these new elements in this area of work. For example, substantial effort is still required just to establish the full baseline data for monitoring the surveillance integration indicator. Although the vast majority of countries report that it is their policy to integrate AFP, measles and NNT surveillance, it is much more difficult to accurately determine whether this is actually happening. In the area of routine immunization, some months were required just to establish concurrence on the priority countries for 2002 missions, plan the missions and conduct them at a time convenient to government and partner agencies.

For 2003

Having gained experience in this area of work since mid-2002, further progress is anticipated in 2003–2004, particularly in polio-free countries. The greatest risk to this work remains the funding gap for polio eradication activities. The acute funding gap at the end of 2002 threatened to severely disrupt this work, especially by its negative affect on the human resources infrastructure that had been established. Because of the funding crisis, it was necessary to have many country staff take prolonged contract breaks in early 2003 while steps were taken to improve the cash flow of the GPEI. Furthermore, once staff were renewed, it was necessary to shorten the duration of their contracts, further compromising staff morale and medium to long-term planning and activities. Rectifying this funding problem will be critical to the success of the work in broadening the benefits of the GPEI. ■

Table 1: Polio-funded human resources, by country

Country	Staff	EPI/Polio Expansion – status of implementation
Non Endemic		
Angola	56	Planned for Q3 2003
Bangladesh	98	Planned for Q2/Q3 2003
Ethiopia	62	Implementation of plan to be completed by May 2003
Democratic Republic of the Congo	166	Planned for Q3 2003
Sudan	311	Implementation of plan to be completed by May 2003
Endemic		
Afghanistan	115	Workshop Conducted
Pakistan	151	Workshop Conducted
Somalia	159	N/A
Nigeria	192	N/A
India	801	N/A
Total, Top 10 countries	2 111	
Total, Global	2 751	
10 countries, % of Total	77%	

2002

The funding gap – the single greatest threat to polio eradication



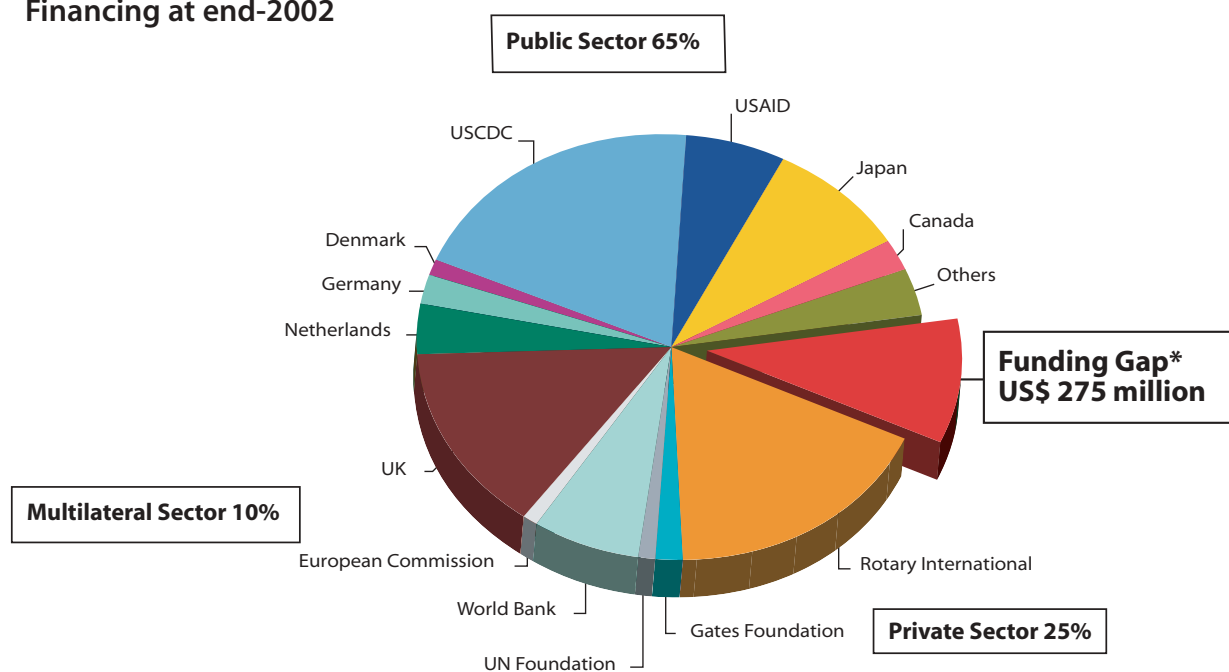
Closing the funding gap

Increased financial support for global polio eradication since 1999 enabled a rapid decline in the number of polio endemic countries to the lowest level ever in 2002. Despite extremely encouraging international support to and endorsement of the Initiative in 2002 at the end of the year, financial support declined. In late 2002 WHO was informed by a number of key partners that it would not be possible to provide expected year-end resources, resulting in an acute funding gap for 2003 that prompted a revised strategic approach with a significant scaling back of activities and staff.

Looking forward, at the end of 2002 the Initiative had external resource requirements of US\$ 725 million for the period 2003-2005. With

the assistance of core donors and new fundraising initiatives, a total of US\$ 450 million has been pledged or is projected to be received, leaving a US\$ 275 million gap for the period. Major donations for 2002 came from Canada, Japan, the Netherlands, Rotary International, the United Kingdom and the United States. The Initiative also received scaled up support from Norway and the European Commission (EC). New initiatives are setting the stage for the funding gap to be narrowed, such as the Rotary International polio eradication fundraising campaign, the commitment by the G8 leaders to provide funds necessary to eradicate polio in Africa by 2005, and a unique public/ private partnership between The World Bank, the Bill and Melinda Gates Foundation, Rotary International and the United Nations Foundation to provide funding for OPV.

Financing at end-2002



*"Other" includes contributions from: the Governments of Australia, Belgium, Finland, Ireland, Italy, Luxembourg, Norway, Oman and the United Arab Emirates; from the International Federation of Red Cross and Red Crescent Societies, the Oil for Food Programme and UNICEF National Committees; and from Aventis Pasteur, British Airways, De Beers and Wyeth.

* As at December 2002



The funding shortfall, coupled with the evolving epidemiology of the poliovirus, prompted a revision of the strategic approach in early 2003, as the number of SIAs in the seven endemic countries was increased to stop transmission more rapidly. It is expected that with continued high-level transmission in India, Nigeria and Pakistan, this revised level of SIAs in these countries will need to be maintained in 2004 and 2005.

New fundraising initiatives:

Rotary International polio eradication fundraising campaign: Rotary International launched its second major polio fundraising drive among its membership at its International Convention in Barcelona, Spain in June 2002. The aim is to raise US\$ 80 million to help close the funding gap. With the theme, "Fulfilling Our Promise: Eradicate Polio," the campaign involves 1.2 million Rotarians in 166 countries and seeks to reach its goal by June 2003, with results expected to be announced at the Rotary International Convention in Brisbane, Australia. Since 1985 Rotary International has committed more than US\$ 500 million to polio eradication.

G8 Africa Action Plan: At the G8 Summit held from 26 to 27 June 2002 in Kananaskis, Canada, G8 leaders placed polio eradication squarely on the agenda and committed to, "providing, on a fair and equitable basis, sufficient resources to eliminate polio by 2005..." To fulfill the commitment outlined in the G8's Africa Action Plan, Canada, the Summit host, immediately pledged an additional US\$ 32 million and the UK pledged US\$ 25 million to fund polio eradication activities in Africa.

The World Bank / Gates Foundation / Rotary – UNF Investment Partnership: The World Bank has joined forces with the Bill and Melinda Gates Foundation, Rotary International and the United Nations Foundation (UNF) in an innovative investment partnership that has the potential to provide US\$ 125 million to help fill the 2003–2005 funding gap for OPV in up to seven key polio countries. The collaboration will see the Gates Foundation and Rotary International/UNF buying down to zero World Bank loans to governments for procuring OPV, in effect turning the loans to countries into grants. Vaccines will be purchased through UNICEF. Agreements with

the Governments of Nigeria and Pakistan are being solidified and discussions have started with the Government of India.

Donor support:

Aventis Pasteur: Aventis Pasteur has become the Initiative's longest standing corporate partner with a new donation of 30 million doses of OPV. The donation – the company's third to the Initiative – is valued at US\$ 3 million, and brings the total number of donated doses to 110 million.

Australia: In addition to matching Australian contributions of up to US\$ 5 million from the Rotary International/UNF private sector campaign and Rotary's ongoing membership fundraising campaign, the Government of Australia continued its support to polio eradication activities in the WHO Region of the Western Pacific.

Bill and Melinda Gates Foundation: The Foundation was a catalyst in securing the participation of Rotary International in a unique public/private sector partnership along with The World Bank, the Gates Foundation and the UNF, to provide OPV in up to seven priority countries. The Gates Foundation's contribution to this unique partnership was US\$ 25 million. The Gates Foundation has previously contributed US\$ 50 million to the Initiative.

Canada: In June 2002, Canada became the first of the G8 countries to operationalize the G8's commitment to provide the resources necessary to eradicate polio in Africa by 2005, pledging US\$ 32 million. In addition, its support to the Nigerian programme continued, as did provision of global-level funding.

US Centers for Disease Control and Prevention (CDC): In addition to its role as a core technical partner in the Initiative, the CDC provided US\$ 102.4 million for OPV, operational costs and programme support through its Atlanta-based headquarters. CDC supported the costs of more than 125 technical personnel to assist WHO and UNICEF in global polio eradication efforts, provided laboratory support to the 145 members of the global polio laboratory network, and provided scientific assistance on post-certification policy development.

Denmark: Denmark concluded its six-year US\$ 30 million commitment to polio eradication in India.

European Commission: The EC provided US\$ 18.4 million for polio eradication activities in Nigeria. Funds were used for operational costs of NIDs and vaccine.

Finland: Finland continued its support to the laboratory network by providing US\$ 90 000 for activities conducted at the Finnish Polio Reference Laboratory.

Germany: Germany continued its commitment to the programme in India by providing US\$ 9 million for OPV, for use in the large-scale polio SIAs.

Italy: Italy provided US\$ 1 million to polio eradication activities in India. In addition, it continued its support for the Polio Reference Laboratory in Rome.

Ireland: In the second year of a three-year commitment, Ireland provided US\$ 900 000 in unearmarked funds for polio eradication through WHO.

Japan: A key, major long-term donor to the programme, Japan contributed over US\$ 30 million for OPV, cold chain and logistics in several countries in 2002. It also supported the polio eradication research agenda and containment and certification activities.

The Netherlands: The Netherlands made a US\$ 60 million contribution at the end of 2001 that helped fund the Initiative's AFP surveillance system and emergency response capacity in 2002. Dutch contributions since May 2000 have helped increase surveillance sensitivity in Africa by 52% and global surveillance sensitivity by 25%.

Norway: Norway more than tripled its level of support to the Initiative in 2002 by providing US\$ 7 million in global unspecified funding.

Rotary International: Rotary International, the largest private sector donor to the Initiative, continued its outstanding commitment by

providing US\$ 25 million in 2002 to countries in all the remaining endemic regions. This brought Rotary International's total commitment to the Initiative since 1985 to more than US\$ 500 million. In 2002, Rotary also launched its second major polio fundraising drive among its membership, this one to raise US\$ 80 million. It also joined forces with The World Bank, the Bill and Melinda Gates Foundation, and the UNF in an innovative financing collaboration to help fill the 2003-2005 funding gap for OPV in up to seven key countries for the GPEI.

Trick-or-Treat for UNICEF Campaign: For the second consecutive year, the Trick-or-Treat for UNICEF campaign organized by the US Fund for UNICEF will contribute the funds it collected to the GPEI. The 2002 campaign distributed 20 million more collection boxes than in 2001, when contributions totalled US\$ 3.4 million.

UNICEF National Committees: In addition to the Trick-or-Treat for UNICEF Campaign organized by the US Fund for UNICEF, four UNICEF National Committees supported the polio eradication initiative in 2002, with contributions by UK/British Airways (US\$ 708 570 used for Zambia polio eradication response activities), Germany (US\$ 287 000), Belgium (US\$ 100 000) and Spain (US\$ 100 000).

United Kingdom's Department of International Development (DFID): DFID entered its second year of a multi-year US\$ 135 million commitment to polio eradication activities in India. It also provided US\$ 18 million in funding at the global level, continued its bilateral support to Bangladesh and Nepal, and pledged an additional US\$ 25 million for polio eradication in Africa in response to the commitment made by G8 leaders in 2002.

United Nations Foundation: The UNF provided US\$ 1 million over two years in critical support to strengthen the Initiative's fundraising capacity. It also collaborated with the Rotary International Private Sector campaign, joined The World Bank/Gates/Rotary-UNF Investment Partnership and supported the Trick-or-Treat For UNICEF campaign by providing matching funds of US\$ 850 000.

***The US Agency for International Development***

(USAID): USAID continued its support for global polio eradication activities by providing US\$ 27.5 million in 2002. USAID is the largest donor to the Global Polio Laboratory Network and supports the work of surveillance officers in Africa and South Asia. It also supported vaccine delivery in key countries, raised awareness to increase community-level participation, and funded ongoing research.

The World Bank/India funding:

The World Bank: In the second year of a three-year commitment, The World Bank provided US\$ 27.4 million through IDA credit mechanisms for OPV and operational costs to the GPEI in India.

Wyeth: The pharmaceutical company Wyeth made its second US\$ 1 million contribution to support the African Regional Polio Laboratory Network. Wyeth continued its important contributions to strategically essential elements of the GPEI. ■

2002

Advocacy

polio eradication
polio eradication

Photo: WHO/P Blanc



Ali Moallin (on left) – the last known case of smallpox, raises awareness about importance of polio immunization

▶ ▶ **Ali Moallin – The last case of smallpox, now a polio warrior** The public health community has known Ali Moallin's smallpox-scarred figure for 20 years. A photograph of Moallin at age 21 appears regularly in textbooks, presenting him as the last known case of naturally occurring smallpox in the world. Twenty-five years later, the scars have faded, but Moallin remembers all too well how he won his unfortunate place in public health history.

A health worker in the late 1970s, he recalls the day his district was immunizing the community against smallpox at the health clinic in his hometown of Merca, Somalia. "I didn't want to have an injection, so I pretended to have been immunized. I rolled up my shirt, held a cotton ball over my upper arm, and strolled past the immunization team as though I'd already had the shot." Soon afterwards, two children with smallpox were admitted to a health centre in Moallin's jurisdiction. "I took those children to quarantine. The young girl died. And then I got sick with smallpox, and ended up in the same quarantine facility. I made myself miss the vaccine thinking I was cheating the others, but later it turned out I was cheating myself."

Today, Moallin uses his experience to help fellow Somalis fend off polio. "Because I had the sad experience of defying the vaccine and then suffered as a result, I now work as a polio vaccine agent with WHO and UNICEF," he said. Moallin travels around Merca, explaining the need to vaccinate every child under five years of age during NIDs. Despite the complexities of working in one of the most conflict affected countries on earth, Moallin is adamant that Somalia will eliminate polio, fast. "Somalia was the last country to have smallpox. I don't want it to be the last with polio."

▶ ▶ **The Annans in the Democratic Republic of the Congo and Angola:** On a trip through the Democratic Republic of the Congo and Angola in early September 2002, UN Secretary-General Kofi Annan and his wife Nane Annan stopped at a hospital in Kinshasa and at a refugee camp near Luanda to help immunize children during the region's third round of synchronized NIDs. The Secretary-General and his wife have consistently supported the polio eradication programme, often stopping to vaccinate children when their travel coincides with polio immunization campaigns.



Photo: UN Photo # 00164

UN Secretary-General, Mr Kofi Annan dropping OPV into the mouth of a child at the Hospital General de Kinshasa in early September 2002.



▶ ▶ **Horn of Africa Meeting** – Polio eradication partners gathered in Nairobi for the first large-scale advocacy meeting for Ethiopia, Somalia and the Sudan. Hosted by WHO and UNICEF, more than 100 partners including donor governments, ambassadors, specialists from the relevant Ministries of Health, Rotary International, and nongovernmental organizations assembled to pledge their continued support to a polio-free Horn of Africa. World renowned photographer, Sebastião Salgado, was the keynote speaker and later opened an exhibit of his photographs recording polio eradication activities across Africa and South-east Asia.

▶ ▶ Support from Afghanistan's President, **Hamid Karzai**, offered a strong boost to eradication efforts in that country, as he launched the September round of NIDs, raising both national and global awareness of polio eradication efforts.

▶ ▶ **UN supports extraordinary mission to Mogadishu:** As Somalia is the last source of wild poliovirus in the Horn of Africa, there was an urgent need for international staff to monitor supplementary immunization and surveillance activities in Mogadishu in 2002. Considered amongst the most dangerous cities in the world, international staff had not been allowed to enter

Photo: © WHO/Elias Durr



Guards escort a polio mission into Mogadishu in October 2002.

since spring 2001, due to a kidnapping incident involving polio workers. But thanks to extraordinary planning and preparation on the part of the UN Chief of Security, Somalia and UNSECOORD, New York, a team of international polio staff entered Mogadishu in mid-October on a successful, escorted mission into the city. The team was able to support Somali staff during the polio campaign, and offer



Photo: © Rotary International/JM Giloux

Rotary club members pay a visit to the Emir of Kano during a polio NID in Nigeria in November 2002

recommendations for reaching more children in future rounds.

▶ ▶ **Hundreds of Rotary club members travelled to participate in NIDs in 2002**, including trips to Ethiopia, Ghana and Nigeria. Seattle-based Rotary Club member Ezra Teshome led 85 colleagues to his home country of Ethiopia in October. "It was moving to see the families' hope at the NIDs. Some had walked for miles and miles to get their children vaccinated." Rotarians also met with the Emir of Kano in Nigeria. The Emir was instrumental in encouraging traditional communities in the state of Kano to participate in polio vaccination campaigns.

▶ ▶ **Sebastião Salgado**, the globally acclaimed photographer, continued to advocate for an end to polio in 2002. Salgado's photographs were featured in international publications, including the Smithsonian magazine, Vanity Fair, the Telegraph Magazine and Italy's "D" Repubblica. Salgado also travelled extensively to open his exhibit, titled "The End of Polio", which debuted in New York and subsequently travelled to Berlin, Nairobi and Washington. Demonstrating even further support for the Initiative, Salgado also donated use of his photographs depicting the distribution of Vitamin A during polio NIDs. ■



Photo: WHO/P.Blanc

Glossary of terms

The following is a basic explanation of primary terms relating to the Global Polio Eradication Initiative. For further information about each term, please visit www.polioeradication.org.

AFP – acute flaccid paralysis

AFP is a symptom, rather than a specific disease. All cases of AFP are examined to determine the specific disease, of which polio is one possibility. Surveillance for AFP cases is key to detect polio among a population. A country's surveillance system should be sensitive enough to detect at least one case of non-polio AFP for every 100,000 children under 15 years of age.

AFR – WHO African Region

AMR (PAHO) – WHO Region of the Americas (Pan-American Health Organization)

EC – European Commission

EMR – WHO Eastern Mediterranean Region

EPI – Expanded Programme on Immunization

EUR – WHO European Region

GAVI – Global Alliance for Vaccines and Immunization

GAVI is a partnership of governments, international organizations, major philanthropists, research institutions and the private sector to promote and protect public health through the widespread use of modern vaccines.

GCC – Global Certification Commission

The term 'certification' in the Polio Eradication Initiative is used to describe the official, independent verification that transmission of wild poliovirus has been interrupted. The GCC, established in 1995, is responsible for setting the process and criteria for certification and ultimately deciding whether to certify that polio has been eradicated across the globe. The GCC is made up of a panel of 13 independent experts.

GPEI – Global Polio Eradication Initiative

Importations

In the context of polio eradication, importations refer to wild poliovirus which has been 'imported' into a previously polio-free region by population movement.

IPV – Inactivated poliovirus vaccine

IPV is one of the two polio vaccines (the other being OPV or oral polio vaccine). In contrast to OPV, IPV is made from a killed poliovirus. IPV needs to be injected by trained health workers. It works by producing protective antibodies in the blood (serum immunity) - thus preventing the spread of poliovirus to the central nervous system. However, it induces only low levels of immunity to poliovirus locally, inside the gut. As a result, it provides individual protection against polio paralysis but, unlike OPV, has limited impact on the spread of wild poliovirus.

NGO – Nongovernmental organization

**NID – National Immunization Day**

Organized by local governments, international organizations and NGOs, NIDs are massive, nationwide polio vaccination campaigns. Thousands of volunteers and health workers systematically fan out across the country to find and immunize every single child under five years of age with the OPV vaccine. Typically, an NID will take between 1 and 8 days. NIDs supplement routine immunization activities of a country and are a key strategy for interrupting wild poliovirus transmission, especially in the tropical developing country setting. In addition to providing OPV, Vitamin A is frequently administered during NIDs. In 2002, 42 countries administered Vitamin A during polio immunization activities.

NCC – National Certification Committee**NNT – Neonatal Tetanus****OPV – Oral polio vaccine**

OPV is an orally delivered vaccine. It can be given by volunteers, and - unlike most other vaccines - does not require sterile injection equipment. OPV produces antibodies in the blood ('humoral' or serum immunity) to all three types of poliovirus. OPV antibodies also limit the multiplication of 'wild' (naturally occurring) virus inside the gut, preventing effective infection. This intestinal immune response to OPV is a key reason why mass campaigns with OPV can rapidly stop person-to-person transmission of wild poliovirus. Additionally, the short-term shedding of vaccine virus in the stools of recently immunized children means that in areas where hygiene and sanitation are poor - and the incidence of polio is likely to be highest - immunization with OPV can result in the 'passive' or secondary immunization of close contacts.

SEAR – WHO South-East Asia Region**SIA – Supplementary Immunization Activity**

Any activity which is organized over and above a country's routine immunization activities. NIDs and SNIDs are both examples of SIAs.

SNID – Subnational Immunization Day

Logistically similar to NIDs, SNIDs focus on specific areas in a country. As such, mass polio vaccination campaigns are held subnationally, rather than across the entire country as is the case during an NID.

TAG – Technical Advisory Group

TAGs are joint national/international bodies established by Ministries of Health specifically to address country-level issues relating to polio eradication.

TCG – Technical Consultative Group on the Global Eradication of Poliomyelitis

The Global TCG is the technical oversight and advisory body to the global Polio Eradication Initiative. Consisting of an independent panel of experts, the TCG is convened annually by WHO to review progress and provide advice to the Global Polio Eradication Initiative on policy and strategy.

UNF – United Nations Foundation**UNICEF – United Nations Children's Fund****VAD – Vitamin A deficiency**

VAPP – Vaccine-associated paralytic poliomyelitis

Although OPV is safe and effective, in extremely rare cases (approx. 1 in every 2.5 million doses of the vaccine administered) the live attenuated vaccine virus in OPV can cause paralysis - either in the vaccinated child, or in a close contact. Some congenital immune deficiencies are associated with a higher risk of VAPP. This extremely low risk of VAPP is well known to, and currently accepted by most public health programmes in the world.

cVDPV – Circulating vaccine-derived poliovirus

In very rare instances, the live attenuated vaccine virus in OPV can revert back and acquire wild poliovirus-like properties of both neurovirulence and sustained circulation in a population. Three cVDPV outbreaks during the period 2000-2002 resulted in a total of 29 cases, but experience from the pre-eradication era in Egypt suggests that cVDPVs may establish endemicity under certain conditions.

iVDPV – Immunodeficient excretors of vaccine-derived polio virus

Very rarely, individuals with certain rare congenital immunodeficiencies who have been administered OPV may continue to excrete poliovirus in their stools for six months or more. For this reason, they could potentially reintroduce a vaccine-derived poliovirus into a human population should immunization against polio ever cease. This is being investigated, in terms of its management and implications for post-certification policy.

WHO – World Health Organization

WPR – WHO Western Pacific Region

The spearheading partners of the Global Polio Eradication Initiative are:



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