9

WHO

Polio News

Eradication

Issue 17 – December 2002

A Newsletter for the Global Polio Eradication Initiative
Department of Vaccines & Biologicals
World Health Organization
in association with Rotary International,
Centers for Disease Control and Prevention
and the United Nations Children's Fund

Post-certification era *Page 2*

TCG reviews 3 "high-transmission" countries *Page 5*

Aventis Pasteur donates more OPV *Page 6*

2002: Lowest number of polio infected countries ever – but more cases

At most seven countries will still be endemic for polio at the close of 2002 compared to 10 countries last year.[1] Furthermore, the vast majority of cases – more than 85% – are confined to just nine states/provinces of 76 within India, Nigeria and Pakistan. Despite this geographical restriction in transmission, a five-fold increase in cases in northern India and Nigeria will result in more cases for 2002 (1461 to date) than for 2001 (483 total). The northern India state of Uttar Pradesh alone accounts for more than 60% of the global total (*see pages 3 and 5 for more details*). Four endemic countries – Afghanistan, Egypt, Niger and Somalia – have low-intensity transmission with fewer than 25 cases combined. ◆

[1] All data in this issue of Polio News is as of 3 December 2002.

Polio eradication highlights 2002:

- ***EURO certified polio-free. Combined with the WHO's Region of the Americas (1994) and Western Pacific Region (2000), more than three billion people in 134 countries now live in certified-zones***
- ***No polio detected in Sudan or Ethiopia***
- ***Improved access in countries affected by complex emergencies – Afghanistan, Angola and Somalia***
- ***Type II poliovirus has not been detected for the past three years***

TCG Findings HIGHLIGHTS

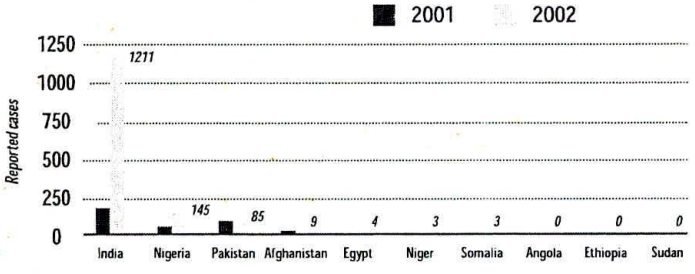
THE GLOBAL TECHNICAL CONSULTATIVE GROUP (TCG) FOR POLIOMYELITIS ERADICATION

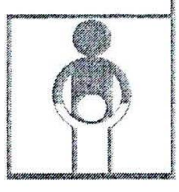
Due to the approach of the end 2002 target date for stopping transmission, and the evolution of research on post-certification immunization policy, the Global TCG held a special interim meeting 13–14 November 2002 in Geneva. Much of this issue of Polio News highlights the TCG's findings.

TCG has "concerns" about India, Nigeria and Egypt – supplementary immunization activity (SIA) quality and quantity main issues

THE Global TCG noted the progress in 2002 and was impressed with the use of surveillance information to drive the programme. The oversight body concluded that given continued high quality SIAs and improved access to children, Afghanistan, Angola, Niger and Somalia should stop transmission by mid-2003 with Pakistan following shortly thereafter. **However, the TCG noted with grave concern that closing immunization gaps in Egypt, India and Nigeria requires urgent and substantial work if transmission is to stop within 12 months.** The TCG specifically recommended at least six rounds of high-quality supplementary polio immunization campaigns in the polio-infected areas of each country, combined with decentralizing operations and increased use of monitoring data to enhance the quality of these activities. Such steps must be carried out in the first half of 2003 to interrupt transmission by the end of the year. (*See page 5.*) ◆

Polio case counts in 10 endemic or recently endemic countries as of 3 December 2001 and 3 December 2002





Aventis Pasteur donates more OPV – becomes longest-standing corporate partner in the Initiative. **See page 6.**

Part One

POST CERTIFICATION IMMUNIZATION POLICY

FRAMEWORK FOR THE ASSESSMENT & MANAGEMENT OF PARALYTIC POLIO IN THE POST-CERTIFICATION ERA

The November interim meeting of the TCG endorsed the framework which has been developed to summarize the risks of paralytic poliomyelitis in the post-certification era. This framework will be particularly important for discussing post-certification immunization policy with OPV-using countries and for developing policy decision models. The framework divides the risks into two major categories: (a) those due to vaccine-derived polioviruses and (b) those due to the handling of wild poliovirus stocks.

This page summarizes the research to date on the nature and magnitude of the risks of vaccine-derived polioviruses as presented to the November TCG. The next issue of Polio News will include an update on the risks of polio paralysis due to the handling of wild poliovirus stocks, with a special focus on the progress in containment.

(see table on the right)

Risks from the continued use of oral polio vaccine (OPV): VAPP, cVDPV and iVDPV

A key factor in the risk assessment for OPV-using countries is the small but continuing risks of paralytic polio due to OPV. These include vaccine associated paralytic polio (VAPP), the emergence of circulating vaccine derived polioviruses (cVDPVs) and excretion of VDPVs from immunodeficient people (iVDPV). Preliminary estimates presented to the TCG on the total global burden of disease due to **VAPP**, measured in terms of the number of cases per birth cohort, is 250–500 cases per year. Although the risk of emergence of a **cVDPV** appears to be even lower than VAPP, it is conditional on factors such as the level of population immunity and immunity gaps. Screening of >5000 Sabin polio isolates and enhanced global surveillance for cVDPVs over the past three years has documented cVDPV on just three occasions at a frequency of one episode per year. These three recent cVDPV outbreaks 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. The **iVDPV** burden from 40 years of use of OPV stands at 19 cases globally with just four patients continuing to excrete poliovirus today. There have been no secondary cases. New research is underway on further ways of expressing the risks from cVDPVs and iVDPVs, and will be presented to the Global TCG meeting on an ongoing basis. ◆

Risks of polio paralysis in the post-certification era**

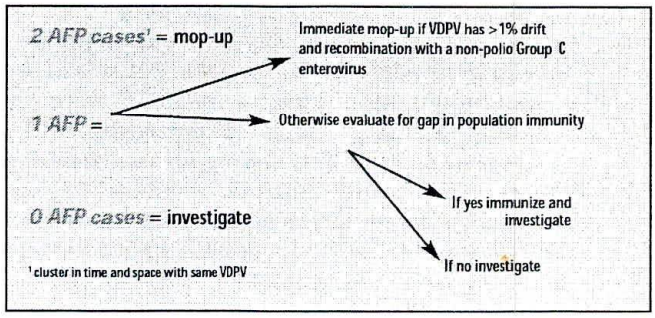
"Risk category"	Risk	Frequency	Estimated global annual burden*
Risks of polio paralysis from continued use of oral polio vaccine	VAPP	1 in 2.4 million doses of OPV administered	250–500 cases per year
	cVDPV	One episode per year in 1999–2001 (Haiti, Madagascar, the Philippines,)	Approx. 10 cases per year (total of 29 cases in three years)
	iVDPV	19 cases since 1963, with 4 continuing to excrete; no secondary cases	<1 case per year
Risks of paralysis from mishandling of wild poliovirus	Inadvertent release from an IPV manufacturing site	One known event in early 1990s	No cases
	Inadvertent release from a laboratory	None to date	
	Intentional release	None to date	

* Study and data collection is ongoing for a
** Under current polio immuniza

Vaccine derived poliovirus (VDPV) investigation and response guidelines

USING the data and experience available at the end of 2002, the TCG endorsed interim guidelines for responding to the isolation of VDPVs. These guidelines emphasize the need for a mop-up response to (a) any AFP cases from which a VDPV is isolated which has greater than 1% genetic drift and recombination with a group C non-polio enterovirus and (b) any cluster of AFP cases from which a common VDPV is isolated (*see below*). The guidelines state that in all other instances the first response should be an appropriate epidemiological, clinical, immunologic and virologic investigation. If there is an identified immunization coverage gap, whether geographic or demographic, this should be addressed while the investigation is ongoing. These guidelines will be updated as additional information becomes available. The WHO guidelines on response to wild poliovirus are also being updated to include the VDPV investigation and response guidelines. ◆

Decision-tree for responding to the isolation of a vaccine-derived poliovirus (VDPV)



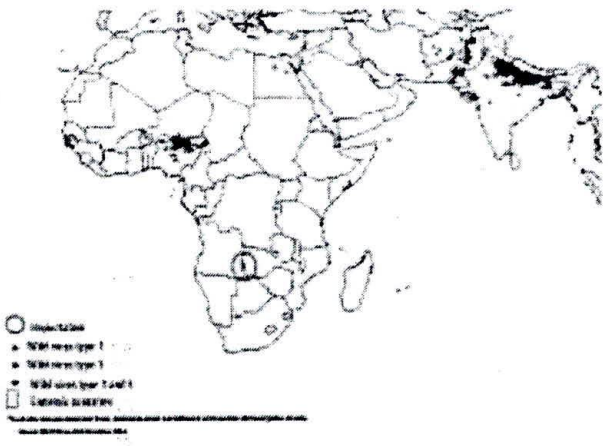
AFP and polio reporting, year-to-date (data received at WHO Geneva as of 03 December 2002)

	2001 (as of 04 December 2001)				2002 (as of 03 December 2002)			
	Non-polio AFP rate	Adequate stool specimens	Polio confirmed cases	Wild polio virus cases	Non-polio AFP rate	Adequate stool specimens	Polio confirmed cases	Wild polio virus cases
African Region	2.9	72%	70	39	2.9	83%	164*	151
Region of the Americas	1.24	76%	10*	0	0.98	93%	0	0
Eastern Mediterranean Region	1.81	84%	157	110	2.25	88%	99	99
European Region	1.32	90%	3**	2	1.17	83%	0	0
South-East Asia Region	1.53	84%	178	178	1.63	84%	1211	1211
Western Pacific Region	1.19	87%	0	0	1.2	88%	0	0
Global total	1.46	82%	418	329	1.79	85%	1474	1461

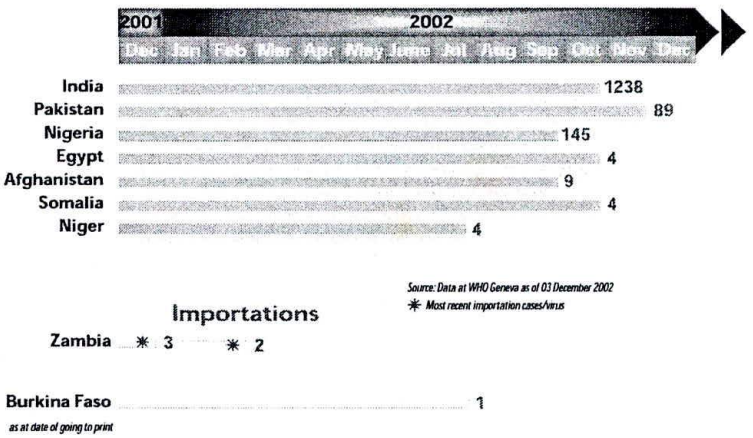
* *Vaccine derived polio virus. In 2001, in the American Region, in Dominican Republic 3 cases and in Haiti 7 cases. In 2002, in the African region, in Madagascar, 4 cases*
** *Importation of wild poliovirus into the region*

Wild poliovirus map

03 December 2001 – 02 December 2002



Timeline: total wild poliovirus and date of most recent wild poliovirus by country as of 03 December 2002



Source: Data at WHO Geneva as of 03 December 2002
✳ *Most recent importation cases/virus*

as at date of going to print

NIDs calendar for selected countries

Region	Country	January 2003 Type of activity Intervention	February 2003 Type of activity Intervention	March 2003 Type of activity Intervention
AFRO	Cameroon	21-Jan / SNIDs / OPV Round 2		
	Central African Republic	21-Jan / NIDs / OPV Round 2		
	Chad	21-Jan / NIDs / OPV Round 2		
	Equatorial Guinea	21-Jan / NIDs / OPV Round 2		
	Gabon	21-Jan / NIDs / OPV Round 2		
	Nigeria	25-Jan / NIDs / OPV Round 1		00-Mar / SNIDs / OPV Round 2
EMRO	Afghanistan			00-Mar / SNIDs / OPV Round 1
	Egypt			00-Mar / NIDs / OPV Round 1
	Iraq			00-Mar / SNIDs / OPV Round 1
	Somalia		00-Feb / NIDs / OPV Round 1	00-Mar / NIDs / OPV Round 2
	Pakistan	28-Jan / SNIDs / OPV Round 1		03-Mar / NIDs / OPV Round 1
	Yemen	00-Jan / NIDs / OPV Round 2		
SEARO	Bangladesh			29-Mar / NIDs / OPV Round 1/ Vit A
	India	05-Jan / NIDs / OPV Round 1	09-Feb / NIDs / OPV Round 2	
	Maldives	00-Jan / SNIDs / OPV Round 2		
	Myanmar	12-Jan / NIDs / OPV Round 2		
	Nepal	04-Jan / NIDs / OPV Round 1	08-Feb / NIDs / OPV Round 2	
	Thailand	21-Jan / SNIDs / OPV Round 2/ Vit A		

This calendar reflects information known to WHO/HQ at the time of print. Some NIDs dates are preliminary and may change; please contact WHO/HQ for up-to-date information.

Dozens of US Rotary club members help immunize millions of children against polio in Africa

Photo: © Rotary International/J.M. Giboux

Nigerian Rotarian immunizes a child in northern Nigeria. This part of the country continues to have the highest levels of transmission of wild poliovirus in Africa.

IN support of Rotary's goal of a polio-free world by 2005, more than 150 Rotary members from the United States flew across the Atlantic to participate in national immunization days (NIDs) in Ethiopia, Ghana and Nigeria in October and November 2002. American Rotarians teamed up with their local counterparts to help with vaccine delivery, volunteer recruitment and transportation, and community mobilization and education. Seattle-based Rotary Club member Ezra Teshome led 85 Rotary members to his home country of Ethiopia. "It was moving to see the families' hope at the NIDs," said Teshome. "Some had walked for miles and miles to get their children vaccinated." Brad Howard of the Oakland California Sunrise Rotary Club brought 34 Rotarians to Ghana. "Something like this gives people the chance to make a difference one person at a time," he said. *As the top private sector contributor to polio eradication, Rotary has given US$ 182 million to eradicate polio on the African continent and committed more than US$ 500 million worldwide.* ◆

"Trick-or-Treat for UNICEF" raises funds for polio

THE United States Fund for UNICEF is donating all the proceeds from its 52nd annual "Trick-or-Treat for UNICEF" campaign to the global effort to eradicate polio. Every 31 October in the United States, kids dress up in celebration of Halloween and go door-to-door to "Trick-or-Treat" for sweets and funds for UNICEF. The US Fund's "Trick-or-Treat" for UNICEF anticipates raising more than US$ 4 million, from the 2002 campaign, including US$ 850 000 from the United Nations Foundation, and it was one of the Fund's most extensive efforts involving a record number of corporate partners and distribution of 20 million donation boxes – more than four times the number distributed in 2001.

The Fund's regional offices worked to educate children and adults about polio and its ongoing effects in the remaining endemic countries. US mayors officially declared 31 October as "Trick-or-Treat for UNICEF" day in 144 American cities. The campaign gave children in schools, youth groups and clubs the chance to help raise money for the Global Polio Eradication Initiative, knowing that every dollar they collected would help immunize children against polio. ◆

GAVI breakout session on polio

THE polio eradication programme has enhanced vaccine delivery systems and capacity in dozens of countries with equipment, institutional arrangements such as the laboratory network and more than 2500 skilled people. Participants at the November 2002 Partners' meeting of the Global Alliance for Vaccines and Immunization (GAVI) in Dakar, Senegal joined a breakout session to discuss the potential future roles of this polio infrastructure. EPI managers from several countries including Nigeria and Bangladesh noted the importance and value of maintaining capacity to further strengthen immunization services. The group recommended that countries have a strong voice in determining the best ways to ensure the polio infrastructure is used to forward the GAVI objective of 80% routine immunization coverage in 80% of districts in every country. ◆

Photographer Salgado urges support for Horn of Africa polio activities

PHOTOGRAPHER Sebastião Salgado, who has worked tirelessly with polio partners to document eradication efforts around the world, made the case for support to polio activities in the Horn of Africa at a Polio Partners' meeting in Nairobi in September. Salgado was the keynote speaker at the gathering of partner agencies, donor and country representatives, convened to address the challenges in Ethiopia, Somalia and Sudan.

Along with ensuring access in conflict-affected areas and maintaining local political commitment, securing the US$ 50 million required for polio activities between 2003 and 2005 in the region was considered the key challenge.

Ambassadors from Belgium, Ethiopia and the United States, representatives from various countries, international organizations, non-governmental organizations (NGOs), the US Centers for Disease Control and Prevention (CDC) and Rotary International participated in this successful event. ◆

Country focus

Pakistan – The model for quality work

SINCE 2000, Pakistan's polio eradication programme has steadily improved. With continued strong work it may be the first of the remaining "high transmission" countries to stop transmission. In contrast to Nigeria and India where cases have increased five-fold in 2002, new cases in Pakistan have declined by 10% and transmission has been reduced significantly in the traditional reservoir areas. The TCG emphasized that Pakistan's programme is strong overall, and that **success is due mainly to continued multiple rounds of high-quality SIAs** particularly in the face of decreasing caseloads and virus lineages. Other strong areas of the programme include the careful analysis and use of surveillance data to inform programme decisions and diligent follow-up of independent monitoring data prior to and following SIAs. Government commitment is high at national, provincial and, increasingly, district levels. To stop transmission, the TCG **endorsed Pakistan's SIA plans for four rounds of NIDs and four rounds of subnational immunization days (SNIDs) in 2003** along with the strategy to concentrate on identified reservoir and high-risk areas. ◆

Nigeria – political ownership key

WHILE an increase in reported cases in 2002 (145 to date) over 2001 (56 total) is partly due to improvements in surveillance quality, transmission in several states of northern Nigeria remains intense. Despite the increase, however, cases have been geographically restricted, with just seven states, all in northern Nigeria, reporting over 90% of cases, and two states, Kano and Kaduna, with half of the total for the country. Virological evidence demonstrates that many of the strains causing disease in prior years are no longer circulating, and there are a limited number of strains remaining in circulation in 2002.

The TCG noted data showing that until very recently most children under five years of age had received insufficient (<3) doses of OPV in several of the remaining endemic states. **Although data from the September SIAs indicate improvement, the states of Kano and Kaduna in particular need to ensure high-quality SIAs, as the current coverage rates, while at 75–80%, are still too low to interrupt transmission of wild poliovirus.** The TCG concurred with the national plan for three rounds of high-quality SNIDs in the highest risk states in the first half of 2003. The TCG also emphasized that the high level of government commitment at national level needed to be matched at state and local government Area levels. ◆

TCG Review

PROGRESS & CONCERNS

The November 2002 interim meeting of the TCG reviewed eradication activities in the remaining polio-endemic countries. The TCG recognized progress in all countries and singled Pakistan out for praise in particular. However it had "grave concerns" about the possibility of stopping transmission within 12 months in Egypt and India, Nigeria.

TCG comparison of eradication activities in the three "high-transmission" countries in 2002

Key activities	*Pakistan*	*Nigeria*	*India*
Number of rounds of large-scale SIAs in 2002	4 NIDs, 4 SNIDS	2 NIDs, 4 SNIDS	2 NIDS, 1 SNID
Management of operations	Joint national/ international teams at national, state and substate levels	Joint national/ international teams at national and state levels	Joint national/ international teams at national level
Monitoring of SIA quality	Independent 3rd party monitoring began in early 2002	Independent monitoring began in late 2002	Independent monitoring began in late 2002

India – Wanted: higher quality, quantity SIAs

HISTORICALLY, India's progress in polio eradication has been unprecedented in the world, with the virus circulation drastically reduced from almost every district in the country to two states in just a few years. The most progress occurred in 1999–2000, when India undertook 10 national or subnational immunization campaigns in a 24-month period. In contrast, only three large-scale SIAs took place in 2001. The result? A five-fold increase in cases in 2002 (1211 at 4 December 2002) over 2001 (just 268 for the year). These cases are primarily (75%) centred in Uttar Pradesh (UP) – the major reservoir for polio in India and the world. At year's end, the area with the highest transmission in western UP had reseeded many other districts, including Gujarat and West Bengal which had been free of endemic polio in 2001. Data shows this major outbreak is the result of gaps in the quality of immunization activities, and that minority populations in western Uttar Pradesh are the most severely affected by these gaps. **The Global TCG considers that India – the state of Uttar Pradesh in particular – constitutes the greatest risk to the achievement of global polio eradication.**

Moving forward, **the TCG is recommending an increased number of better quality SIA rounds**, including four rounds in the areas of high-intensity transmission in the first half of 2003. These must reach every child under five years of age, particularly children in minority populations. The TCG also recommends sufficient high-quality staff to manage polio eradication at national, state and substate levels, and the formation of substate operational groups to manage polio eradication activities across a number of districts, with the support of partner agencies. ◆

Resource mobilization

Polio firmly on the agenda for Africa-Europe discussions

IN the final communiqué of the Second Africa-Europe Ministerial meeting held in Ouagadougou, Burkina Faso in November, African Foreign Affairs ministers noted the significant progress made toward polio eradication in Africa and called on European Union Member States to mobilize adequate funds to finish the job.

The inclusion of polio eradication in the Ouagadougou communiqué sets the stage for polio eradication to be discussed at the European Union-African Union Summit in April and for Polio Advocacy Group follow up with European governments for additional funding for polio eradication in Africa. ◆

Recent donations:*

Aventis Pasteur:	US$ 3 million worth of oral polio vaccine for 2002–2005 in Africa
Canada:	US$ 32 million for 2003–2005 polio eradication activities in Africa
Japan:	US$ 9.6 million for oral polio vaccine in Pakistan
Rotary International:	US$ 14.5 million for 2002–2003 polio activities in key countries and regions, including India, Nigeria and Pakistan
Saudi Arabia:	US$ 100 000 for polio activities in EMRO countries
The Netherlands:	US$ 8.2 million for oral polio vaccine and surveillance activities in Bangladesh in 2003–2004
United Kingdom:	US$ 27.4 million in global funding, with a focus on Africa, and for activities in Nepal

The Global Polio Eradication Initiative expresses its gratitude to all Partners.
Donations announced since Polio News: 16 September 2002

Photo: © Jeanne Parker/V. Ines

David Williams, CEO of Aventis Pasteur, signed on for the final push to eradicate polio during a ceremony with WHO Director-General Gro Harlem Brundtland and UNICEF's Executive Director Carol Bellamy at the UN Secretariat in New York in November 2002.

Aventis Pasteur donates 30 million doses of polio vaccine

AS West African countries launched a massive co-ordinated effort to immunize 60 million children against polio, the world's largest vaccine manufacturer, Aventis Pasteur, donated 30 million doses of oral polio vaccine to the Global Polio Eradication Initiative. The donation – the third by Aventis Pasteur – is valued at US$ 3 million, and makes Aventis Pasteur the longest-standing corporate partner of the Initiative.

The Aventis Pasteur donation is already making a difference, with almost 3 of the 30 million doses earmarked for November's polio immunization campaign in Liberia.

At a recent signing ceremony attended by David J. Williams, President and Chief Executive Officer of Aventis Pasteur, Gro Harlem Brundtland, Director-General of WHO and Carol Bellamy, Executive Director of UNICEF, Mr Williams signed a banner pledging Aventis's commitment to end polio.

"The Initiative has already made tremendous progress and we admire the remarkable work done by WHO, Rotary International, CDC, UNICEF and millions of volunteers around the world," Williams said. "This donation is just one example of Aventis Pasteur's commitment. We are very proud of our involvement with the Global Polio Eradication Initiative." ◆

Materials available:

The report of the November 2002 interim meeting of the Global Technical Consultative Group for poliomyelitis eradication is available electronically in English.

The *Progress 2001* (WHO/POLIO/02.08) report is now available in French.

To register to receive Polio News, either in print or by email, or to receive any of the items above, email: polioepi@who.int or call +41 22 791 2657.

Many polio documents are available on the web site at:
www.polioeradication.org

Please fill out this response coupon and return it to Polio News, EPI, Department of Vaccines and Biologicals, Document Centre, World Health Organization, CH-1211 Geneva 27, if you would like to continue receiving this publication.

I would like to receive this publication regularly.

Name: .....

Institution: .....

Address: .....

.....

.....

Please also send this publication to:

Name: .....

Institution: .....

Address: .....

.....

.....

Forthcoming events 2003

Date	Event	Venue
20–28 January	WHO Executive Board	Geneva, Switzerland
4–6 February	Rotary IPPC meeting	Evanston, USA
25–27 March	AFRO Regional Certification Committee	Yaounde, Cameroon
24–25 April	Global TCG	Geneva, Switzerland

WHO
Polio News

All comments and feedback on Polio News should be sent to:
Department of Vaccines and Biologicals, WHO, Geneva.
Tel.: +41 22 791 3219
Fax: +41 22 791 4193
Email: polioepi@who.int
Web site: http://www.polioeradication.org

Design & Layout: ITV Com Sarl, Morges, Switzerland

WHO

Polio News

Eradication

Rotary and CDC special edition (see pages 4-5)

Issue 16 – September 2002

A Newsletter for the Global Polio Eradication Initiative
Department of Vaccines & Biologicals
World Health Organization
In association with Rotary International,
Centers for Disease Control and Prevention
and the United Nations Children's Fund

Supplementary immunization in polio-free areas
Page 2

Greatly missed: Dr Taky Gaafar
Page 6

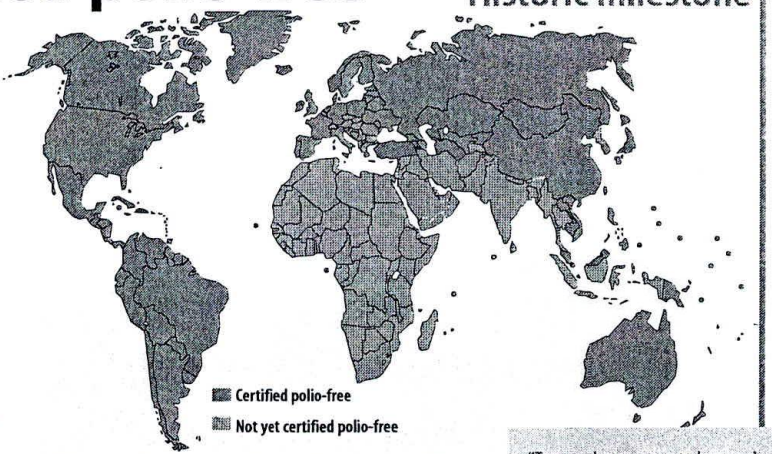
European Region certified polio-free

Historic milestone

FOR some 870 million people living in the 51 Member States of the European Region of the World Health Organization (WHO), June 2002 heralded the most important public health milestone of the new millennium. The historic decision to certify the Region polio-free was announced at a meeting of the European Regional Commission for the Certification of Poliomyelitis Eradication (RCC) in Copenhagen on 21 June. Certification of the Region, which stretches from Iceland to Tajikistan and includes the Russian Federation, confirms the potency and transferability of polio eradication strategies.

The European Region has been free of indigenous poliomyelitis for over three years, in the presence of certification-standard surveillance. The region's last case caused by an indigenous wild poliovirus occurred in eastern Turkey in November 1998, when a two-year-old unvaccinated boy was paralysed.

Poliovirus imported from polio-endemic countries remains a threat to the region. In 2001 alone, there were three polio cases among Roma children in Bulgaria and one non-paralytic case in Georgia, all caused by poliovirus originating in south Asia. At the certification meeting, Sir Joseph Smith, Chairman of the RCC cautioned that, "*Throughout the European Region, ongoing vaccination and surveillance is vital. The risk of poliovirus being imported into Europe will continue until we eradicate polio globally.*"



Certification of the European Region means over half the countries of the world – 115 countries and areas – are now certified polio-free. The European Region is the third of the six WHO regions to be certified – the Americas and the Western Pacific were certified in 1994 and 2000 respectively.

"To get where we are today required the full commitment and cooperation of each of our 51 Member States, the hard work of public health workers in the field and the firm support of international partners in coordination with WHO."
Dr Marc Danzon
WHO Regional Director for Europe
21 June 2002

In addition to maintaining high immunization coverage, surveillance and the ability to respond to imported cases, European countries are now cataloguing all laboratory stocks of poliovirus as part of the global plan to ensure effective containment in a polio-free world. ◆

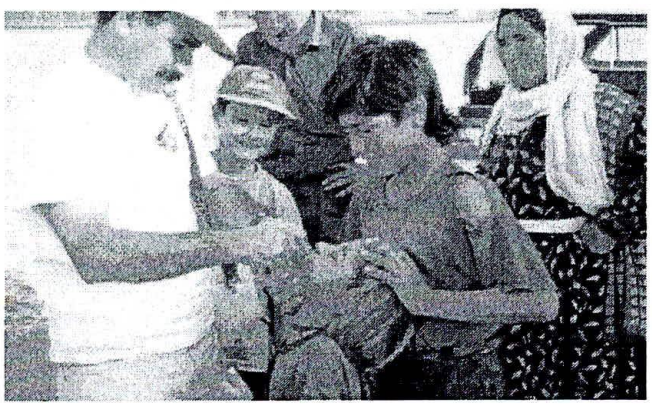
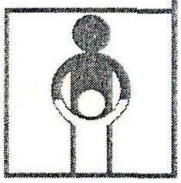


Photo: WHO/EURO

Coordinated national immunization campaigns, known as Operation MECACAR, were instrumental in achieving a polio-free European Region. MECACAR involved 18 polio-endemic countries and areas in the European and Eastern Mediterranean Regions of WHO. The synchronization of immunization among neighbouring countries has become a model for eradicating the disease globally.

G8 leaders commit to raising funds to eradicate polio by 2005

AFRICA was a centrepiece of this year's G8 Summit, held on 26-27 June in Kananaskis, Canada. With the Africa Action Plan, G8 leaders responded to the New Partnership for Africa's Development (NEPAD) launched by African leaders last year. Health is one of the components of the plan, and polio was prominently featured. Jean Chretien, Prime Minister of Canada and G8 Summit Chairperson, summarized the outcomes of G8 discussions: "*In addition to our ongoing commitments to combat (other diseases), we committed to provide sufficient resources to eradicate polio by 2005*". ◆



See back page for further details on the G8 pledges.

Technical tips

Supplementary immunization in polio-free areas

GIVEN the risk of spread of imported wild polioviruses (importations occurred into Bulgaria, Georgia and Zambia in 2001 alone), the Global Technical Consultative Group (TCG) on Polio Eradication has re-evaluated the role of supplementary immunization activities (SIAs) in polio-free areas. The TCG decided that it is important polio-free areas continue to use periodic national immunization days (NIDs) or extensive sub-national immunization days (SNIDs) to maintain population immunity. The occurrence of the recent vaccine-derived poliovirus outbreaks in the presence of low population immunity (Hispaniola, Madagascar, Philippines – *see box*) provides further argument for achieving and sustaining high immunization coverage, ideally through routine immunization services.

Consequently, the seventh meeting of the Global TCG recommended:

- *Polio-free countries which border endemic areas, or have very low immunization coverage,* should continue to conduct NIDs or SNIDs, as appropriate, on an **annual** basis.
- *Countries which have been polio-free for at least three years, but have not achieved or maintained a level of ≥90% routine immunization of infants with OPV* (OPV3 coverage), should continue to conduct NIDs at least **every three years**, to prevent the accumulation of susceptibles and protect against the importation of wild polioviruses. In larger countries, where appropriate, SNIDs should be conducted to cover those states or provinces with lower than 90% coverage. ◆

Madagascar-cVDPV

Surveillance for acute flaccid paralysis (AFP) in Madagascar has detected a cluster of four cases of paralytic poliomyelitis from which type-2 vaccine-derived polioviruses have been isolated. Preliminary data indicate that these patients, residing in the Tolagnaro district of Toliara province in southeastern Madagascar, had onset of paralysis between 20 March and 12 April 2002. None of the children affected was fully vaccinated. Vaccination coverage data suggest that during 1999, 37% of children aged under one year had received three doses of OPV. The genetic sequencing studies on these viruses are compatible with an outbreak of paralytic polio due to a circulating vaccine-derived poliovirus (cVDPV).

In July, a joint mission by the Ministry of Health, the Pasteur Institute of Madagascar, WHO and UNICEF in Madagascar recommended that countrywide NIDs be undertaken in September and October 2002, using a door-to-door strategy. Further NIDs are planned in spring 2003, after the rainy season, in Toliara and other districts at risk of poliovirus transmission.

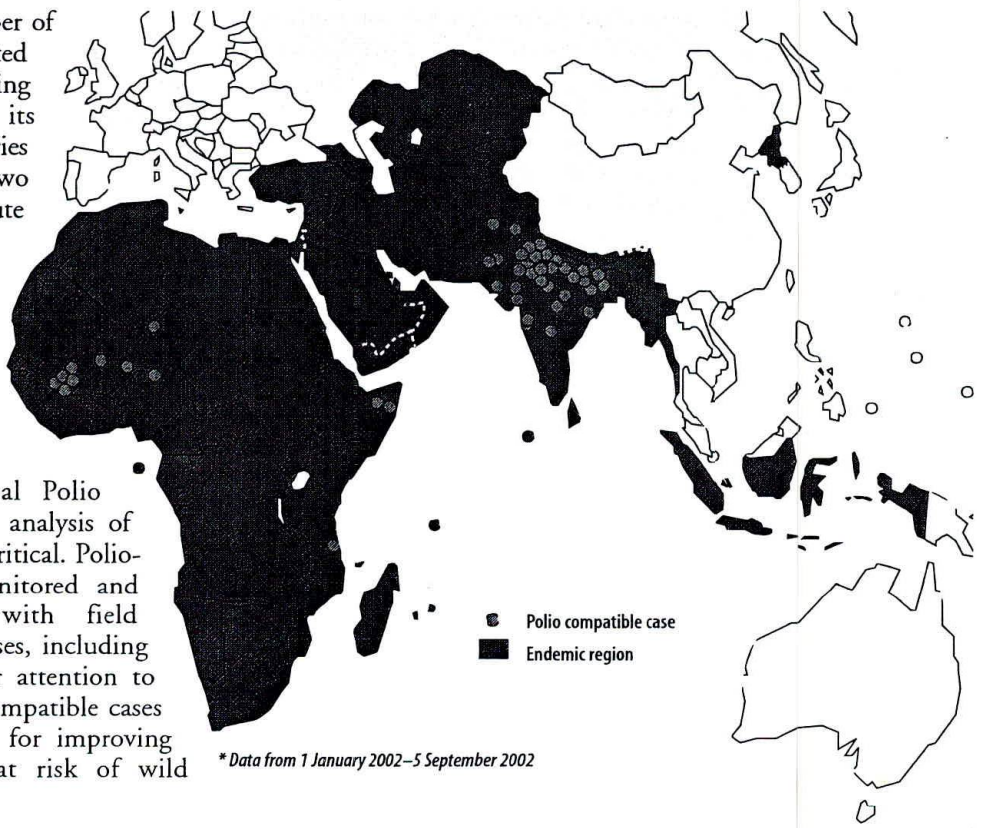
To read the WER/MMWR report, visit www.cdc.gov/mmwr/preview/mmwrhtml/mm5128a5.htm

Polio compatible cases

RECOGNIZING the high number of polio compatible cases reported in 2001, at its seventh meeting the Global TCG reaffirmed its recommen-dations that all countries should maximize efforts to obtain two adequate specimens from every acute flaccid paralysis (AFP) case, prioritize investigation and follow up of cases with inadequate specimens, and ensure all potentially compatible cases are referred to an appropriately trained expert group for classification within 90 days of onset.

At this stage of the Global Polio Eradication Initiative, the careful analysis of data on polio-compatible cases is critical. Polio-compatible cases should be monitored and mapped at least monthly, with field investigations of all compatible cases, including active case search, with particular attention to clusters of cases. Data on polio compatible cases should be used to identify areas for improving surveillance quality and areas at risk of wild poliovirus circulation. ◆

Reported polio compatible cases in 2002*



** Data from 1 January 2002–5 September 2002*

See Polio News Issue 12, July 2001 and Issue 14, February 2002, respectively, for further information on classifying AFP cases and the role of expert groups for case classification; see the TCG's full recommendations on polio-compatible cases in the seventh meeting report. For electronic copies please contact polioepi@who.int or Tel.: +41 22 791 3219.

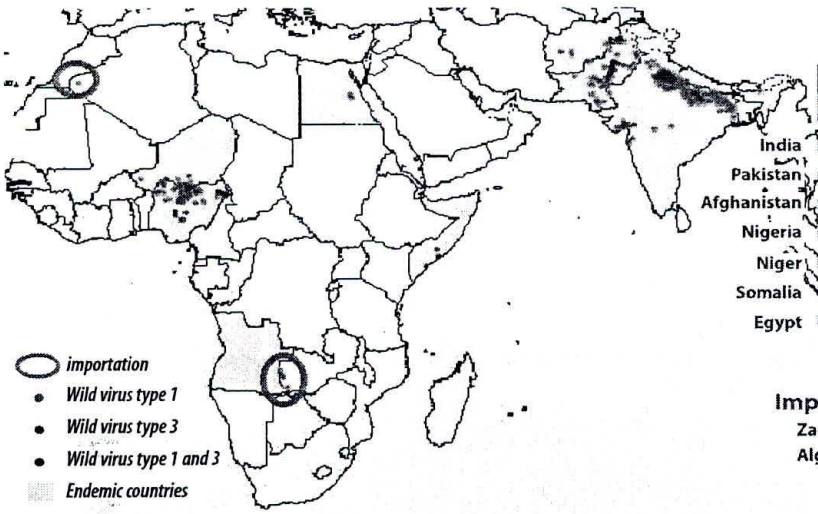
AFP and polio reporting year-to-date comparison of 2001-2002

	2001 (as of 10 September 2001)					2002 (as of 10 September 2002)				
	Non-polio AFP rate	Adequate stool specimens	Confirmed polio cases	Wild polio virus cases	Pending cases	Non-polio AFP rate	Adequate stool specimens	Confirmed polio cases	Wild polio virus cases	Pending cases
African Region	2.80	71%	159	17	780	2.80	83%	106	92	N/A
Region of the Americas	1.11	77%	9*	0	456	0.93	90%	0	0	395
Eastern Mediterranean Region	1.90	83%	80	49	511	2.14	88%	41	41	413
European Region	1.12	82%	3**	2	252	1.32	83%	0	0	384
South-East Asia Region	1.41	84%	76	76	1 443	1.43	85%	407	407	1 626
Western Pacific Region	1.19	87%	0	0	1 030	1.19	87%	0	0	349
Global total	1.38	81%	327	144	4 472	1.70	85%	554	540	3 167

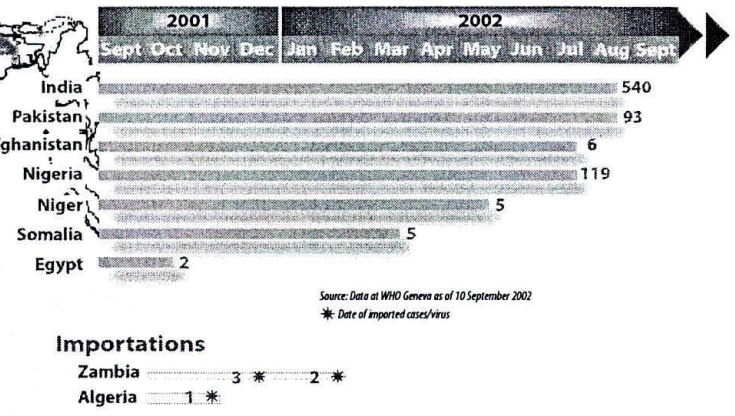
** Vaccine derived poliovirus*
*** Importation of wild poliovirus*

Wild poliovirus map

10-Sept-2001 to 10-Sept-2002



Timeline: total wild poliovirus and date of most recent wild poliovirus by country from 10 Sep 2001 to 09 Sep 2002



NIDs calendar for selected countries

Region	Country	Oct 2002 Type of activity Intervention	Nov 2002 Type of activity Intervention	Dec 2002 Type of activity Intervention
AFRO	Central African Republic			17-Dec / NIDs / OPV Round 1 / Vit A
	Chad		9-Nov / SNIDs / OPV	17-Dec / NIDs / OPV Round 1 / Vit A
	Equatorial Guinea			17-Dec / NIDs / OPV Round 1 / Vit A
	Eritrea		2-Nov / NIDs / OPV Round 1/Vit A	21-Dec / NIDs / OPV Round 2
	Ethiopia	25-Oct / NIDs / OPV Round 2		6-Dec / NIDs / OPV Round 3/ Vit A
	Madagascar	30-Oct / NIDs / OPV Round 2		
	West African Block* & Nigeria	5-Oct / NIDs / OPV Round 1/Vit A	9-Nov / NIDs / OPV Round 2	
EMRO	Afghanistan	22-Oct / NIDs / OPV Round 4		17-Dec / SNIDs / OPV Round 3
	Egypt	1-Oct / NIDs / OPV Round 1	1-Nov / NIDs / OPV Round 1	
	Somalia	1-Oct / SNIDs / OPV Round 3		16-Dec / NIDs / OPV Round 2
	Sudan	29-Oct / NIDs / OPV Round 1		
	Southern Sudan	**7-Oct / SNIDs / OPV Round 5	4-Nov / SNIDs / OPV Round 6	
	Pakistan	23-Oct / NIDs / OPV Round 4		
SEARO	India		17-Nov / SNIDs / OPV Round 2	

**The West African Block is Benin, Burkina Faso, Cameroon, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Senegal, Sierra Leone and Togo.*
This calendar reflects information known to WHO/HQ at the time of print. Some NIDs dates are preliminary and may change; please contact WHO/HQ for up-to-date information.
***At time of print, the Southern Sudan SNIDs were suspended due to flight restrictions.*

Gates Foundation recognizes Rotary for its critical advocacy role

Photo: Rotary International

Luis Vicente Giay, Chairman of the Rotary Foundation of Rotary International, receives the Gates award from Bill Gates Senior, President of the Bill & Melinda Gates Foundation.

ROTARY'S efforts to eradicate polio were recently honoured with the US$ 1 million 2002 Gates Award for Global Health from the Bill & Melinda Gates Foundation.

During the award ceremony on 30 May, Bill Gates Sr, President of the Foundation said, "What has been achieved since Rotary International courageously committed to eradicate polio defies description. Every time we see a world leader administering polio vaccine to a child, or hear about a war being stopped somewhere so children can be vaccinated, we can thank Rotary for demonstrating how much can be accomplished when a group selflessly uses every ounce of the political capital at its disposal to improve the health of the world's poorest children."

As the world's first and one of the largest humanitarian service organizations with 1.2 million members, Rotary is the lead private sector contributor and volunteer arm of the global partnership dedicated to eradicating polio.

In 1985, Rotary created PolioPlus – a programme to immunize all children against polio by Rotary's 100th anniversary in 2005. To date, Rotary has committed more than US$ 493 million to the protection of two billion children in 122 countries.

In addition, Rotary's Polio Eradication Advocacy Task Force has played a major role in decisions by donor governments to contribute over US$ 1.5 billion to the effort. This year, in an effort to help close the funding gap, Rotary is embarking on its second membership fundraising drive, entitled *Fulfilling Our Promise: Eradicate Polio,* with the goal of raising an additional US$ 80 million for polio eradication. Rotary and the United Nations Foundation are also collaborating in a joint appeal for funding from private corporations, foundations and philanthropists to help secure urgently needed funds by the end of 2002. ◆

Rotary recognizes polio eradication 'champions'

AS part of its ongoing advocacy efforts, Rotary publicly recognizes world leaders who have made outstanding contributions to global polio eradication. Eveline Herfkens, the former Minister for Development Cooperation of the Netherlands, was presented with the *Polio Eradication Champion Award* on 7 May 2002, by Luis Vicente Giay, Chairman of the Rotary Foundation of Rotary International, for her leadership in securing US$ 110 million in contributions from the Netherlands Government to support polio eradication.

Rotary also presented key members of Congress in the United States with the Polio Eradication Champion Award on 15 May 2002, acknowledging their ongoing support of the polio eradication initiative. In the 2002 fiscal year, Congress appropriated US$ 129.9 million to the global polio eradication effort. First time recipients of the award include: Senator Richard J. Durbin, (D-IL), Rep. Maurice D. Hinchey (D-NY), Rep. Benjamin Gilman (R-NY), Rep. Mark Steven Kirk (R-IL), Rep. John Peterson (R-PA), and Rep. Michael McNulty (D-NY). Past recipients were also honoured for their continued support. Other leaders who have been honoured with this award include the former United States President William Jefferson Clinton, former Prime Minister of the United Kingdom Rt. Hon. John Major, First Lady of Egypt Mrs Suzanne Mubarak and UN Secretary-General Kofi Annan.

An international profile

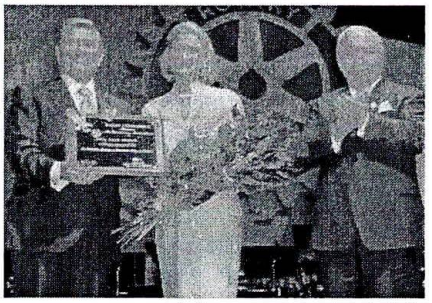


Photo: Rotary International

At Rotary's Convention, Nane Annan, the lawyer and artist married to UN Secretary-General Kofi Annan, spoke on "The Importance of Volunteers in Today's World." Following her address, Rotary International President Richard King and Chairman of the Rotary Foundation Luis Vicente Giay presented her with the Rotary Award for Humanitarian Service.

MORE than 18 000 Rotary club members from 125 countries gathered in Barcelona for Rotary's annual convention this June. Despite their different political, cultural, and historical backgrounds, a common mission united Rotarians: promoting peace and building better communities. The convention included a focus on worldwide health and polio eradication, where Rotary club members shared best practices of working with governments and other nongovernmental organizations. *The convention included the election of the following new Rotary leaders:*

- Bhichai Rattakul of Thailand took office as the new President of Rotary International on 1 July 2002. A Member of Parliament for nine terms since 1969 and Leader of the Democrat Party, he has served his country as Foreign Minister, Deputy Prime Minister, Speaker of the House of Representatives and President of the Parliament.
- Glen W. Kinross of Australia is the new Chairman of The Rotary Foundation of Rotary International. As a member of the International PolioPlus Committee, Mr. Kinross is dedicated to the global effort to eradicate polio.

Spearheading partners:
Centers for Disease Control and Prevention

CDC technical partner in polio eradication

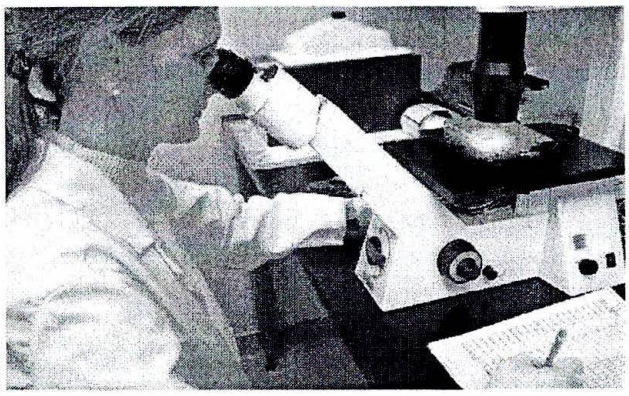


Photo: CDC

Deborah Moore microbiologist examines cultures for the presence of poliovirus at the CDC polio laboratory in Atlanta, United States.

THE Atlanta-based US Centers for Disease Control and Prevention (CDC) has been a spearheading partner in the global polio eradication initiative since 1988. CDC's niche in the initiative lies in its technical support and funding for large supplies of oral polio vaccine (OPV) and operational costs for mass immunization campaigns.

CDC is perhaps best known for its wide-ranging technical support. For example, the poliovirus laboratory at CDC functions as one of the global specialized laboratories in the polio laboratory network. Among the four spearheading partners, CDC works as the "virus detective," using its state-of-the-art virological surveillance expertise, or genetic fingerprinting, to identify the strain of poliovirus involved in an outbreak and pinpoint its exact geographical location and origin. Each year CDC scientists at the polio laboratory test more than 6000 specimens and isolates from around the world.

CDC also assigns short- and long-term technical experts to WHO and UNICEF offices worldwide to provide epidemiologic, programmatic, and managerial assistance to support surveillance and polio immunization campaigns in developing countries. These include members of the Stop Transmission of Polio (STOP) teams since 1999 (see below) and public health scientists who analyse surveillance data and investigate outbreaks of polio, especially in areas within or bordering polio-free zones. Most recently, CDC staff members have conducted polio outbreak investigations in Bulgaria and the Philippines.

In addition, CDC is one of the major funders for the purchase of OPV used in supplementary immunization campaigns such as NIDs. In the fiscal years of 2001 and 2002, CDC contributed approximately US$ 115 million through UNICEF for this purpose. CDC also provides technical resources to assure that the purchased vaccine is targeted to achieve polio eradication objectives. ◆

SAFER · HEALTHIER · PEOPLE™

STOP programme: providing field support where it's needed most

"OUR job is to help strengthen surveillance networks for polio . . . we have to know where the disease is and where it isn't, and we have to move fast. It's the most exciting job I've ever done," wrote a member of the first Stop team sent from CDC in 1999. This captures the essence of what the STOP programme is all about: rapidly deploying human resources to the field to support national polio eradication programmes.

Based on the model used by smallpox eradication teams in the 1960s and 1970s, STOP team members collaborate with local and national counterparts from the Ministry of Health, WHO, and UNICEF. Their duties include:

- supporting, conducting, and evaluating active surveillance for acute flaccid paralysis (AFP);
- assisting with polio case investigations and follow-up, and
- assisting with planning, implementing, and evaluating supplemental immunization activities, including house-to-house mop-up operations.

Each day is different. Team members may work with local religious leaders to overcome community rumours about the safety of OPV; train traditional healers about AFP surveillance; hire a boat to a remote island to investigate a suspected polio case; or give a presentation to health officials on immunization campaign coverage.

In partnership with WHO and Rotary, CDC launched the programme in 1999, and since then has deployed 11 teams, comprising 386 members, to 34 countries. Prior to leaving for their three-month assignments, participants receive one week of training conducted by CDC and WHO staff in Atlanta. The partnership that supports STOP has expanded from WHO, Rotary, UNICEF and CDC to also include the Canadian Public Health Association.

Perhaps one of the best tributes to the programme is the fact that after completing their field assignments, one in four team members have continued to work in polio eradication with CDC, WHO or UNICEF.

To learn more about the STOP programme, the qualifications sought, and how to apply, visit http://www.cdc.gov/nip/global/default.htm

News and announcements

Canada supports NIDs in Nigeria

As part of the social mobilization effort in preparation of the forthcoming NIDs, Mme Chretien, the First Lady of Canada, and Mrs Danjuma (representing Mrs Stella Obasanjo, who was attending the Cote d'Ivoire meeting of First Ladies) arrive at the Bamishi village in the area council of Kuje near Abuja on 5 April to attend a polio immunization session. This advocacy event coincided with the visit of the Prime Minister of Canada, Jean Chretien, to Nigeria. *Photo: © UNICEF/Noble Thalari*

De Beers flying for polio eradication

Suzanne Spencer, Head of Information and Communication at De Beers, doing a wing walk for her Day of Hope challenge, through which she raised over £1000 (around US$ 1500) for the Global Polio Eradication Initiative. Seen here on the top wing of a 1940 Boeing Stearman Bi-plane, Suzanne was wearing £100 000 (around US$ 150 000) of diamonds to gain publicity and raise awareness for the global bid to eradicate polio. *Photo © De Beers*

World Press Photo award winner: polio eradication in Eritrea

Photographer Stefan Boness won an award in the 'science and technology' category of the World Press Photo awards for his portrayal of a young girl receiving polio vaccine at a health station in the village of Dresa in Western Eritrea, taken in December 2001. *Photo © Stefan Boness/Ipon*

Obituaries

Dr Taky Gaafar, *Regional Adviser, Vaccine Preventable Diseases and Immunization (VPI), and Coordinator, Disease Surveillance Eradication and Elimination in the WHO Eastern Mediterranean (EMR) Office, passed away on 4 July in Cairo. Dr Gaafar was first associated with WHO as short-term consultant in smallpox eradication in Bangladesh in 1975 and in Somalia (1979-1981). Dr Gaafar had a long association with Alexandria University, latterly as a Professor in the Department of Public Health, Faculty of Medicine from 1985 – 1994. He actively took part in a number of WHO EMR activities during this time, including national/interregional training courses, intercountry workshops and indepth programme reviews. Dr Gaafar became Regional Adviser, VPI at WHO EMR office in January 1995. He will be sorely missed by all those who had the privilege and pleasure of working with him.*

Abdi Risak Mahmed Farah, *laboratory technician working for WHO in Somalia as Regional Polio Eradication Officer for Mudug Region, was tragically killed in a car accident on 5 May on his way back to his wife and children from a monthly meeting. His organizing skills and openness, transcending clan dimensions, had been the single most important factor in bringing NIDs to as many children as possible in this otherwise hard-to-reach area. His relentless effort in detecting AFP cases made a difference within his first few months with the programme. Working in Mudug Region is particularly challenging, as its regional town of Galkayo is the geographic centre of war-torn Somalia. Abdi Risak is greatly missed by his family, his colleagues, his community and the programme.*

Dr Sekou Victor Sangare, *former Expanded Programme on Immunization (EPI) Manager of Cote d'Ivoire, passed away on 14 June in Abidjan. Having left EPI management around two years ago, Dr Sangare undertook several assignments for the Vaccine Preventable Diseases department at the WHO Africa office as a consultant; his last assignment was a mission to the Gambia and Guinea in February 2002. He will be much missed.*

Bruno Corbé, *recent consultant to WHO in Goma, the Democratic Republic of the Congo, and long-time member of staff with Médecins Sans Frontières (MSF), died on 11 March in Martillac, France. Mr Corbé joined MSF in 1986, going to Sudan and Mozambique as a logistical expert, then to Iraq, Somalia, Afghanistan and Angola. Later at MSF headquarters, he joined missions to Bosnia, Chechnya, Rwanda and Kivu. In 1987 he launched the MSF-Logistics central purchasing offices in Lezignan. In 1993, he was appointed Logistics Director at MSF's Brussels headquarters and later, a member of the MSF-France Board of Directors and the MSF-Belgium Board.* "The influence of his work and personality are indelibly stamped on the history of MSF".

"Polio in the press"

News media

- ***Europe declared polio-free but cash shortage hampers rest of the world*** – **Agence France Presse (21.06.02)**
- ***Silent polio carrier highlights risk*** – **Georgina Kenyon, BBC Online (22.07.02) ***
- ***Polio case in Burkina Faso*** – **BBC Online (30.07.02)**

Scientific articles

- ***Chemical Synthesis of Poliovirus cDNA: Generation of Infectious Virus in the Absence of Natural Template*** – **Jeronimo Cello, Aniko V. Paul, and Eckard Wimmer, Science (11.07.02) ***
- ***Public Health Dispatch: Poliomyelitis – Madagascar, 2002*** – **Morbidity and Mortality Weekly Report (MMWR) (19.07.02)**

For copies of these and other recent articles, please contact polioepi@who.int or Tel.: + 41 22 791 3219

**The implications of these aspects of the risk assessment for post-certification immunization policy for polio will be covered in the December edition of Polio News.*

British Airways 'Change for Good' donation funds Zambia NIDs

BRITISH AIRWAYS (BA) staff travelled to Zambia at the end of July to observe the country's recent SNIDs and mop-up campaigns. A US$ 700 000 donation from BA's Change for Good/UNICEF fundraising partnership provided all of the OPV and social mobilization requirements for the July round.

High quality supplementary immunization activities were essential to ensure that virus from the five polio cases found in Zambia in 2001-2002, all importations from eastern Angola, did not reestablish poliovirus transmission in the country. Zambia's SNIDs aimed to reach at least 1 million children under the age of five.

The BA team observed the campaign at close quarters from the country's Ndola (Copperbelt) region. Gaining hands-on experience administering OPV to children, the team also joined vaccinators in the region's door-to-door campaign. Later, the importance of cross-border campaigns was underlined when the team travelled to the Zambia/Democratic Republic of the Congo border to observe joint immunization activity between the two countries.

Since 1994 BA's 'Change for Good' campaign has raised more than US$ 16 million in support of UNICEF programmes around the world. ◆

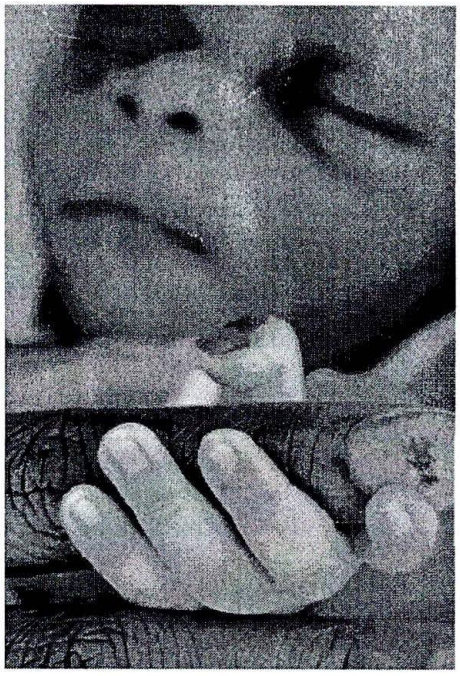


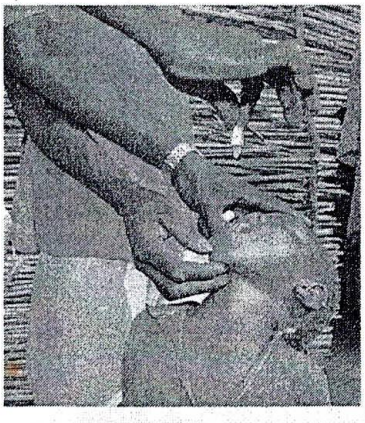
Photo © Tom Craig/UNICEF UK/02

In Chililabombwe, a town in Zambia's Copperbelt region on the country's border with the DRC, the tiny fingernail of a newborn baby is covered with harmless gentian-violet paint to indicate that she has been vaccinated against polio. Zambia's July SNIDS, funded by BA's Change for Good programme, reached over a million children.

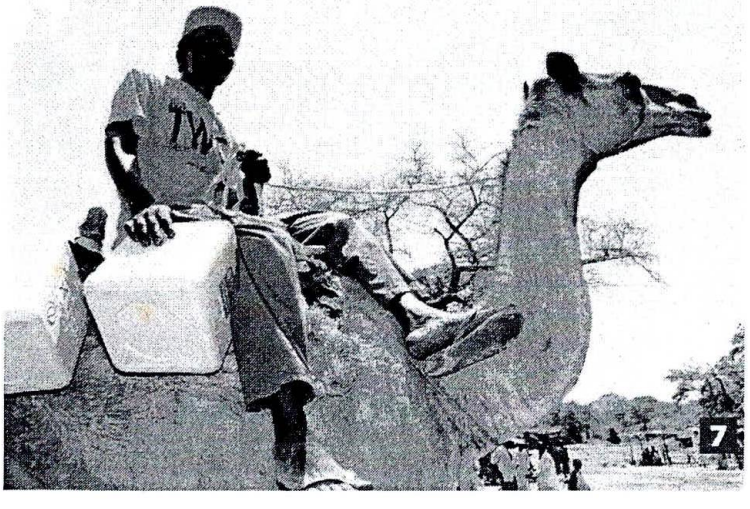
Cease-fires pave the way for direct access to children

CEASE-FIRES in two of the ten countries considered polio-endemic at the outset of 2002 have resulted in OPV reaching many children who had likely never been vaccinated before.

SUDAN: Some parts of the remote Nuba mountains, located in the central part of war-ravaged Sudan, have been inaccessible by direct UN humanitarian relief operations in the region for decades. As a result of a cease-fire signed on 19 May 2002, Initiative partners have been able to gain direct access to some areas for the first time, successfully completing three rounds of polio SNIDs in the Nuba region. Almost immediately following the cease-fire, WHO, in partnership with UNICEF, seized the opportunity to launch the immunization campaign, despite difficult logistics. Landmines severely hampered the movement of vaccination teams, and the mountainous terrain and lack of roads meant that teams frequently had to walk for over ten hours a day and climb steep mountain slopes in severe heat to access remote villages. In the villages themselves, where there is a dearth of education and health infrastructure, social mobilization efforts had to be intensified in order to explain the threat of polio and the reasons for the campaigns. Despite the difficulties, an average of 45 000 children were reached in each round.



Photos: WHO/P. Blanc



ANGOLA: The April cease-fire in Angola has led to similar success for polio eradication, providing the opportunity to vaccinate hundreds of thousands of children who had been unreachable for years due to the conflict. The discovery of Angolan children with polio paralysis just across the border in Zambia in late 2001 demonstrated the reality of wild virus transmission in eastern Angola. At that time, the possibility of conducting successful immunization activities in the east was not assured. However, the 4 April ceasefire opened the formerly inaccessible areas, allowing SNIDs and mop-up campaigns in April and May. For the June and July NIDs, logistical support from the army, nongovernmental organizations and about 30 000 volunteers meant children in 150 newly-accessible municipalities, 37 "quartering and family areas" and children in internally displaced persons camps were vaccinated against polio. In total, close to 4.5 million children were reached in Angola during the June round, and the final round of NIDs took place in late August – all synchronized with neighbouring countries.

The knowledge provided by this 'direct access' to inaccessible populations in both Sudan and Angola has a major impact on the confidence of the polio status of each country. To date, Sudan has not isolated a wild poliovirus since April 2001. Angola's last recorded virus was in September 2001, though the recent importations to Zambia suggest that transmission is ongoing in eastern Angola. With continued access and strong AFP surveillance, these countries can reach the goal of being polio-free by the end of 2002. ◆

Resource mobilization

European certification and G8 commitment provide backdrop for enhanced resource mobilization efforts

ALL levels of the polio partnership are actively working to address the Initiative's most critical issue: filling the US$ 275 million funding gap. On 21 June, as the European region of WHO was certified polio-free, WHO's Director-General, Dr Gro Harlem Brundtland, wrote an exceptional appeal to all European development ministers, citing the necessity of an extraordinary show of support for polio eradication in order to reach the goal of a polio-free world – therefore protecting the collective investment already made by the European region.

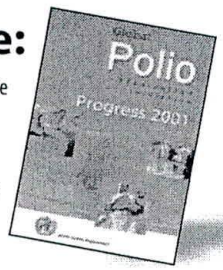
At the June 2002 G8 Summit in Kananaskis, Canada, G8 leaders pledged to fill the Global Polio Eradication Initiative's US$ 275 million funding gap as part of the Africa Action Plan. The partnership is now working with G8 member states to help to operationalize this pledge. At the Summit, Canada pledged US$ 32 million in new funding over three years. Canada and the UK, which has since committed an additional US$ 25 million, are now preparing to advocate with the other G8 countries. A meeting of the Africa Personal Representatives of the G8 leaders towards the end of this year will be the crucial forum for translating the G8 pledges into actual resources. ◆

This autumn, the document 'Estimated external financial resource requirements for 2003-2005' will be published. It will summarize the global resource requirements and highlight the budget needs for all endemic countries and countries at high risk of wild poliovirus transmission - providing the basis for resource mobilization efforts.

Materials available:

The polio eradication *Progress Report 2001* is available in English in print and electronic format.

The first edition of the *polio eradication endgame briefing pack* is available in English and French – it is also available electronically on www.polioeradication.org



Many polio documents are available on the web site at:
www.polioeradication.org

Please fill out this response coupon and return it to Polio News, EPI, Department of Vaccines and Biologicals, Document Centre, World Health Organization, CH-1211 Geneva 27, if you would like to continue receiving this publication or send an e-mail to polioepi@who.int

I would like to receive this publication regularly.

Name: .....

Institution: .....

Address: .....

.....

.....

Please also send this publication to:

Name: .....

Institution: .....

Address: .....

.....

.....

Recent donations:*	
DeBeers staff members:	US$ 32 000 raised through staff fundraising initiatives
Japan:	US$ 10.5 million to purchase OPV for Bangladesh, Ethiopia, Ghana, India, Nigeria and Sudan
Lichtenstein:	US$ 5000 of undesignated funds, allocated to Guinea Bissau for operational costs
New Zealand:	US$ 48 000 contributed to the Rotary Foundation to support activities in Indonesia
Norway:	US$ 6.8 million in undesignated funding to the global programme
Rotary International:	US$ 1.7 million for polio activities in Angola and the Democratic Republic of the Congo as well as support for CDC's STOP team programme
Rotary/United Nations Foundation (UNF) Private Sector Appeal:	US$ 3.75 million in private sector campaign donations from Wyeth, Baxter, Tellabs and Pew Charitable Trust for polio activities in Ethiopia, India, West Africa and for the African Polio Laboratory Network
Trick or Treat:	US$ 3.4 million for polio activities in Pakistan and Afghanistan, which attracted a US$ 850 000 match from the UN Foundation
United Kingdom:	US$ 7.8 million in undesignated funding

The Global Polio Eradication Initiative expresses its gratitude to all donors.
**Donations announced since Polio News 15, May 2002*

Wyeth donates US$ 1 million to Global Polio Laboratory Network

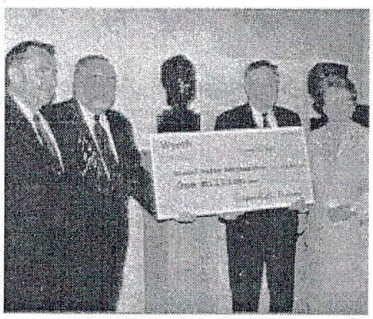


Photo: WHO

Dr Gro Harlem Brundtland, Director-General of WHO (far right) joined Jack Blane, director of the Rotary's Polio Eradication Private Sector Campaign (middle right), in Geneva this June at a ceremony where US-based pharmaceutical company Wyeth pledged US$ 1 million to polio eradication. Tommy Thompson, United States Secretary of Health and Human Services (far left) looked on as Kevin Reilly, President of Wyeth Vaccines and Nutrition (middle left) presented the contribution to the Polio Eradication Private Sector Campaign (jointly sponsored by The Rotary Foundation of Rotary International and the United Nations Foundation). The gift will support the African Region of the Global Polio Laboratory Network in their efforts to identify the last reservoirs of wild poliovirus. As part of Wyeth's commitment to the Initiative, now spanning six years, this is the company's second US$ 1 million contribution to support the Global Polio Laboratory Network.

Forthcoming events 2002

Date	Event	Venue
21-22 September	Rotary International Meeting of National Advocacy Advisors	Zurich, Switzerland
25 September	Horn of Africa Polio Partners' meeting	Nairobi, Kenya
7-11 October	Meeting of Interested Parties	Geneva, Switzerland
22-24 October	Rotary IPPC Meeting	Evanston, US*
11 & 15 November	Global Polio Management Team Meeting	Geneva, Swi
12 November	WHO/UNICEF MoH Consultation for Priority Countries	Geneva, Switzerland
13-14 November	Meeting of the Global TCG	Geneva, Switzerland
25-29 November	Pan American Health Organization Special Centennial Meeting on Vaccines	Washington DC, USA
2-5 December	Task Force on Immunization	Abuja, Nigeria

Polio News

All comments and feedback on Polio News should be sent to:
Department of Vaccines and Biologicals, WHO, Geneva.
Tel.: +41 22 791 3219
Fax: +41 22 791 4193
Email: polioepi@who.int
Web site: http://www.polioeradication.org

Design & Layout: LIV Com Sàrl

BMC Public Health

BioMed Central

Research article

Open Access

Polio eradication initiative in Africa: influence on other infectious disease surveillance development

Peter Nsubuga*[1], Sharon McDonnell[1], Bradley Perkins[2], Roland Sutter[3], Linda Quick[3], Mark White[1], Stephen Cochi[3] and Mac Otten[3,4]

Address: [1]Division of International Health, Epidemiology Program Office, Centers for Disease Control and Prevention, Atlanta, Georgia, USA, [2]Division of Bacterial and Mycotic Diseases, National Center of Infectious Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia, USA, [3]Vaccine Preventable Disease Eradication Division, National Immunization Program, Centers for Disease Control and Prevention, Atlanta, Georgia, USA and [4]Regional Office for Africa, World Health Organization, Harare, Zimbabwe

Email: Peter Nsubuga* - pnsubuga@cdc.gov; Sharon McDonnell - sem0@cdc.gov; Bradley Perkins - bap4@cdc.gov; Roland Sutter - rsutter@cdc.gov; Linda Quick - maq2@cdc.gov; Mark White - mhw1@cdc.gov; Stephen Cochi - scochi@cdc.gov; Mac Otten - ottenm@whoafr.org

* Corresponding author

Published: 27 December 2002

BMC Public Health 2002, **2**:27

Received: 17 September 2002
Accepted: 27 December 2002

This article is available from: http://www.biomedcentral.com/1471-2458/2/27

Abstract

Background: The World Health Organization (WHO) and partners are collaborating to eradicate poliomyelitis. To monitor progress, countries perform surveillance for acute flaccid paralysis (AFP). The WHO African Regional Office (WHO-AFRO) and the U.S Centers for Disease Control and Prevention are also involved in strengthening infectious disease surveillance and response in Africa. We assessed whether polio-eradication initiative resources are used in the surveillance for and response to other infectious diseases in Africa.

Methods: During October 1999-March 2000, we developed and administered a survey questionnaire to at least one key informant from the 38 countries that regularly report on polio activities to WHO. The key informants included WHO-AFRO staff assigned to the countries and Ministry of Health personnel.

Results: We obtained responses from 32 (84%) of the 38 countries. Thirty-one (97%) of the 32 countries had designated surveillance officers for AFP surveillance, and 25 (78%) used the AFP resources for the surveillance and response to other infectious diseases. In 28 (87%) countries, AFP program staff combined detection for AFP and other infectious diseases. Fourteen countries (44%) had used the AFP laboratory specimen transportation system to transport specimens to confirm other infectious disease outbreaks. The majority of the countries that performed AFP surveillance adequately (i.e., non polio AFP rate = 1/100,000 children aged <15 years) in 1999 had added 1–5 diseases to their AFP surveillance program.

Conclusions: Despite concerns regarding the targeted nature of AFP surveillance, it is partially integrated into existing surveillance and response systems in multiple African countries. Resources provided for polio eradication should be used to improve surveillance for and response to other priority infectious diseases in Africa.

Background

The polio-eradication initiative has led to the largest influx of public health resources into Africa since the smallpox-eradication campaign, comprising both human resources and infrastructure investment [1,2]. Public health professionals have debated the merits and demerits of the polio-eradication initiative, regarding the priorities of developing countries. Supporters of the initiative have reported on the high benefit-cost ratio of eradication [1,2]. Among the demerits cited is that polio has a lower public health importance as compared to other infectious diseases – many of them epidemic prone – in poor countries [1–3]. An investigation of the impact of the polio-eradication initiative on the status of funding for routine immunization revealed that the amount of funding for routine immunization activities has not increased over the years and that whether eradication funding will be available for other public health interventions when polio is eradicated is unclear [4]. Anecdotally reported merits and benefits of the polio-eradication initiative have included increased national enthusiasm and funding for Expanded Programs on Immunization, enhanced surveillance capacity for other diseases, strengthened public health laboratory capacity, and improved epidemiologic skills [2]. We report the results of a survey regarding the impact of the polio-eradication initiative on the surveillance for other infectious diseases in Africa.

In 1989, the African Regional Office of the World Health Organization (WHO-AFRO) adopted the global goal of eradicating poliomyelitis by the year 2000, and in 1995, member countries initiated specific polio-eradication strategies including acute flaccid paralysis (AFP) surveillance. Resources are deployed primarily through surveillance officers, development of a functional regional laboratory network, logistics, cold-chains, communications, and transportation [5–7]. To ensure that the polio eradication strategies were efficiently and effectively implemented, countries were divided into five epidemiological blocks on the basis of geographic proximity, similarity in infrastructure, and program needs. These country groupings included central, eastern, southern, and western epidemiological blocks and Countries in Special Circumstances (i.e., Angola, Democratic Republic of the Congo, Ethiopia and Nigeria) [5]. By 1999, 38 countries regularly reported polio/AFP surveillance data to WHO-AFRO.

In September 1998, to share resources, and improve efficiency, WHO-AFRO adopted the Integrated Disease Surveillance and Response (IDSR) strategy, which aims to improve surveillance and response by integrating infectious disease surveillance programs [8,9]. The IDSR strategy is based on core activities and support functions that are required to perform infectious disease surveillance, epidemic preparedness, and response [1,10,11]. Core activities include case-patient detection, registration, and confirmation; reporting, analysis, use, and feedback of data; and epidemic preparedness and response (e.g., outbreak investigations, contact tracing, and public health interventions). Support functions include coordination, supervision or performance evaluation, training, and resource-provision for infrastructure, including communication. The Centers for Disease Control and Prevention (U. S. Department of Health and Human Services) (CDC) provides technical and financial support to WHO-AFRO for both IDSR and the polio-eradication initiative, along with the U. S. Agency for International Development and other partners.

Methods

We performed a survey to determine the impact of AFP surveillance on the surveillance for and response to other infectious diseases. The objectives of the survey included describing the characteristics of AFP surveillance programs in WHO-AFRO, how surveillance activities for AFP and other infectious diseases have been combined, the contribution of AFP surveillance to the surveillance of other infectious diseases, and the effect of adding surveillance and response to other infectious diseases on the performance of AFP surveillance. We also used the experience of AFP surveillance programs to obtain a description of the constraints to strengthening infectious disease surveillance in Africa. We targeted the 38 countries that regularly report AFP surveillance and polio eradication activities to World Health Organization (WHO).

We developed, pilot-tested, and translated into French a survey questionnaire. The questionnaire was administered to at least one key informant per country by telephone, electronic mail, and in person during December 1999-April 2000. The key informants included Ministry of Health officials and WHO country assignees. Non-polio AFP rates are used as an indicator of the sensitivity of AFP surveillance programs. A sensitive AFP surveillance program should be able to detect a background rate of >1 case of non-polio AFP per 100,000 children aged <15 years in any geographic area (province, country, region etc.) per year. Non-polio AFP rates are reported monthly to WHO and compiled annually. We abstracted data regarding non-polio AFP rates from the WHO website [12]. Data accruing from this survey were entered and analyzed using Epi Info version 6.04 [13].

Results

We obtained data from 32 (84%) of the 38 countries that regularly report on polio/AFP surveillance activities in Africa to WHO (Figure 1). The highest response rates were from the southern epidemiological blocks (all nine countries) and the Countries in Special Circumstances (all four

often uneasy regarding entrusting others with gathering surveillance data that are crucial to targeting and evaluating their programs. Therefore, ongoing training monitoring and periodic external evaluations should provide the quality assurance and credibility that integrated surveillance and response programs will need to reassure managers that they are basing decisions on reliable information.

This survey had a few limitations and we were unable to obtain responses from all the targeted countries. In certain countries, we could not contact possible respondents because of difficulties in communication, which could have led to introduction of bias in the survey because the non-respondents might have had substantially different answers to our questions than the respondents. Another possible limitation was that respondents were reporting on themselves and could have lacked objectivity additionally, the future employment and/or career development of the respondents may likely depend on their capacity to support other control programs and this may have introduced a bias in answering the questionnaire, although there is no way to determine this for certain. Further, the tool that we used did not have questions on the acceptability of AFP surveillance and the feasibility of IDSR and we also did not evaluate the cost of IDSR or the cost to maintain and sustain the infrastructure of the polio eradication initiative after polio is eradicated. We determined the performance of the AFP surveillance programs solely by non polio AFP rates because of the lack of widely used surveillance and response indicators at the time of the survey, however WHO-AFRO and CDC have recently begun work on a list of core indicators that will help monitor and evaluate the implementation of the IDSR process.

The findings of this survey have important implications for WHO-AFRO's initiative to improve surveillance, epidemic preparedness, and response in the African region. First, polio-eradication initiative staff, financial resources, and infrastructure can be used as one strategy to build IDSR in Africa. Because additional funds are needed for surveillance now and will be needed after polio is eradicated, other disease-specific programs, especially those focusing on epidemic prone diseases like malaria, might consider investing in general infectious disease surveillance following the polio example. Second, as surveillance and response capacity are developed in Africa, adding new diseases to existing or new surveillance systems should be on the basis of indicators of the surveillance system's capacity not to overload the surveillance system. Finally, the cadre of new people trained in surveillance by the polio-eradication initiative should be used for IDSR, and career paths should be provided for them as one lasting legacy of the poliomyelitis-eradication campaign in Africa.

Competing Interests

None declared

Author Contribution

PN conceived and carried out the study and drafted the manuscript. SM conceived and carried out the study. BP, RS, LQ, MW, SC and MO participated in the design and coordination of the study. All authors read and approved the final manuscript.

References

1. Taylor CE, Cutts T and Taylor ME **Ethical dilemmas in current planning for polio eradication.** *Am J Public Health* 1997, **87:**922-5
2. Sutter RW and Cochi SL **Ethical dilemmas in worldwide polio eradication programs [Comments].** *Am J Public Health* 1997, **87:**913-6
3. Lee JW, Melgaard B, Hull HF, Barakamfitiye D and Okwo-Bele JM **Ethical dilemmas in polio eradication.** *Am J Public Health* 1998, **88:**130-2
4. Levin A, Jorissen J, Linkins J and McArthur C **Impact of polio eradication initiative on donor contributions to routine immunization.** *Special Initiative Report No. 36. Bethesda, MD: Partnerships for Health Reform Project, Abt Associates Inc* 2001,
5. Okwo-Bele JM, Lobanov A, Biellik RJ, Birmingham ME, Pierre L and Tomori O **Overview of poliomyelitis in the African Region and current regional plan of action.** *J Infect Dis* 1997, **175(Suppl 1):**S10-5
6. Centers for Disease Control and Prevention **Progress toward polio eradication Africa, 1996.** *MMWR* 1997, **46:**321-4
7. World Health Organization, Regional Committee for Africa **Expanded program on immunization: Disease control goals; the countdown has started.** *Brazzaville: World Health Organization, Regional Office for Africa, resolution AFR/RC45/R5* 1995,
8. World Health Organization, Regional Office for Africa **Integrated disease surveillance strategy, a regional strategy for communicable diseases 1999–2003.** *Harare: World Health Organization Regional Office for Africa* 1999,
9. World Health Organization: Regional Office for Africa *Regional Committee resolution AFR/RC48/R2* 1998,
10. World Health Organization **An integrated approach to communicable disease surveillance.** *Weekly Epidemiological Record* 2000, **75:**1-8
11. Centers for Disease Control and Prevention **Assessment of infectious disease surveillance, Uganda 2000.** *MMWR* 2000, **49:**687-9
12. *Online AFP Surveillance Data, World Health Organization* 2000,
13. Dean AG, Dean JA, Coulombier D and Brendel KA **Epi Info, Version 6: a word processing, database, statistics program for epidemiology on microcomputers.** *Centers for Disease Control* 1994,
14. Kleinau E **Management of health information systems** *In: Design and implementation of health information systems (Edited by: Lippeveld T, Suaerborn R, Bodart C) Geneva, Switzerland, World Health Organization* 2000, 176-197
15. Centers for Disease Control and Prevention **Updated guidelines for evaluating public health surveillance systems: recommendations from the guidelines working group.** *MMWR* 2001, **50(No. RR-13):**
16. World Health Organization, Regional Office for Africa **Protocol for the assessment of national communicable disease surveillance and epidemic preparedness and response systems.** *AFR/IDS/01.1* 2000,

Pre-publication history

The pre-publication history for this paper can be accessed here:

http://www.biomedcentral.com/1471-2458/2/27/prepub

Table 2: Major contribution of acute flaccid paralysis surveillance to surveillance for other diseases and constraints to disease surveillance in 32 African countries – 2000

Contribution of AFP Surveillance	n	(%)
Improvement of disease surveillance	12	(38)
Improved infrastructure or resources	7	(22)
Increase awareness about surveillance or capacity building	7	(22)
Increased personnel for surveillance	3	(9)
Constraints to Disease Surveillance		
Lack of staff	9	(28)
Lack of funds	7	(22)
Lack of vehicles or fuel	3	(9)
Lack of training	2	(6)
Lack of political commitment	1	(3)
Total	**32**	

countries that had prudently added other diseases to their AFP surveillance programs were also able to perform AFP surveillance adequately. However, the survey also indicated that additional staff, funds, and political commitment might be required if infectious disease surveillance and response is to improve in Africa.

AFP surveillance programs have instituted laboratory systems in countries and have formed networks between and within countries and with WHO-AFRO by providing portable computers with modems, telephone/facsimile lines, and electronic mail connections. Our survey results indicated that detection and confirmation of outbreaks of other infectious diseases has been conducted by using the resources and infrastructure of the AFP surveillance laboratory network, including the specimen transportation system. This can be further strengthened into a network of laboratories that can support the IDSR strategy. Joint information sessions for clinicians regarding polio-AFP surveillance and other diseases of public health importance within countries are already occurring and can be strengthened into a collaborative training effort for IDSR. Stronger links among epidemiologists and laboratorians are necessary to improve outbreak detection and control.

Our study determined that the majority of diseases that are integrated into AFP programs are vaccine-preventable diseases (e.g., measles and neonatal tetanus), indicating an ongoing linkage with other vaccination programs and disease-prevention activities. Other diseases included in AFP surveillance programs were epidemic-prone diseases (e.g., cholera and meningitis), reflecting the importance of epidemic response in general. Among the countries that achieved the surveillance target for AFP in 1999, the majority included 1–5 other infectious diseases in the AFP surveillance program, indicating that the judicious addition of a few diseases to a program such as AFP surveillance is feasible without adversely affecting the primary program.

Substantial fixed costs are involved in building and maintaining national surveillance and response systems and a limited number of countries can afford the cost of duplicative systems [14]. Other targeted and substantially funded disease control programs (e.g., HIV/AIDS, malaria, tuberculosis) need to consider following the example of AFP surveillance and make investments in the surveillance and response infrastructure at the country level. Many of these categorical programs desire improved timeliness and completeness of district reporting and evidence-based decision making, which can be addressed by implementing IDSR activities.

To support surveillance activities as a necessary component of disease prevention and control activities, an urgent need exists to develop a consensus core set of surveillance and response indicators that are field-tested and that can be monitored routinely in a similar manner to the polio indicators, in addition to the existing surveillance evaluation frameworks [15,16]. These indicators can then guide the strengthening of surveillance systems and the integration of other diseases into targeted disease-specific programs.

Contributions that were identified and attributable to the presence of AFP surveillance programs indicate that polio-eradication programs have gone beyond a purely vertical approach (i.e., disease-specific) toward one that is more horizontal (i.e., systems development). Improvements of infrastructure, capacity building, and provision of personnel can be used to develop the overall surveillance system for infectious diseases as long as the categorical program policies clearly support this approach. A lack of resources (e.g., staff, funds, vehicles, or fuel) were the main constraints to infectious disease surveillance that were identified in the survey – interestingly, training was not identified as a top constraint, possibly indicating that trained personnel already exist, at least within the AFP surveillance program. Managers of categorical programs are

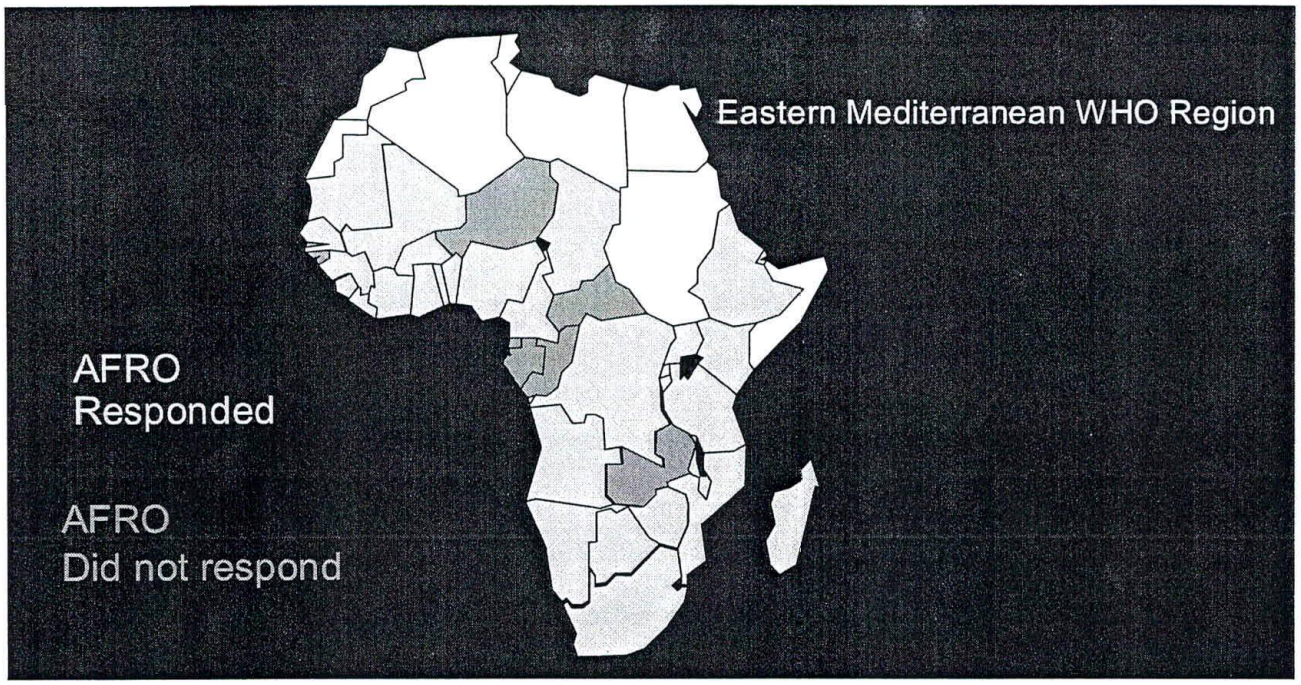


Figure 1
African Region WHO (AFRO) Countries Surveyed – 2000

countries). The lowest response rate was from the central epidemiological block where only two of the four countries responded.

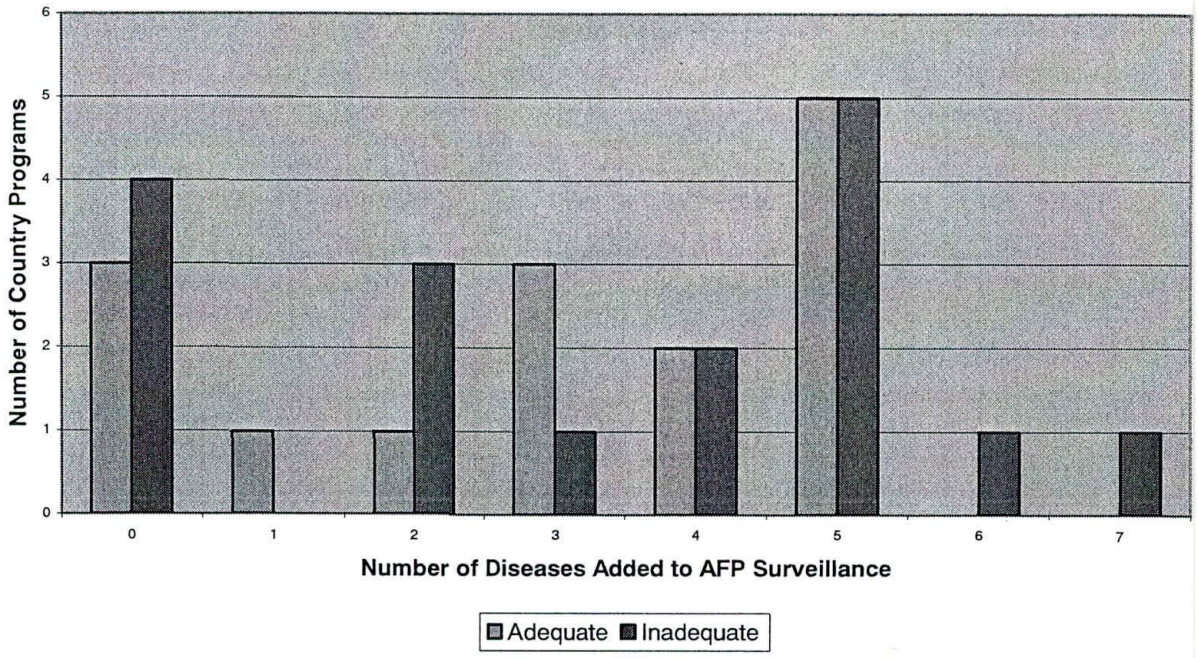
Thirty-one (97%) of the 32 countries had designated surveillance officers working on AFP surveillance, with a median number of 10 per country. Twenty-seven (84%) of the 32 countries had an annual AFP surveillance budget ranging from $10,000 to $1.8 million (median: $125,000). The majority AFP surveillance programs (26 [81%]) had >1 dedicated vehicles. In the majority of countries (27 [84%]), the AFP surveillance program was started after the general infectious disease surveillance program.

Detection for other infectious diseases was combined with AFP detection in 28 (90%) countries (Table 1). In 28 (90%) countries, staff from the AFP program took responsibility for informing clinicians and other health practitioners regarding other infectious diseases while conducting training in AFP surveillance. Fourteen countries (44%) had used the AFP laboratory specimen transportation system to transport specimens to laboratories for confirmation other infectious disease outbreaks.

Fifteen (47%) of the 32 countries performed AFP surveillance adequately (i.e., non polio AFP rate = 1/100,000 children aged <15 years) at the end of 1999 (Figure 2). Eleven (73%) of the 15 countries that performed AFP surveillance adequately had also added 2–5 diseases onto their AFP surveillance program. Both countries that added >5 diseases onto their AFP surveillance program performed AFP surveillance inadequately.

A total of 25 (78%) of the 32 countries had combined AFP surveillance with surveillance for other infectious diseases. The most common diseases added to surveillance for AFP were other childhood vaccine-preventable diseases: measles in 24 (96%) and neonatal tetanus in 22 (88%). The other diseases added to the AFP surveillance programs tended to be epidemic-prone diseases (e.g., cholera in 17 [68%], meningitis in 16 [64%], or yellow fever in 11 [44%]), and depended on the epidemiological patterns in the responding countries.

When the respondents were asked to illustrate major contributions attributable to the AFP surveillance programs, 12 (38%) described an improvement of national disease surveillance (Table 2). Other contributions cited were improved infrastructure or resources, increased awareness regarding surveillance or capacity building, and increased



Adequate performance = Non polio AFP rate ≥ 1 per 100,000 children less than 15 years old
Inadequate performance = Non polio AFP rate < 1 per 100,000 children less than 15 years old

Figure 2
Effect of integration of other diseases on the performance of acute flaccid paralysis (AFP) surveillance using 1999 non polio AFP rates in 32 African countries

Table 1: Integration of surveillance and response for other diseases with the acute flaccid paralysis surveillance program in 32 African countries – 2000

Attribute	n	(%)
Use AFP resources for surveillance for other diseases	26	(81)
Combine detection for other diseases with AFP	28	(90)
Inform clinicians about other diseases when informing them about AFP	27	(87)
Use AFP laboratory transportation system for other diseases	14	(44)
Total	**32**	

personnel for surveillance. Major constraints to general disease surveillance that were identified included a lack of staff to perform surveillance, a shortage or lack of funds, lack of vehicles or fuel, lack of training, and a lack of political commitment.

Discussion

Our survey revealed that, among the African countries that conducted AFP surveillance and reported to WHO in 1999, the majority had designated surveillance officers, vehicles, and annual budgets. Moreover, most of the national polio eradication programs combined the surveillance for and response to AFP with other infectious diseases. Our investigation also revealed that certain

The impact of the Global Polio Eradication Initiative on the financing of routine immunization: case studies in Bangladesh, Côte d'Ivoire, and Morocco

Ann Levin,[1] Sujata Ram,[2] & Miloud Kaddar[2]

Abstract To determine if the Global Polio Eradication Initiative (PEI) affected financing of routine immunization programmes, we compared sources and uses of funds for routine immunization programmes and PEI activities in Bangladesh, Côte d'Ivoire, and Morocco for the years 1993–98. We also examined funding trends for these years in these countries and assessed the effect of the initiative on the availability of specific resources in national immunization programmes, such as cold-chain equipment and personnel time spent on activities related to national immunization days and surveillance of poliomyelitis and acute flaccid paralysis. We found that all three governments and the majority of donors and international organizations continued to fund routine immunization programmes at levels similar to those before the PEI. Trend analysis also indicated that financing for routine immunization in each of the countries continued to increase after the PEI was introduced. The results show that the PEI did not reduce funding for routine immunizations in these countries.

Keywords Poliomyelitis/prevention and control; Immunization programs/economics; Financing, Government/trends; Financing, Organized/trends; Health expenditures/trends; Comparative study; Case report; Bangladesh; Morocco; Côte d'Ivoire (*source: MeSH, NLM*).

Mots clés Poliomyélite antérieure aiguë/prévention et contrôle; Programmes de vaccination/économie; Financement par gouvernement/orientations; Organisation financement/orientations; Dépenses de santé/orientations; Etude comparative; Cas clinique; Bangladesh; Maroc; Côte d'Ivoire (*source: MeSH, INSERM*).

Palabras clave Poliomielitis/prevención y control; Programas de inmunización/economía; Financiamiento gubernamental/tendencias; Organización del financiamiento/tendencias; Gastos en salud/tendencias; Estudio comparativo; Informe de caso; Bangladesh; Marruecos; Côte d'Ivoire (*fuente: DeCS, BIREME*).

Bulletin of the World Health Organization 2002;80:822-828.

Voir page 828 le résumé en français. En la página 828 figura un resumen en español.

Introduction

Considerable progress has been made in eradicating poliomyelitis, thanks to the Polio Eradication Initiative (PEI), led by WHO, the United Nations Children's Fund (UNICEF), and a number of bilateral donors. However, the initiative has required considerable financial and other resources from ministries of health and other local and external sources, which raised the question as to whether resources for routine immunizations were adversely affected by the focus on the PEI. In the 1990s, global funding for routine immunization programmes in developing countries declined sharply for several reasons, including funding reductions from the United States Agency for International Development (USAID) after the cold war ended; competition from health services, such as those for human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) and other health priorities; and a reduction in UNICEF funding after Universal Child Immunization ended in 1990. During the 1990s, initiatives to control and eliminate diseases also became more frequent.

The PEI began in 1988 and has since reduced the global incidence of poliomyelitis. The WHO Region of the Americas was the first region to certify eradication in 1994, although one outbreak of vaccine-derived poliomyelitis has since occurred. The WHO Western Pacific region was certified poliomyelitis free in October 2000, and the WHO European Region was declared poliomyelitis free in June 2002. The two regions with the highest incidence of poliomyelitis are the WHO African Region and the WHO South-East Asia Region, although the frequency of cases is much lower than a decade ago.

Critics of eradication initiatives have argued that they divert resources and undermine efforts to maintain and strengthen routine health services. In the least-developed countries poliomyelitis eradication has had both positive and negative impacts on the development of health systems (*1*, *2*). The positive impacts on routine health services resulted from the emphasis on social mobilization and improving management as part of the targeted initiatives. In poorer countries, however, targeted immunization programmes diverted resources away from routine services, especially during mass immunization campaigns.

Other studies also found that poliomyelitis eradication efforts had both positive and negative impacts. The development and strengthening of acute flaccid paralysis surveillance in the Philippines, for example, improved surveillance for other diseases (*3*), whereas poliomyelitis eradication initiatives in the

[1] Senior Research Associate, Family Health International, 4301 Connecticut Avenue, Northwest, # 280, Washington, DC 20008, USA (email: alevin@pcdc.org). Correspondence should be addressed to this author.

[2] Consultant, Partners for Health Reform Project, Abt Associates Inc., Bethesda, MD, USA.

Ref. No. 01-1341

Lao People's Democratic Republic, Nepal, and United Republic of Tanzania had both positive and negative impacts on the health system, depending on the level of development of the health system, the management capacity of personnel, and the level of integration of the health infrastructure (*4*). Positive impacts were more likely when sufficient planning was in place. It should be noted, however, that these three countries may not have been representative of other countries in their respective regions.

In the present study, we examined whether trade-offs occurred for routine immunization programmes, when governments, donors, and international organizations provided funding for the PEI.

Data collection

We collected data in Bangladesh, Côte d'Ivoire, and Morocco — chosen as part of a larger study on the financing of immunization programmes — since the countries had a mix of financing sources and were located in different geographical regions. However, the countries all had diphtheria, pertussis, and tetanus coverage rates greater than 60% and are not representative of countries with programmes that function less well.

We collected information on sources and uses of funds for routine immunization programmes and poliomyelitis eradication activities by the governments, donors, and other contributors (*5–7*). Although poliomyelitis eradication activities only began in 1995–96, funding for surveillance and planning activities began in 1993–94. The sources of financing included national governments, local (regional) governments, donors, international organizations, and the private sector.

Morocco differs from the other two countries since it was already conducting national immunization days before the PEI was started as a means of supplementing routine immunization activities. National immunization days were used to improve immunization coverage, since disparities in coverage rates existed, particularly in rural areas. When the initiative began, poliomyelitis immunization for children aged 1–5 years old was included in national immunization days.

Expenditure was divided into recurrent and capital expenses. Recurrent expenditures occurred within one year or less, such as personnel salaries and supplies. Capital expenditures were for items that lasted longer than a year, such as equipment and land. Interviews were conducted with key informants to obtain in-depth information on the immunization programmes and long-term prospects for financing. Better estimates of the role of governments in financing these activities were obtained by including the value of personnel time in the analysis, although the analysis did not attempt to separate out the contributions from different levels of staff. Funding data for trend analyses were converted to United States dollars so that data from different sources could be compared. Nominal dollars — which give the value at current prices — were used because inflation of the United States dollar was low during 1993–2000.

The short-term effects of the initiative on financing routine immunizations were examined by trend analysis when information was available. To determine whether the rate of funding for routine immunizations had decreased, routine immunization funding was compared with that for poliomyelitis eradication activities. We also examined whether the rate of funding increase slowed once poliomyelitis eradication activities were introduced. In addition, specific funding sources were investigated to determine whether individual flows increased or decreased over the same period.

The contributions of the governments of Bangladesh, Côte d'Ivoire, and Morocco for routine immunization programmes and national immunization days were examined separately to assess how governments allocated national immunization programme resources to immunization and poliomyelitis eradication activities. The study also examined whether the governments contributed to the PEI, and examined whether this had long-term effects on financing for their routine immunization programmes.

The possibilities for long-term financing for routine immunization, poliomyelitis eradication, and other health activities were determined from discussions with contributors and key informants, such as ministry officials and donor representatives.

Spending trends for routine immunization and the PEI

The trends in expenditures on routine immunization and poliomyelitis eradication in Bangladesh and Côte d'Ivoire were examined to assess whether expenditures for routine immunization changed as poliomyelitis eradication activities were introduced. Morocco was not included, as there was insufficient information on past expenditures. In Bangladesh, expenditures between 1993 and 1997 on routine immunization comprised an approximately constant 6–7% of total health-sector expenditures (Table 1). Funding for poliomyelitis eradication was also fairly constant at 2% of total health expenditures. However, the annual increase in expenditure was only 1.6% for poliomyelitis eradication, while those for routine immunization and the health and population programme increased by 11–12% (Table 1).

In Côte d'Ivoire, expenditures on the PEI, routine immunization, and the health sector increased between 1996 and 1998 (Table 2). In this country, PEI expenditures were equivalent to NID spending because no information was available on spending on surveillance. Expenditures on routine immunization as a percentage of health sector expenditures remained the same during this period.The expenditures on the PEI increased more rapidly during this period (22–27%), although the value in United States dollars of the expenditures was relatively low and ranged from only 1.1% to 1.8% of total health sector expenditures. The funding for the entire national immunization programme increased at a slower rate (9.1%) than the health budget as a whole (11.3%).

Funding trends for routine immunization and polio eradication

For all three countries, we examined funding trends for the PEI and for routine immunization by source, to determine whether some sources reduced their funding for routine immunization after the PEI was introduced. In Bangladesh, funding for routine immunization either stayed the same or increased for most funding sources (Table 3), and the government of Bangladesh increased its funding for routine immunization, despite some fluctuations. The level of funding of other agencies, such as USAID and WHO, did not significantly change during the period. The three-year moving averages of funding contributions were US$ 315 099, US$ 349 250, and US$ 300 064 for USAID

Table 1. **Annual expenditure for polio eradication, routine immunization, and the health and population programme,[a] Bangladesh, 1993–97, all sources of funding**

Health activity	Annual expenditure[b]					Average annual change (%)
	1993	1994	1995	1996	1997	
Polio eradication						
Annual expenditure (US$ in thousands)	0	7 104	7 601	7 306	7 430	–
Annual change (%)	NA[c]	NA	7.0	–3.9	1.7	1.6
Routine immunization						
Annual expenditure (US$ in thousands)	19 833	24 869	19 292	25 379	27 826	–
Annual change (%)	NA	25.4	–22.4	31.6	9.6	11.1
Total: polio eradication and routine immunization						
Annual expenditure (US$ in thousands)	19 833	31 974	26 893	32 685	35 257	–
Annual change (%)	NA	61.2	–15.9	21.5	7.9	18.7
Health and population programme						
Annual expenditure (US$ in thousands)	268 100	343 400	357 311	399 591	412 574	–
Annual change (%)	NA	28.1	4.1	11.8	3.2	11.8
% of expenditures on PEI to total health programme	NA	2.1	2.1	1.8	1.8	2.0
% of expenditures on routine immunization to total health programme	7.4	7.2	5.4	6.4	6.7	6.6

[a] Includes all expenditures on health, including routine immunization and the Global Polio Eradication Initiative.
[b] Expenditures have been converted to US$ (thousands) to account for inflation during the study period.
[c] NA = data not available.

Table 2. **Annual expenditure for polio eradication, routine immunization, and the health sector, Côte d'Ivoire, 1995–98, all sources of funding**

Health activity	Annual expenditure[a]				Average annual change (%)
	1995	1996	1997	1998	
Polio eradication					
Annual expenditure (US$ in thousands)	NA[b]	2 009[c]	2 442[d]	3 099	–
Annual change (%)	NA	NA	21.5	26.9	24.2
Routine immunization					
Annual expenditure (US$ in thousands)	NA	7 224	7 409	7 876	–
Annual change (%)	NA	NA	2.6	6.3	4.4
Total: polio eradication and routine immunization					
Annual expenditure (US$ in thousands)	NA	9 234	9 852	10 976	–
Annual change (%)	NA	NA	6.7	11.4	9.1
Health sector					
Annual expenditure (US$ in thousands)	132 572	182 566	173 542	175 559	–
Annual change (%)	NA	37.7	–4.9	1.2	11.3

[a] Expenditures have been converted to US$ (thousands) to account for inflation during the study period.
[b] NA = data not available.
[c] It was assumed that the government contribution towards operational expenses was the same as that in 1998.
[d] It was assumed that the German Development Bank contributed US$ 278 840 (amount contributed the previous year).

and US$ 143 749, US$ 158 151, and US$ 184 890 for WHO (the amounts refer to averages of data from three years, beginning with the base year, base year + 1, and base year + 2. Although UNICEF funding for the routine immunization programme did decrease in 1997–98, this could be attributed to the introduction of the sector-wide approach in the health sector, rather than to a reallocation of funds to the PEI. The Swedish International Development Agency and other donors that previously funnelled contributions to routine immunization (for cold-chain equipment and vaccines) through UNICEF, instead provided their aid as sector-wide pooled funding. The exact contributions for the Swedish International Development Agency could not be quantified, since the Agency was still making contributions to the routine immunization programme indirectly. Since UNICEF no longer had funds to purchase vaccines, the government of Bangladesh used its World Bank loan instead to purchase vaccines. Funding for the PEI stayed at about the same level for most sources (Table 3), with the exception of the government of Bangladesh, which gradually decreased its contributions.

In Côte d'Ivoire, the government, the European Union Development Fund, and the German Development Bank all increased funding for routine immunization between 1996 and 1999 (Table 4). The contribution from WHO remained the same, while that for UNICEF declined slightly, for unknown

Table 3. **Funding sources for routine immunization and polio eradication activities, Bangladesh, 1993–97**

Source	Funding[a] for routine immunization				
	1993	1994	1995	1996	1997
Government of Bangladesh	9 329	16 657	15 260	16 387	17 676
World Bank	2 876	4 872	2 989	2 414	9 342
UNICEF[b]	11 461	6 246	6 382	10 419	179
USAID[c]	265	300	379	278	242
WHO	134	200	96	357	100
Government of Japan	0	0	0	475	494
Total funding for routine immunization	**24 067**	**28 275**	**25 108**	**30 333**	**28 034**

Source	Funding[a] for polio eradication				
	1993	1994	1995	1996	1997
Government of Bangladesh	0	3130	1113	1003	723
UNICEF	0	1193	349	312	343
CDC[d]	0	315	315	315	735
USAID	0	121	165	198	125
WHO	0	603	603	572	4
Rotary International	0	1637	1601	1497	1608
Government of Japan	0	0	3281	3213	4437
Total funding for polio eradication	**0**	**7001**	**7429**	**7113**	**7976**

[a] Funding data have been converted to US$ (thousands) to account for inflation during the study period. The figures in this table do not include all expenditures and are therefore lower than the total expenditure figures in Table 1.

[b] UNICEF = United Nations Children's Fund.

[c] USAID = United States Agency for International Development.

[d] CDC = United States Centers for Disease Control and Prevention. CDC contributed funds for national immunization days through UNICEF and consequently it is not known whether double counting occurred for this funding.

reasons. The contributions of the government of Côte d'Ivoire for poliomyelitis eradication also increased (Table 4). While the contributions of a few donors, such as USAID (through WHO), were lower for 1999 than those for 1998, Japan and UNICEF have filled the gap when required. The contributions of the government of Côte d'Ivoire to both routine immunization and national immunization days increased. The government of Japan pledged to support the PEI and designated its contribution for the cold chain, while the German Development Bank, which has a history of supporting routine immunization but not poliomyelitis eradication, designated its contribution for routine immunization.

In Morocco, the government was the main financier of both the routine immunization programme and the PEI, in contrast to the situation in Bangladesh and Côte d'Ivoire. In 1995 Morocco began to finance all of its vaccines using its World Bank loan (a non-International Development Association loan). The contribution of international agencies to the immunization programme comprised only about 4% of total costs (*6*). The contributions of the government of Morocco increased for both routine immunization and PEI activities (Table 5, Table 6). For the routine immunization programme, the increases occurred because population growth required additional resources and programme improvements required more funds (*6*). For the PEI, an acceleration in the implementation of activities increased contributions.

Long-term prospects for financing routine immunizations

In Bangladesh, long-term prospects for financing routine immunizations and health systems have changed little since the PEI was introduced. Two donors, the government of Japan and Rotary International, used not to fund routine immunization activities, and even though they currently provide funds for poliomyelitis eradication activities, this situation will probably change. Rotary International has a particular interest in funding poliomyelitis eradication activities and other specific programmes, such as AIDS Education, and is unlikely to finance other immunization activities. Also, even though the government of Japan has provided funding for routine immunization vaccines since 1995–96, interviews of staff of the Japan International Cooperation Agency in Dhaka, Bangladesh, in February 1999 indicated that this contribution would end in a few years (Y. Ando, personal communication, 1999).

The effect of the PEI on the long-term financing prospects for Côte d'Ivoire is unclear. If a donor uniquely funded the PEI, loss of this funding would not impact funding for other programmes. Also, the government of Côte d'Ivoire has gradually increased its contribution for poliomyelitis eradication activities and this additional funding could be available for other health sector activities after the PEI finishes.

In Morocco, the most favourable long-term prospects are for the additional resources generated by the government for poliomyelitis eradication vaccines. When the PEI ends, it is possible that the additional contributions of the government could be transferred to the routine immunization programme, since the funds may have been "institutionalized." The government could have directed the additional poliomyelitis eradication funds for the national immunization programme to purchase other vaccines and supplies instead, such as hepatitis B vaccines and disposable syringes. However, it is less likely

Table 4. **Funding sources for routine immunization and polio eradication in Côte d'Ivoire, 1996–99**

Source	Funding[a] for routine immunization			
	1996	1997	1998	1999
Government of Côte d'Ivoire	5 170	5 303	5 617	5 870
European Union Development Fund	1 720	1 764	1 869	1 953[b]
German Development Bank	299	306	325	7 280[c]
WHO	NA[d]	NA	27	29
UNICEF[e]	34	34	37	11
Total funding for routine immunization	**7 224**	**7 409**	**7 876**	**15 144**

Source	Funding[a] for polio eradication			
	1996	1997	1998	1999
Government of Côte d'Ivoire				
Operational costs	NA	NA	294	711
Personnel	610	626	752	691
Rotary International				
Donations through WHO	1 161	375	279	509
Local donations	0	26	12	8
Government of Japan	0	1 166[f]	1 120[g]	[h]
USAID[i] through WHO	NA	NA	624	298
WHO-Côte d'Ivoire	NA	NA	9	8
UNICEF	50	50	50	218
Total funding for polio eradication	**1 821**	**2 243**	**3 140**	**2 443**

[a] Funding data are given in US$ (thousands).
[b] Financing was blocked due to fraud.
[c] The increase in financing was due to the purchase of cold-chain equipment.
[d] NA = data not available.
[e] UNICEF = United Nations Children's Fund.
[f] Contribution for cold chain.
[g] National Immunization vaccine and operating costs.
[h] According to WHO, 1998 funds from the government of Japan were used in 1999 to buy vaccines and for operational costs.
[i] USAID = United States Agency for International Development.

that these resources could have been generated without high-level support, such as that of the PEI and the royal family's strong support and advocacy of the national immunization days.

Discussion

Government financing

Our findings indicate that since poliomyelitis eradication activities were introduced in Bangladesh, Côte d'Ivoire, and Morocco, government financing for routine immunization activities increased. In Côte d'Ivoire and Morocco, the governments also increased their contributions to the PEI. The results suggest that no trade-offs were made in Côte d'Ivoire and Morocco, and that instead the governments increased their overall financing of both routine immunization and poliomyelitis eradication. In Bangladesh, the government concentrated its limited resources on routine immunization rather than on poliomyelitis eradication activities. This was an appropriate choice for the government, since the routine coverage did not increase during 1993–97.

External financing

Financing of routine immunization programmes by most external sources of funding stayed the same (Bangladesh) or increased (Côte d'Ivoire) over the five-year study period. The only organization that decreased its contributions to routine immunization during this period was UNICEF, but the decreases were probably associated with factors other than the reallocation of funding to the PEI. Some donors (e.g. Rotary International) concentrated their funding on either routine immunization or on poliomyelitis eradication activities and did not need to make any funding trade-offs.

Three important funding sources for the PEI in the countries studied, the United States Centers for Disease Control and Prevention (CDC), the government of Japan, and Rotary International, focused most of their resources on this initiative. It should be noted that CDC and the government of Japan did not finance the PEI programme in Morocco. In only one case was funding also provided for routine immunization — Japan financed the purchase of measles vaccine in Bangladesh — but this contribution was relatively small.

Other donors provided funding only for routine immunization activities (e.g. the German Development Bank in Côte d'Ivoire and the Swedish International Development Agency in Bangladesh). Only a few organizations (USAID, WHO, and UNICEF) funded both activities in at least two of the three countries. None appeared to be reducing their funding significantly for routine immunization activities, with the exception of UNICEF in Bangladesh and Côte d'Ivoire.

In Bangladesh and Côte d'Ivoire, funding for routine immunization activities from most sources generally stayed the same or increased. Where funding decreased, the decline was attributed to reasons other than the reallocation of funds to the PEI. In Morocco, where most of the funding was from the

Table 5. **Funding sources for polio eradication, Morocco, 1993–98**[a]

Funding source	Funding for polio eradication[b]					
	1993	1994	1995	1996	1997	1998
Government of Morocco						
Vaccines	NA[c]	NA	336	742	930	1131
Personnel	NA	NA	1855[d]	1910	1968	2027
Total	**NA**	**NA**	**2191**	**2653**	**2898**	**3158**
Donor						
UNICEF[e]	115	115	115	121	NA	NA
Rotary International[f]	603	331	15	NA	24	NA
USAID[g]	NA	NA	NA	64	93	57
Total	**718**	**446**	**130**	**185**	**117**	**57**

[a] WHO provided funding for National Immunizations days (*6*), but the exact amount contributed during the study period is not known.
[b] Expenditures have been converted to US$ (thousands) to account for inflation during the study period.
[c] NA = data not available.
[d] The figure is based on the 1997 value, adjusted for a 3% annual inflation rate.
[e] UNICEF = United Nations Children's Fund. UNICEF funding supported surveillance and social mobilization activities.
[f] Rotary International funding supported the purchase of vaccines (in 1993 and 1994), social mobilization activities (1995), and cold-chain equipment purchases (1997).
[g] USAID = United States Agency for International Development. USAID funding supported information, education, and communication activities, including meetings.

government, any decrease in funding by donors would have been due to reasons other than financing the PEI.

Prospects for long-term financing of routine immunizations

In Côte d'Ivoire and Morocco, government funding for poliomyelitis eradication activities increased during the study period. To try to keep these funds after the PEI ends and have them allocated to the health sector, policy-makers and programme managers should make plans for the funds and begin lobbying to keep them within the health sector. However, much of the additional funding for the PEI is from donors that provide financing specifically for this activity and not for routine immunization; consequently, the prospects for maintaining funding from them after the initiative ends are not clear. The government of Japan may choose to shift its funding from poliomyelitis eradication to routine immunization, since it funds the latter activity in some countries, but it is not clear that it will do so. It is also possible that donors, such as Rotary International and other international organizations, will shift their funding to another disease eradication initiative, if one is initiated. Despite these concerns, some funds for the PEI were for capital expenditures on equipment and vehicles, which could be used by the routine immunization programme after the PEI ends.

Table 6. **Government expenditure[a] for routine immunization, Morocco, 1994–97**

Expenditure	1994	1995	1996	1997
Personnel	4347	4477	4612	4750
Vaccines	719	893	1001	1287
Maintenance/overheads	165	170	175	181
Totals	**5232**	**5541**	**5789**	**6218**
Increase (%)	**NA[b]**	**5.9**	**4.5**	**7.4**

[a] Expenditure is given in US$ (thousands).
[b] NA = data not available.

It is likely that there were costs in choosing to support poliomyelitis eradication activities in each country, rather than improving the routine immunization programmes. For example, the funds could have been used to introduce "new" vaccines such, as that for hepatitis B, or to provide more social mobilization activities for routine immunization. On the other hand, without high-level advocacy, it is possible that these other activities could not have attracted the additional funding that the high-profile PEI did and they would not have had sufficient finance.

Limitations of the study

One limitation of the study was that the three study countries were not representative of countries with lower immunization coverage rates. It is possible that the impact of the PEI on financing for routine immunizations would be more adverse in countries with weaker immunization programmes and low coverage. Also, we did not determine whether the policy and financing decisions of international agencies were made at headquarter or regional levels, since we investigated funding only at the country level. Finally, this study examined the impact of the PEI on funding for routine immunization and we cannot draw conclusions regarding its impact on the financing of other health services in the countries studied. ■

Acknowledgements

This study was supported by the PEI funds of the Child Survival Division of USAID, Office of Health and Nutrition, and coordinated by the Partnerships for Health Reform. Implementation of the study in each country would not have been possible without the support of the ministries of health, national immunization programme coordinators, and collaborating agencies. We also thank Marty Makinen of the Partnerships for Health Reform, and Bruce Aylward and Jean-Marc Olive of WHO for their comments. Finally, we express our appreciation for the continued support and encouragement of Ellyn Ogden, USAID Child Survival Division.

Conflicts of interest: none declared.

Résumé

Impact de l'initiative pour l'éradication de la poliomyélite sur le financement de la vaccination de routine : études de cas au Bangladesh, en Côte d'Ivoire et au Maroc

Pour déterminer si l'initiative pour l'éradication de la poliomyélite a eu un impact sur le financement des programmes de vaccination de routine, nous avons comparé les sources et l'utilisation des fonds destinés aux programmes de vaccination de routine et les activités de cette initiative au Bangladesh, en Côte d'Ivoire et au Maroc pendant les années 1993 à 1998. Nous avons également examiné les tendances du financement pour cette même période dans ces pays et évalué l'effet de l'initiative sur la disponibilité de certaines ressources au sein des programmes nationaux de vaccination, comme l'équipement de la chaîne du froid et le temps consacré par le personnel à des activités en relation avec la surveillance de la poliomyélite et de la paralysie flasque aiguë. Nous avons trouvé que les trois gouvernements et la plupart des donateurs et des organismes internationaux ont continué à financer les programmes de vaccination de routine au même niveau qu'avant l'initiative. L'analyse des tendances a également montré que le financement de la vaccination de routine dans chaque pays a continué à augmenter après le lancement de l'initiative. Les résultats montrent que l'initiative pour l'éradication de la poliomyélite n'a pas réduit le financement des vaccinations de routine dans ces pays.

Resumen

Repercusión de la Iniciativa de Erradicación de la Poliomielitis en la financiación de la inmunización sistemática: estudios de casos en Bangladesh, Côte d'Ivoire y Marruecos

A fin de determinar si la Iniciativa de Erradicación de la Poliomielitis (IEP) afectaba a la financiación de los programas de inmunización sistemática, comparamos la procedencia y el uso de los fondos destinados a dichos programas y a las actividades de la IEP en Bangladesh, Côte d'Ivoire y Marruecos durante los años 1993–1998. También examinamos las tendencias de la financiación a lo largo del citado periodo en esos países y evaluamos el efecto de la iniciativa en cuanto a la disponibilidad de recursos específicos en los programas nacionales de inmunización, como el equipo de las cadenas de frío y el tiempo dedicado por el personal a actividades relacionadas con la vigilancia de la poliomielitis y la parálisis fláccida aguda. Observamos que los tres gobiernos y la mayoría de los donantes y las organizaciones internacionales siguieron financiando los programas de inmunización sistemática en medida parecida a como lo habían hecho antes de la IEP. El análisis de tendencias mostró además que la financiación de la inmunización sistemática en cada uno de los países siguió aumentando tras la introducción de la IEP. Los resultados muestran que ésta no mermó los fondos dedicados a la inmunización sistemática en esos países.

References

1. *The impact of the Expanded Programme on Immunization and the Polio Eradication Initiative on health systems in the Americas. Final report of the Taylor Commission.* Washington (DC): Pan American Health Organization; 1995.
2. Taylor C, Cutts F, Taylor ME. Ethical dilemmas in current planning for poliomyelitis eradication. *American Journal of Public Health* 1997;87:922-5.
3. Tangermann R, Costales M, Flavier J. Poliomyelitis eradication and its impact on primary health care in the Philippines. *Journal of Infectious Disease* 1997;175 Suppl 1:S272-6.
4. Mogedal S, Stenson B. *Disease eradication: friend or foe to the health system?* Synthesis report from field studies on the polio eradication initiative in Tanzania, Nepal, and Lao PDR. Geneva: World Health Organization; 1999 (unpublished document of November 1999, available on request from the Department of Vaccines and Biologicals, 1211 Geneva 27, Switzerland).
5. Levin A, Siddiqi M, Howlader S, Routh S, Rasul I, Ram S. *Case study on the costs and financing of immunization services in Bangladesh.* Bethesda (MD): Partnerships for Health Reform, Abt Associates Inc.; 1999 Special Initiative Report No. 21.
6. Kaddar, M, Mookherji S, DeRoeck D, Antona D. *Case study on the costs and financing of immunization services in Morocco.* Bethesda (MD): Partnerships for Health Reform, Abt Associates Inc.; 1999. Special Initiative Report No. 18.
7. Kaddar M, Tanzi V, Dougherty L. *Case study on the costs and financing of immunization services in the Côte d'Ivoire.* Bethesda (MD): Partnerships for Health Reform, Abt Associates Inc.; 2000 Special Initiative Report No. 24).

WEMOS

GEZONDHEID WERELDWIJD

HEALTH FOR ALL

DOOR VOORLICHTING EN BELEIDSBEÏNVLOEDING IN EUROPA

BY MEANS OF EDUCATION AND ADVOCACY ON EUROPEAN POLICIES

STICHTING WEMOS

WEMOS FOUNDATION

ELLERMANSTRAAT 15

POSTBUS 1693

1000 BR AMSTERDAM

THE NETHERLANDS

TEL +31-20-4688388

FAX +31-20-4686008

E-MAIL: WEMOS@WEMOS.NL

INTERNET: WWW.WEMOS.NL

POSTGIRO 4265727

KVK AMSTERDAM 41201644

OPTIMALE GEZONDHEID IS EEN UNIVERSEEL MENSENRECHT. VANUIT DEZE GEDACHTE WERKT STICHTING WEMOS AL SINDS 1981 AAN HAAR DOELSTELLING: HET VERBETEREN VAN DE GEZONDHEID VAN MANNEN EN VROUWEN IN ONTWIKKELINGSLANDEN DOOR HET BEÏNVLOEDEN VAN INTERNATIONAAL BELEID.

Documentation

Ethical Dilemmas in Current Planning for Polio Eradication

Carl E. Taylor, DPH, MD, MPH, FRCP(C), Felicity Cutts, MRCP, MD, MBCHP, MSc, FFPHM, and Mary E. Taylor, MHS

ABSTRACT

Intensification of polio eradication efforts worldwide raises concerns about costs and benefits for poor countries. A major argument for global funding is the high benefit–cost ratio of eradication; however, financial benefits are greatest for rich countries. By contrast, the greatest costs are borne by poor countries: the Pan American Health Organization has estimated that host countries bore 80% of costs for polio eradication in the Americas. The 1988 World Health Assembly resolution setting up the Polio Eradication Initiative carried the proviso that programs should strengthen health infrastructures. Drastic cuts in donor funding for health make this commitment even more important. Two international evaluations have reported both positive and negative effects of polio and Expanded Programme on Immunization programs on the functioning and sustainability of primary health care. Negative effects were greatest in poor countries with many other diseases of public health importance. If poor countries are expected to divert funds from their own urgent priorities, donors should make solid commitments to long-term support for sustainable health development. (*Am J Public Health.* 1997;87:922–925)

Introduction

In 1988, the World Health Assembly unanimously approved the goal of polio eradication by the year 2000 with the proviso that a global partnership should strengthen health care systems.[1] As programs for a polio-free world intensify to meet the end of the century deadline, there are growing concerns about the global commitment to support sustainable health services.

A basic policy question is, How will global goals and local priorities be balanced, and what are the ethical implications of current choices? The specific underlying questions are as follows: Should poor countries, with many health problems that could be controlled, divert their limited resources for a global goal that has low priority for their own children? When wild virus remains only in a few sites, will rich countries, and the global organizations they influence, promote eradication as a single-focus activity? Should poor countries expect donors to improve upon past experience and use the opportunity and financial benefits from polio eradication to build sustainable health systems for the world's neediest children?

Who Will Benefit Most from Polio Eradication?

Progress in eradication is most evident in countries that already have well-established health infrastructures.[2–5] Now those countries face the dilemma of how long they will have to sustain immunization and surveillance costs. National polio control costs the United States $230 million annually, which is equivalent to about 76% of USAID contributions to child survival worldwide.[6] Also, while the United States has had no cases of wild-type poliomyelitis since 1979, an average of nine cases each year have been linked to oral polio vaccine.[7] Thus, there would be two immediate benefits for countries such as the United States.

Globally, benefit–cost analyses project that polio eradication benefits will exceed costs by 2007, with cumulative savings of $13.6 billion by 2040.[8] Savings are primarily in the cost of acute care and rehabilitation from paralysis. Such savings accrue almost entirely in industrialized countries, because paralyzed children in poor countries have little access to care. Changing the "base case" assumption for developing countries from 33% access to 0% access has virtually no effect on the global benefit–cost analysis, while changes in assumptions for industrialized countries have large effects.

Elimination of paralytic poliomyelitis will obviously benefit every country. However, benefits for children in poor countries must be balanced against many more common threats to health and life. Even in Southeast Asia and sub-Saharan Africa, where polio incidence remains highest, polio is responsible for less than 2% of years lived with disability.[9] Poor countries naturally give priority to problems such as pneumonia, malaria, diarrhea, measles, and malnutrition.[10] How much of the global savings from polio eradication will help poor countries address their priorities, especially considering that eradication is possible only with the cooperation of such countries?

Carl E. Taylor and Mary E. Taylor are with the Department of International Health, Johns Hopkins School of Hygiene and Public Health, Baltimore, Md. Felicity Cutts is with the Department of Epidemiology and Population Sciences, London School of Hygiene and Tropical Medicine, London, England.

Requests for reprints should be sent to Carl E. Taylor, DPH, MD, Department of International Health, Johns Hopkins School of Hygiene and Public Health, 615 N Wolfe St, Baltimore, MD 21205.

Editor's Note. See related comment by Sutter and Cochi (p 913) in this issue.

What Are the Costs, and Who Pays?

Donor support for global immunization peaked with the Universal Child Immunization Initiative in the early 1990s and has declined since then.[11] External funding for polio eradication is targeted for polio vaccine procurement (especially for National Immunization Days), international technical advisers, cold chain equipment, and laboratories for surveillance. Developing country governments are expected to fund the remaining costs, and all but the poorest countries are also expected to finance an increasing proportion of other Expanded Programme on Immunization vaccine costs.[12] In the Americas, host governments and communities have contributed about 80% of polio eradication costs.[2] Major cuts in donor funding for all health programs are being justified by growing use of terms such as self-reliance in financing services, decentralization, and community participation.[13,14] When local communities finance their own health care, preventive services such as immunization will have to compete with other concerns. People reasonably compare benefits of polio eradication with benefits of alternative services for their children.

International contributions are increasingly earmarked for polio vaccines and their delivery systems.[8] The global polio eradication strategy includes three methods for vaccine delivery: routine immunization services; National Immunization Days, conducted twice a year for 5 years with a goal of 90% coverage in polio-endemic countries; and mop-up vaccination in high-risk areas identified by surveillance.[3,5] It has been postulated that high coverage with National Immunization Days, repeated for several years, may be sufficient to eradicate polio.[15] This would be a sharp break from accepted policy, which stresses increasing vaccination coverage for all Expanded Programme on Immunization antigens and effective surveillance to respond rapidly to suspected polio outbreaks.[16] In the African region, the average coverage rate for infants for three doses of oral poliovirus vaccine was only 58% in 1995. Experience with National Immunization Days has been mixed. Despite high coverage of campaigns in eastern and southern Africa, early reports suggest that alternative community-based strategies would provide more long-term benefits in West African countries with weak health infrastructure (R. Knippenberg, written communication, March 1997). Little is known about the effort and resources needed for alternative strategies in the poorest countries.

Estimates of vaccine delivery costs through routine services, derived mainly from studies conducted a decade ago, range from $6 to more than $20 per child for the original six Expanded Programme on Immunization vaccines, with an average of $15.[10,17] Community contributions are typically much larger, especially for activities, such as National Immunization Days, that depend on volunteer and intersectoral efforts. The opportunity costs to communities and health services are great, diverting time and effort from other activities. In the past 15 years, structural adjustment policies for economic reform promoted by international banks have caused governments to cut health care budgets by a third to a half in most sub-Saharan African countries.[18] Public sector salaries are becoming increasingly meaningless in some countries where health workers live largely on per diems from vertical programs. Any consideration of cost must include incentives given to health personnel to compensate for current public sector working conditions.[19] Estimates are needed of the true health investments required for hard-to-reach groups in which wild virus strains will presumably remain longest.

Eradication is, by definition, sustainable, since the virus would no longer exist. However, this does not equate automatically with developing the sustainable health systems implied in the World Health Assembly resolution. Priorities in low-income countries include safe motherhood, common childhood infections, tuberculosis, sexually transmitted diseases, and family planning/reproductive health.[10] These programs differ from polio eradication in their target groups, control strategies, and need for sustained contact with beneficiaries. Debates about how global target-driven programs affect sustainable primary health care have polarized policy discussions since the 1978 Alma Ata World Conference on Primary Health Care. Both positive and negative lessons were learned from eradication programs such as the smallpox initiative.[20] From the malaria eradication efforts of the 1960s, we should have learned not to extrapolate successes from the rest of the world automatically to the poorest countries in Africa and Asia.[21]

What Is the Past Experience?

Of particular value is the experience of the 1980s. We summarize now the results of two recent evaluations of the impact of the Expanded Programme on Immunization and polio eradication on primary health care systems and the sustainability of immunization programs.[11,22] (Carl E. Taylor chaired the Commission on the Impact of the Expanded Program on Immunization and the Polio Eradication Initiative on Health Systems in the Americas.[22] Mary E. Taylor was the principal researcher who gathered and analyzed field data and wrote the report of the steering committee for the United Nations Children's Fund study.[11] Felicity Cutts was a member of both evaluation teams.)

A 1995 report by a Pan American Health Organization commission[22] used in-depth rapid assessment procedure methods in six Latin American countries representative of those with wild poliovirus transmission in 1984. Positive and negative findings were carefully analyzed by interviewing sizable samples of four groups: polio eradication health workers, health workers in other services, knowledgeable public officials, and community representatives. Excellent support for this 2-year effort to gather objective information was provided by the Pan American Health Organization's Polio/Expanded Programme on Immunization group. The overall conclusion was that polio eradication contributed positively to health systems and helped generate a "culture of prevention" in these middle-income countries with well-established health infrastructures. Most positive was the promotion of social mobilization and intersectoral cooperation, two of the Alma Ata primary health care goals that have been the most difficult to implement. The Expanded Programme on Immunization strengthened managerial, epidemiological, and laboratory capacity and was an important catalyst for donor coordination. The management, laboratory, and surveillance systems helped in measles elimination activities.[23]

However, a common negative effect in the poorer countries was that targeting of immunization programs caused diversion of resources and effort at "the expense of other health activities." Nega-

tive observations were made when social mobilization produced excessive top-down pressure and "negative feelings about repeated visits for only one purpose." A strong conclusion was that the benefits of polio eradication in the Americas can be directly applied to policymaking only in countries with established and sustainable health systems, strong leadership at central and district levels, a well-organized infrastructure, and local ownership and decision making.

A 1995 United Nations Children's Fund study[11] focused on the sustainability of universal child immunization in achieving 80% coverage with all Expanded Programme on Immunization vaccines by 1990. Case studies in six countries in Africa and Asia, along with a desktop review of global activities, were conducted. The greatest achievement was reported to be raising the immunization coverage of infants worldwide to 80% in a short time period, although only somewhat more than half of developing countries reached 80%. Universal child immunization helped focus global attention on prevention and demonstrated that services could effectively reach the periphery.

However, the increase in global coverage obscured problems in many poor countries. In the African region, 25% of countries reported 80% or higher coverage for three doses of oral poliovirus vaccine in 1990, but only 17% achieved this rate in 1994/95.[24] In the case study countries, health service personnel said that, because universal child immunization goals were set globally and negotiated politically, there was little local involvement in setting targets, which were imposed on national health systems and communities. When health systems were weak, universal child immunization tended to override local delivery strategies and create parallel and unsustainable systems of financing, vaccine supply, transport, and supervision. Top-down social mobilization increased apparent local participation, but communities were simply told what to do. Conflict resulted between local demand for integrated services, especially essential drugs, and national immunization targets.

When donor support for recurrent costs waned after 1990, little capacity or commitment to maintain coverage remained in poor countries. In an independent study in Ghana,[25] a district medical officer said, "The approach used was: here is the money, go out! We want 80 percent by December." A 1992 review reported that a rapid rise in coverage was followed by a fall; the rate leveled off at approximately 32%.

What Have We Learned?

Have the international agencies planning polio eradication heeded these lessons? Projections of high benefit–cost ratios are based on time limits for different regions.[8] If implementation is delayed, costs will rise substantially, as rich countries continue intensive surveillance and mop-up activities. Gradually developing programs will seem more costly than originally anticipated. Benefit–cost ratios are very different when seen from the perspective of poor countries. Direct costs from paralytic polio are low, and relative risk judgments emphasize other priorities. In any case, the costs of routine immunization must be met for a growing number of vaccines.

Donors exert great influence on health systems in poor countries; for example, they contribute, on average, 19.5% of health expenditures in sub-Saharan Africa (40% or more in 13 countries), as compared with an average of less than 2% in the rest of the world.[26] We consider it shortsighted for donors to use their considerable influence to promote polio eradication if this delays or diverts long-term investment by poor countries in sustainable health systems. It would still be a good bargain for rich countries to use projected benefits from polio eradication to help build sustainable health systems in poor countries. A solid commitment by donors to long-term aid (with clear process indicators) that builds sustainable services could ensure continuing benefits in poor countries and reduce the potential for the spread of other diseases. Health systems development should include community representation in decision making, the shared setting of goals and priorities, and local ownership and control of resources and services.

Building of infrastructure was what was promised in the unanimous World Health Assembly resolution. The consortium of donors who have the most to gain from rapid eradication should not only bear most of the costs of eradication activities but also fulfill that promise. Polio eradication will be a gift to the 21st century only if donors and governments act in partnership to ensure long-term benefits for the least developed countries and poorest communities. □

References

1. World Health Assembly. *Global Eradication of Poliomyelitis by the Year 2000.* Geneva, Switzerland: World Health Organization; 1988. Resolution WHA 41.28.
2. De Quadros CA. Strategies for disease control/eradication in the Americas. In: Cutts FT, Smith PG, eds. *Vaccination and World Health.* Chichester, England: John Wiley & Sons Inc; 1994:17–34.
3. Hull HF, Ward NA, Hull BP, Milstien JB, de Quadros C. Paralytic poliomyelitis: seasoned strategies, disappearing disease. *Lancet.* 1994;343:1331–1337.
4. Progress toward global poliomyelitis eradication. *MMWR Morb Mortal Wkly Rep.* 1995;44:273–281.
5. *Report of the 1st Meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis.* Geneva, Switzerland: World Health Organization; 1995. WHO/EPI/GEN/95.6.
6. Pub L 104–107, 110 Stat 706 (1996).
7. Sutter RW, Onorato IM, Patriarca PA. Current poliomyelitis immunization policy in the United States. *Pediatr Ann.* 1995;19:702–706.
8. Bart KJ, Foulds J, Patriarca P. Global eradication of poliomyelitis: benefit-cost analysis. *Bull World Health Organ.* 1996;74:35–45.
9. Murray CJL, Lopez AD. Quantifying disability: data, methods and results. In: Murray CJL, Lopez AD, eds. *Global Comparative Assessments in the Health Sector. Disease Burden, Expenditures and Intervention Packages.* Geneva, Switzerland: World Health Organization; 1994:55–98.
10. World Bank. *World Development Report 1993: Investing in Health.* Oxford, England: Oxford University Press Inc; 1993.
11. Taylor ME, LaForce FM, Basu RN, Cutts F, Ndumbe P, Steinglass R. *Sustainability of Achievements: Lessons Learned from Universal Child Immunization—Report of a Steering Committee.* New York, NY: United Nations Children's Fund; 1996.
12. Expanded Programme on Immunization. *Vaccine Supply. The First Line of Defense.* Geneva, Switzerland: World Health Organization; 1993.
13. *Health Strategy for UNICEF.* New York, NY: United Nations Children's Fund; 1995.
14. *Bridging the Gaps.* Geneva, Switzerland: World Health Organization; 1995.
15. Cruz RR. Cuba: mass polio vaccination program, 1962–1982. *Rev Infect Dis.* 1984;6:S408–S412.
16. Jamison DT, Torres AM, Chen LC, Melnick JL. Poliomyelitis: what are the prospects for eradication and rehabilitation? *Health Policy Plann.* 1991;6:107–118.
17. Brenzel L. *The Cost of EPI: Lessons Learned from Cost and Cost-Effectiveness Studies of Immunization Programs.* REACH project paper 1990 (unpublished document. Basics Project, Suite 300, 1600 Wilson Blvd, Alexandria, VA 22209).
18. Evans I. SAPping maternal health. *Lancet.* 1995;346:1046.
19. Abel Smith B. The world economic crisis, part I: repercussions on health. *Health Policy Plann.* 1986;1:202–213.
20. Greenough P. Intimidation, coercion and resistance in the final stages of the South Asian smallpox eradication campaign, 1973–1975. *Soc Sci Med.* 1995;41:633–645.
21. Siddiqi J. *World Health and World Politics. Part III Case Study: The Malaria Eradication Programme.* Columbia, SC: University of South Carolina Press; 1995:123–192.
22. *The Impact of the Expanded Program on Immunization and the Polio Eradication Initiative on Health Systems in the Americas. Report of the Taylor Commission.* Washington, DC: Pan American Health Organization; 1995.
23. De Quadros CA, Olive J-M, Hersh BS, et al. Measles elimination in the Americas. Evolving strategies. *JAMA.* 1996;275:224–229.
24. *EPI Information System—Global Summary.* Geneva, Switzerland: World Health Organization; 1996. WHO/EPI/CEIS/96.07.
25. Lafond A. *Sustaining Primary Health Care.* London, England: Earthscan Publications Ltd; 1995:149.
26. Michaud C, Murray CJL. External assistance to the health sector in developing countries: a detailed analysis, 1972–90. In: Murray CJL, Lopez AD, eds. *Global Comparative Assessments in the Health Sector. Disease Burden, Expenditures and Intervention Packages.* Geneva, Switzerland: World Health Organization; 1994:157–170.

Erratum

In: Rasmussen KM, Adams B. Annotation: cigarette smoking, nutrition, and birthweight. *Am J Public Health.* 1997;87:543–544.

The name of the second author, Barbara Abrams, was incorrectly printed as Barbara Adams.

Main Identity

From: "amol" <amol_p@vsnl.com>
To: <drugactionindia@healthyskepticism.org>
Sent: Wednesday, January 07, 2004 8:24 AM
Attach: Polio Rupa Chinai.rtf; Polio-Kale.rtf
Subject: [drugactionindia] polio eradication

Dear all,
Dr. Ashok Kale and Dr. N. S. Deodhar two public health experts in Pune have also fundamentally questioned the objective of eradicating polio virus. Attached herewith is a news report prepared by Rupa Chinai on this debate and Dr. Kale's note. The power point presentation by Dr. Deodhar is a big file. I would send it those who ask for it.

With Regards,
Sincerely Yours,
Anant Phadke

WISH YOU A MEANINGFUL, PEACEFUL NEW YEAR !
Anant & Sandhya Phadke,
8, Amey Ashish Co-op. housing society,
Near Kokan Express hotel, off Karve Road,
Kothrud, Pune 411029.
phone no. - 020 5460038

Polio file (reserve)

1/7/04

1/7/04

Dear Rupa Chinai,

I think that the argument about polio accounting for only 20% of cases of AFP is only a secondary level of argument. The primary argument is that it is impossible to eradicate the polio virus from the earth and hence to stop the polio vaccination, like in the case of small pox. Hence I suggest that the argument about gross over-estimation of polio induced lameness be shifted to the end.

It may be a good idea to start by quoting Dr. N. S. Deodhar, the senior most public health expert in Pune. I have pasted below his argument from his presentation at a recent academic programme on polio eradication in School of Health Sciences, Pune University. Dr. Kale was the main presenter and Dr. Deodhar was the expert commentator.

I hope, you would find these changes suggested below in the track-changes mode, useful.

WR

SY

Anant Phadke

By Rupa Chinai

Mumbai:

Speaking at a recent academic programme on polio eradication in School of Health Sciences, Pune University, Dr. N. S. Deodhar, a very senior public health expert in Pune, said that "Pulse Polio Strategy is a cost-disaster and is epidemiologically unsound." He explained -- "Vaccination has no effect what-so-ever on environmental transmission of the virus. Secondly, even with more than 3 doses of OPV many children are not fully protected and may either get paralytic polio or get infected & discharge the virus in the faeces/environment. A small percentage of " immunized children" may get sub-clinical infection of polio and are thus able to spread the virus.

Thus, there are enough number of such susceptibles to get infected, allowing polio virus to multiply and disseminate in the environment under unsanitary conditions.

Even a very small fraction of the population is adequate for the wild virus to maintain itself and by chance come across a susceptible child."

Some public health experts in India say that the aim of polio-eradication (meaning eradication of the wild polio virus from the earth and not merely elimination of polio-disease) is unattainable and the current `pulse polio' programme is diverting attention and resources from more urgent, pressing health problems. Unlike smallpox, the polio virus is not a suitable microbe for eradication, they said.<PI>

Ashok Kale, Pune based community medicine expert and chief of the medical wing of the Akhil Bharatiya

Deleted: .....

Deleted:

Deleted: The polio virus only contributes to 20 per cent of limb paralysis cases. Data from India, the Americas and Vietnam, published in reputed scientific journals, clearly establishes that a substantial proportion of patients of Acute Flaccid Paralysis are not due to the polio virus but due to some other enteroviral infection.<PI> Experts say these findings have major implications on India's pursuit of the Rs.500 crore a year, `pulse polio' programme, which is part of an international effort aimed at eradicating the wild polio virus from the face of the earth. <PI> For many years there has been an assumption, even in the medical fraternity, that limb-lameness or paralysis implied polio. Extrapolation of polio prevalence in the country was calculated on the basis of detection of such cases in sample surveys, leading to exaggeration of the polio figures. <PI> Recent studies have now shown that physical symptoms of polio are mimicked by a number of other viral infections like ECHO, Coxackie and Japanese Encephalitis. New international guidelines now require that confirmation of polio cases require laboratory testing of stool samples for detection of the wild polio virus <PI> With the implementation of surveillance activities and isolation of the wild polio virus from the stool samples of Acute Flaccid Paralysis (AFP)cases, it was found that the number of polio cases never exceeded 20 per cent. In India, this was evident in papers published by the Indian Academy of Pediatrics and the Indian Journal of Pediatrics. For instance in the year 2002 out of 9,711 cases of AFP, the polio virus was found in 1,600 cases (16 per cent). The rest had ... [1]

Deleted: n medical experts

Grahak Panchayat said, ``It is clearly impossible to eradicate polio and hence to stop the polio vaccination, like in the case of small pox, India is chasing an unattainable mirage. The resources and effort mobilised for the polio programme are not cost-effective. It also adversely affects other health-care programmes. The sensible approach is to have a control programme with routine oral polio vaccination, as part of the national child immunisation programme. Eradication meanwhile, should be left to elimination of poverty, malnourishment and sanitation".<PI>
Placing too much emphasis on vaccination as a strategy for controlling polio is meanwhile, fraught with problems, said Anant Phadke, a public health expert with the Centre for Enquiry Into Health and Allied Themes. The oral polio vaccine involves use of the live but weakened polio virus, which can mutate and rivert back to its wild form. Persons with immune deficiency are known to shed the polio virus for several years after receiving the vaccine, and this poses a threat to the community that suffers from poor access to clean water and sanitation.<PI>
WHO-declared `polio free zones', such as Haiti, saw a polio epidemic a decade after it was assumed that the country had freedom from the disease. Investigations by the Centre for Disease Control in the US found that the weakened virus used in the OPV had mutated back to its wild state, causing paralytic disease in a group of children who had either not been vaccinated or had not received a complete course of the vaccine. <PI>
While advanced countries like the US discarded the use of OPV, because OPV is known to have the potential to cause `vaccine developed polio'. and took to the injectable Inactivated Polio Vaccine (IPV), which uses the killed polio virus, India since the past eight years, has continued to pump its children with excessive doses of OPV, through repeated rounds of the `pulse polio' campaign launched since 1995.<PI>
The IPV does not however provide a feasible option either. Apart from being expensive -- a 100 times costlier than the OPV -- it cannot assure safety either. It cannot act against the multiplication of the wild polio virus found in the human gut.<PI>
A conference of pediatricians in Mumbai early this year, warned that the current emphasis on polio is

Deleted: and to stop polio vaccination

Deleted: OPV is known to have the potential to cause `vaccine developed polio'.

backfiring in states like UP, where public resistance to such vaccination campaigns is being reported. Pursuing the "elusive target" of polio eradication activities is overlooking the enormous costs, and forced health authorities to turn a blind eye to damage done by other diseases long thought to be waning over the years. In some areas of UP, polio-eradication is the only public health activity being done by the slender public health staff, experts said.<PI>

Dr. Kale further argues "The polio virus only contributes to 20 per cent of limb paralysis cases. Data from India, the Americas and Vietnam, published in reputed scientific journals, clearly establishes that a substantial proportion of patients of Acute Flaccid Paralysis are not due to the polio virus but due to some other enteroviral infection.<PI>

These findings have major implications on India's pursuit of the Rs.500 crore a year, 'pulse polio' programme, which is part of an international effort aimed at erradicating the wild polio virus from the face of the earth. <PI>

For many years there has been an assumption, even in the medical fraternity, that limb-lameness or paralysis implied polio. Extrapolation of polio prevalence in the country was calculated on the basis of detection of such cases in sample surveys, leading to exaggeration of the polio figures. <PI>

Recent studies have now shown that physical symptoms of polio are mimicked by a number of other viral infections like ECHO, Coxackie and Japanese Encephalitis. New international guidelines now require that confirmation of polio cases require laboratory testing of stool samples for detection of the wild polio virus. <PI>

With the implementation of surveillance activities and isolation of the wild polio virus from the stool samples of Acute Flaccid Paralysis (AFP)cases, it was found that the number of polio cases never exceeded 20 per cent. In India, this was evident in papers published by the Indian Academy of Pediatrics and the Indian Journal of Pediatrics. For instance in the year 2002 out of 9,711 cases of AFP, the polio virus was found in 1,600 cases (16 per cent). The rest had paralysis from other causes. Such evidence is also

The polio virus only contributes to 20 per cent of limb paralysis cases. Data from India, the Americas and Vietnam, published in reputed scientific journals, clearly establishes that a substantial proportion of patients of Acute Flaccid Paralysis are not due to the polio virus but due to some other enteroviral infection.<PI>

Experts say these findings have major implications on India's pursuit of the Rs.500 crore a year, `pulse polio' programme, which is part of an international effort aimed at erradicating the wild polio virus from the face of the earth. <PI>

For many years there has been an assumption, even in the medical fraternity, that limb-lameness or paralysis implied polio. Extrapolation of polio prevalence in the country was calculated on the basis of detection of such cases in sample surveys, leading to exaggeration of the polio figures. <PI>

Recent studies have now shown that physical symptoms of polio are mimicked by a number of other viral infections like ECHO, Coxackie and Japanese Encephalitis. New international guidelines now require that confirmation of polio cases require laboratory testing of stool samples for detection of the wild polio virus. <PI>

With the implementation of surveillance activities and isolation of the wild polio virus from the stool samples of Acute Flaccid Paralysis (AFP)cases, it was found that the number of polio cases never exceeded 20 per cent. In India, this was evident in papers published by the Indian Academy of Pediatrics and the Indian Journal of Pediatrics. For instance in the year 2002 out of 9,711 cases of AFP, the polio virus was found in 1,600 cases (16 per cent). The rest had paralysis from other causes. Such evidence is also demonstrated in studies from the Americas and Vietnam.<PI>

The costly Mirage of Polio Eradication

Dr. Ashok Kale

Almost everybody seems to be convinced that in the very near future. India would eradicate polio; in near future, the whole world will have eradicated polio and like small-pox, after a few years polio-vaccination would be stopped.

Attached below, is the article of Alan Dove, which convincingly argues that it will not be possible to stop polio-vaccination in the developed countries. At the end, I have drawn my conclusion from his article, have commented upon it and have added a couple of points.

The Polio Eradication Effort: Should Vaccine Eradication Be Next?

Alan W. Dove, Vincent R. Racaniello
http://www.sciencemag.org/help/
*The authors are at the Department of Microbiology, Columbia University College of Physicians and Surgeons, New York, NY 10032, USA.
*
To whom correspondence should be addressed. E-mail: vrr1@columbia.edu

Eradication of smallpox ranks as one of medical science's greatest contributions to public health, saving millions from disease and eliminating the need for vaccination. The World Health Organization (WHO), in cooperation with the Centers for Disease Control and Prevention (CDC), Rotary International, and governments around the world, is in the process of completing another such accomplishment, but in a considerably different social climate and with a different pathogen. The worldwide effort to eradicate polio is likely to reach its goal by 2003, if current levels of funding and cooperation continue. While we applaud this goal and the progress that has been made, we feel that the crucial final steps in the campaign need to be reconsidered.

The WHO has implemented a plan that takes advantage of the seasonal nature of poliovirus spread. National Immunization Days (NIDs) are held during the winter, or "polio-low season." They involve massive publicity campaigns, followed by door-to-door visits to unvaccinated households. Additional doses of the vaccine are distributed as needed during the "high season," when outbreaks occur. This approach maximizes the effect of vaccination and bypasses many of the logistical difficulties of a year-round effort. The eradication campaign uses live Sabin oral polio vaccine (OPV) exclusively, because it is cheaper than inactivated polio vaccine (IPV) and does not require trained personnel and sterile needles (1),resources which many lesser developed countries lack. The WHO also rigorously tracks cases of infantile paralysis and screens sewage and river water for poliovirus in targeted areas. Whenever an outbreak is detected, a local immunization campaign is carried out to prevent the virus' spread (2). The results of the eradication effort have been impressive. Poliomyelitis caused by wild-type poliovirus (wild polio) is rapidly vanishing from even the most remote regions worldwide. The CDC projects that the world will be polio-free by 2003 (3), leaving behind a medical infrastructure for vaccination that can then be used in a campaign against measles. Under this plan, polio vaccination will be stopped by 2005, which will save about $200 million a year in vaccine-associated expenses in the U.S. alone (3).

After this date, laboratory stocks of poliovirus would veither be destroyed or restricted to high –level containment facilities (3). While this plan is promising, it is not complete. Because the WHO is relying on OPV, certification of an area as "polio-free' is accurate only by a narrow definition: no wild polio detectable in the population, sewage, or the drinking water over a period of years. Because Sabin strains mutate readily back to

virulentforms (4), potentially pathogenic viruses are still being released into the aquifers. Vaccine-associated poliomyelitis will still occur in these "polio-free" areas, at rates of 1 in 300,000 (5) to 1 in

500,000 (6) recipients of OPV. Because recycling of waste water is necessary in many parts of the world, virus excreted by vaccinees may persist indefinitely (7). A broader, more intuitive definition of eradication would be elimination of both vaccine and wild strains--a goal that cannot occur if only OPV is used. Difficulties in distribution and lack of medical resources are cited as reasons for using OPV, but terminating the effort without making a transition to IPV contradicts theWHO goal of establishing an infrastructure for future eradication campaigns. One way to accomplish both goals would be to continue polio vaccination until IPV can be distributed worldwide. Then http://216.239.41.100/search?q=cache:Kk5dnb2sBLQJ:cumicro2.cpmc.columbia.edu/Poliolab/ - 3http://216.239.41.100/search?q=cache:Kk5dnb2sBLQJ:cumicro2.cpmc.columbia.edu/Poliolab/ - 3http://216.239.41.100/search?q=cache:Kk5dnb2sBLQJ:cumicro2.cpmc.columbia.edu/Poliolab/ - 3the campaign would not be an isolated effort, but part of a broader public health initiative (8). Before vaccination can be stopped safely, it will be necessary to destroy most existing viral stocks and restrict access to the remainder to prevent accidental and deliberate release. For smallpox, virus stocks were located in only a few institutions before eradication, which meant that inventory control was relatively straightforward. There is no central record of poliovirus stocks, which are distributed among hundreds, or possibly thousands, of sites. Without an accurate inventory, it is unlikely that all virus stocks can be found and destroyed. For example, during structural
studies of coxsackievirus B1, an enterovirus, it was discovered that the virus stock was contaminated with polio (9). This incident emphasizes the difficulty in identifying poliovirus repositories in research laboratories. Experience with influenza virus suggests that accidental release of an infectious agent from laboratory stocks may occur (10). As with smallpox, there is the possibility that some wild virus will survive for long periods in the environment (11, 12). Even if total virus destruction could be accomplished, the small size of the poliovirus genome (7.5 kb), whose sequence is known (13, 14) and whose complementary DNA is infectious (15), would make it possible for a terrorist to synthesize a new stock.
In the post-vaccine world, the susceptible population would increase each year and the large number of potential sources of reintroduction would soon constitute a major threat. Vaccination of laboratory would either be destroyed or restricted to high-level containment facilities (3). While this plan is promising, it is not complete. Because the WHO is relying on OPV, certification of an area as "polio-free" is accurate only by a narrow definition: no wild polio detectable in the population the sewage, or the drinking water over a period of years. Because Sabin strains mutate readily back to personnel who are studying the virus or maintaining emergency vaccine stocks then creates a dilemma. If workers are vaccinated with OPV, they will shed live poliovirus into the environment. Use of IPV would allow these workers to act as carriers (because infection of the gut is still possible), increasing the probability of an outbreak. For smallpox, the fact that vaccine and virulent strains differ substantially made it possible to avoid this difficulty.
To evaluate the potential impact of a single reintroduction of poliovirus into the post-vaccine world, we can use the 1992-93 Dutch epidemic as a model. In this incident, 67 cases of paralytic poliomyelitis were reported, but the virus spread to many more individuals. High levels of vaccination with IPV meant that the paralytic cases were restricted almost entirely to members of a religious group that

refused the vaccine (16). Within this subpopulation and its immediate contacts, the virus spread very efficiently; ~7% of the children in this group were actively secreting wild polio in a single sampling taken during the epidemic (17). This epidemic occurred in a nation with high standards of health care, where paralytic cases were reported promptly and additional doses of IPV and OPV were distributed to the affected area immediately. Such high standards of preparedness are unlikely to continue after cessation of vaccination. In a city of 10 million unvaccinated individuals, a rough estimate would be that a single release of virus could result in 7000 paralytic cases. It would take more than 700 years of vaccination to produce that number of cases of vaccine-associated paralysis in the U.S.

The control of poliomyelitis has substantially improved the quality of life worldwide, and the completion of this task will allow lesser developed countries to focus on other public health issues. To succeed, however, the polio eradication effort should take a balanced approach as part of a larger campaign to improve health and sanitation.

REFERENCES

1."Global poliomyelitis eradication by the year 2000. Plan of action" (WHO, Geneva, 1996).
2 S. E. Robertson, *et al .*, *Bull. WHO* **72**, 907 (1994) [Medline]

3. O. Kew, in a lecture at the American Society for Virology Annual Meeting, London, Ontario, 1996.
4. P. D. Minor, *et al.*, *Biologicals* **21**, 357 (1993) [Medline].
5. J. L. Melnick, *Clin. Immunother.* **6**, 1 (1996).
6. A. J. Beale, *Pediatr. Infect. Dis.* **10**, 970 (1991).
7. H. Knolle, *Gesundheitswesen* **57**, 351 (1995) [Medline].
8. T. A. Swartz, *Public Health Rev.* **21**, 157 (1994).
9. E. Arnold, personal communication.
10. K. Nakajima, *et al.*, *Nature* **274**, 334 (1978) [Medline].
11. C. J. Hurst, *et al.*, *Can. J. Microbiol.* **35**, 474 (1989) [Medline].
12. M. V. Yates *et al.*, *Appl. Envir. Micro.* **49**, 778 (1985).
13. V. R. **Racaniello** and D. Baltimore, *Proc. Natl. Acad. Sci. U.S.A.* **78**, 4887 (1981) [Medline].
14. N. Kitamura, *et al.*, *Nature* **291**, 547 (1981) [Medline].
15. V. R. **Racaniello** and D. Baltimore, *Science* **214**

Points not covered in Dove's article -

The limitation of Dove's article is that though the article creates enough basis to question the aim of eradication of polio, it does not do so. This is perhaps because, based in the US, he has no concrete idea about how in the third world countries, the polio-eradication programme is diverting attention and resources from more important, pressing health problems.

I would argue that it's clear from impossible to eradicate polio and to stop polio vaccination. Hence in India the special efforts taken and money being spent under the illusion that polio eradication is possible is all uncalled for. As in the case of smallpox, if by polio-eradication, is meant elimination of the wild poliovirus from the earth's environment; so that polio-vaccination becomes unnecessary forever; this aim is unattainable. But if we take a more limited view that by polio-eradication we mean absence of clinical cases of Acute Flaccid Paralysis (AFP) due to the polio-virus, the extra-efforts being taken for the 'mop up operations' on detection of polio-cases and for National Immunization Days for Polio-vaccination, are not cost-effective. They also adversely affect other health-care programmes in India. Hence these special efforts be abandoned. Instead a more cost-effective, realistic policy of systematic efforts to increase the coverage of routine OPV be carried out. Secondly such medical technical measures must be backed up with healthy developmental measures like eradication of mass-poverty and hence malnourishment as well as universal improvements in water and sanitation. Its only then can we bring down to almost zero, even with routine immunization, the incidence of AFP due to the polio-virus. To try to achieve elimination of the wild poliovirus from the earth's environment, without radical improvement on the front of nutrition, water, sanitation, poverty-eradication is a medico-technical mirage. The sensible approach would be to have a control programme with OPV and leave eradication to elimination of poverty, malnourishment and sanitation.

There are three more problems with the polio eradication strategy which have not been address by Dove.

1) Data from the Americas, from Vietnam and how even from India (Mumbai, U.P) clearly establishes that a substantial proportion of patients of Acute Flaccid Paralysis are not due to the polio virus but due to some other enteroviral infections.[1,2,3,4] In the Americas, over the period 1989-91, 838 (67) isolates were NPEV (non polio entero viruses) out of 6000 [1]. In Vietnam (1995), out of 22 AFP cases only one case had wild polio virus in stool sample, while three had NPEV and twelve had Japanese Encephalitis Virus in their faeces [2]. In one of the Sentinel Centres of Mumbai, in the year 98-2000, out of 98 cases of AFP, only 13 were due to polioviruses and 18 due to NPEV. [3]. Even in Uttar Pradesh, in 1998, in a study, out of 563 AFP cases, 163 (29 %) showed Polio viruses in their faeces as compared to 191 (34 %) of NPEV[4]. However, this fact was not known earlier in India when the incidence of polio-induced lameness was estimated in the eighties. All limb-lameness was assumed to be due to the polio viruses and hence there has been gross overestimation of polio-induced lameness and consequently a gross underestimation of the cost-efficacy of polio-vaccination.
2) Carl Taylor has any way pointed out that the cost-efficacy has been calculated in the context of western countries, with the focus on savings on expenses on paralysed children admitted for treatment and recovery[5]. These calculations are not valid for India.
3) Dove has not touched upon the political economy of polio-vaccination.

To pursue the mirage of eradication of the polio-virus, the logical step is to shift to Injectable Polio Vaccine (IPV), despite the fact that it is exorbitantly costlier than the OPV. Yet the Indian Academy of Pediatrics has recommended this measure! Such a measure would serve the interests of the IPV manufacturers. Unlike the Sabin vaccine, the IPV has no action at the gut level, and hence it will not decrease the circulation of the wild-virus. This strategy it will therefore, not eliminate the wild polio virus from the environment. The only advantage would be, unlike the Sabin vaccine, it will not cause vaccine induced polio. That is why it is being used in the rich countries.

The rich countries are interested in eradication of polio in developing countries because they can not stop the costly IPV programme in their own countries till polio is eradicated in the poor countries also. They are putting pressure on the poor countries to take up this polio eradication programme; though, for the poor countries, it means diverting resources from more pressing issues. India is spending Rs. 500 crores a year for the polio-eradication programme, only 20% of which is grant from the international agencies. In some areas in UP, polio-eradication programme is the only public health activity being done by the slender public health staff.

The rich countries want to stop their expenditure on IPV and hence the poor countries have been brainwashed into taking up the unattainable aim of polio-eradication. The ultimate result would be the failure to achieve polio-eradication in both the rich and the poor countries. But in the meanwhile, vested interests would have earned a lot of money!

References :

1. Dietz, J. Andrus, S.Cochi,et al, *Epidemiology and clinical characteristics of Acute Flaccid Paralysis associated with Non-Polio Enteroviruses* : the experience in the Americas,,Bulletin WHO, 1995,73 (5), 597-603.
2. Solomon, Racheel Kneen et al, *Poliomyelitis-like illness due to Japanese Encephalitis virus,* The Lancet,vol 351, April 11,1998,1094-1097.
3. Kantharia, Bawadekar, *AFP surveillance Experience From a Sentinel Centre,* IAP Maharashtra State Conference Souvenir , December 2001, page 113.
4. Amit Kapoor, A. Ayyagari and T.N.Dhole, *Non-polio Enteroviruses in Acute Flaccid Paralysis,* Indian Journal of Pediatrics, volume 68--October, 2001, pages 927-929.
5. Carl E. Taylor, *Ethical Dilemmas in Current Planning for Polio Eradication,* American Journal of Public Health, June 1997, vol 87, No. 6, pg 922-925.

****

vs

Close Print

Initiative on Public-Private Partnerships for Health

Profile

Global Polio Eradication Initiative (GPEI)

Contact Person(s)
Address

Mr. Olivier Rosenbauer, Communication Officer
Global Polio Eradication Initiative (GPEI)
World Health Organization
20 Avenue Appia
Geneva 27, 1211, Switzerland
Tel: +41 22 791 3832
Fax: +41 22 791 4193
Email: rosenbauero@who.int
http://www.polioeradication.org

Mission / Objective

- To interrupt transmission of the wild poliovirus globally and certify all WHO regions polio-free by the end of 2005.
- To conduct effective and high quality supplementary immunization activities, including national immunisation days and mop-up campaigns to interrupt wild poliovirus transmission.
- To develop and sustain certification standard surveillance and laboratory systems that can rapidly identify polio-infected areas.
- To ensure laboratory containment of wild poliovirus stocks.
- To develop a consensus strategy to stop polio immunisation after certification of eradication.
- To use polio eradication to strengthen and expand routine immunisation services.

Disease / Condition

Polio

Product / Service

Technical and financial support for all polio eradication activities, including supplementary immunization activities (ie. National Immunization Days), and acute flaccid paralysis surveillance including a global laboratory network. Support for routine immunization services, along with Vitamin A supplementation during polio National Immunization Days.

Legal status

No separate legal status. WHO programme.

Established

1988

Major Participants

Public sector

World Health Organization (WHO), World Bank, UNICEF, Danish Agency for Development Assistance (DANIDA), Belgium, Government of, Italy, Government of, Japan, Government of, US Agency for International Development (USAID), UK Department for International Development (DFID), US Centers for Disease Control & Prevention (CDC), Canadian International Development Agency (CIDA), Netherlands Ministry for Development Cooperation. Ministries of Health of all recently or currently polio endemic countries, including India, Pakistan, Afghanistan, Nigeria, Niger and Egypt.

Non-profit sector

Bill & Melinda Gates Foundation, Australian International Health Institute. Rotary International, De Beers, governments of Finland and Germany, Rotary Foundation and the United Nations Foundation.

Commercial sector

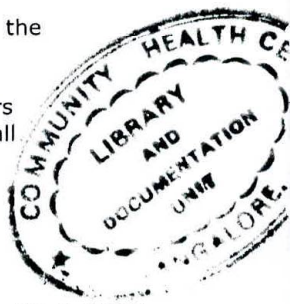
Aventis SA. Wyeth and De Beers.

Major funders

US Agency for International Development (USAID), Japan, Government of, Bill & Melinda Gates Foundation, Canadian International Development Agency (CIDA), US, Government of, Netherlands, Government of, UK Department for International Development (DFID). Rotary International, the United Nations Foundation.

Governance

A programme spearheaded by WHO, Rotary International, the US Centers for Disease Control and Prevention and UNICEF. WHO provides the overall technical direction and strategic planning for the management and coordination of the initiative.



Disclaimer Statement
Source: Partnerships for Health Email: info@ippph.org

Global Polio Eradication Initiative (GPEI)
Last Updated: 2003 January 29.

DIS-6A-2

global polio eradication

Polio news

Issue 18
March 2003

World's press watches polio

WITH the lowest number of polio-endemic countries ever, the world's press is focused on the Global Polio Eradication Initiative (GPEI). In the first few months of 2003, a number of major media outlets ran feature length stories on the Initiative. The New York Times ran a front-page story on the rise in polio cases witnessed in India last year, the Los Angeles Times published a five-page spread on Rotary International's role as the catalyst of the campaign, while USA Today ran a feature on world-renowned photographer Sebastião Salgado and his work in publicizing polio. These pieces were followed by items in the Wall Street Journal and both BBC World television and radio, focusing on the February immunization campaign in India.

Many media stories highlighted the fact that never before in the Initiative's history have so few countries remained endemic with wild poliovirus. The features went on to focus on the importance of reaching and vaccinating every child under the age of five, if polio is to be eradicated from those remaining countries. ♦

UNICEF plays crucial role in mobilizing communities

DR Iqbal Baig has been treating families in India's Meerut City for decades. Over time he has seen the city's population grow to 1.2 million and, more recently, a change in his job. In India – the country with the world's largest number of cases – Dr Baig is now 1 of 2500 Community Mobilization Coordinators employed by UNICEF in Uttar Pradesh. The state of 170 million people accounts for 65% of the world's polio cases. Dr Baig works with a team to reach households and ensure all children under five years of age are immunized against polio.

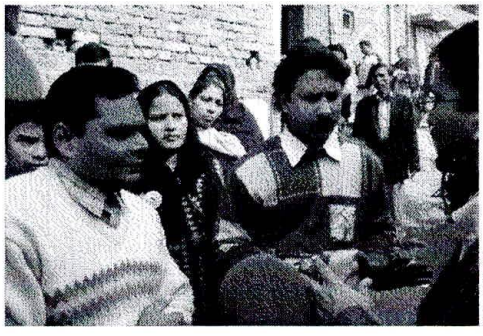


Photo: © UNICEF

Iqbal Baig (left), Subaida Khatoon (second from left) and Mohammed Farhat (center) receiving a briefing from UNICEF Field Coordinator, Kshitij Joshi (right)

This is one view into the people and efforts behind social mobilization activities in India during the largest polio immunization campaigns in the world, targeting 165 million children. Social mobilization is an important component of eradicating polio to raise awareness about immunizing all children; influence attitudes to generate support for eradication; and promote behaviour that ensures no child is missed. In India, ten days before this year's national immunization days (NIDs), television and radio advertisements, many featuring India's best known celebrity, Amitabh Bacchan, aired countrywide. Meanwhile, social mobilization efforts in Uttar Pradesh focus on 3000 high-risk villages.

Today, Dr Baig and his team are intensifying efforts so parents have their children vaccinated before the upcoming monsoon season when torrential rains create an environment that exacerbates poliovirus transmission. "We must motivate every resisting family, newcomer, and parent of newborns, before the rain sets in," Dr Baig sighed. "We have to try harder." ♦

USAID recognizes Ellyn Ogden's contribution to polio eradication. See page 4.

Contents

A global race...

Photo: © Rotary International/JM Giboux

for a global victory

WHO
ISSN 1727-3730

A Newsletter for
the Global Polio Eradication Initiative
Department of Vaccines & Biologicals
World Health Organization
in association with Rotary International,
United Nations Children's Fund and the
Centers for Disease Control and Prevention

Part Two

POST CERTIFICATION IMMUNIZATION POLICY

Framework for the Assessment and Management of Paralytic Polio in the Post-Certification Era

The November 2002 interim meeting of the Technical Consultative Group (TCG) endorsed the framework (see below), which has been developed to summarize the risks of paralytic poliomyelitis in the post-certification era. This framework will be particularly important for countries using Oral Polio Vaccine (OPV) and for developing policy decision models. The framework divides the risks into two major categories: (a) those due to vaccine-derived polioviruses (VDPVs) and (b) those due to the handling of wild poliovirus stocks.

In continuation from Polio News issue 17, which focused on risks associated with the use of OPV, this issue summarizes the nature and magnitude of the risks related to handling wild poliovirus stocks.

Risks of polio paralysis in the post-certification era**

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 polio)	One episode per year in 1999–2001 (Haiti, Madagascar, the Philippines,)	Approx. 10 cases per year (total of 29 cases in three years)
	iVDPV (immuno-deficient excretors of vaccine-derived polio)	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	

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

Technical tips

The importance of containment

THE Global Certification Commission for the Eradication of Poliomyelitis (GCC) will declare the world free of wild poliovirus transmission only when no wild poliovirus has been found for at least three years and appropriate measures have been implemented. Laboratories and inactivated polio vaccine (IPV) manufacturers will be the only remaining sources of wild poliovirus. "Experts agree that the current risks and consequences associated with inadvertent release of wild poliovirus are small, but we have to ensure a defined global containment strategy is in place to reduce those risks to the lowest possible level for now and in the future," says Dr Walt Dowdle, External Consultant to the Global Polio Eradication Initiative (GPEI) and head of the US containment effort. The 1978 laboratory associated smallpox outbreak in the United Kingdom emphasizes the need to address laboratory containment issues for infectious agents that no longer exist in nature. According to Dowdle, though, the challenges of polio containment are quite different from smallpox. Most obvious is the fact that many more laboratories around the world have wild poliovirus containing materials, as polio is a popular research tool and can cause clinically unapparent infections. This may potentially leave some laboratories unaware of the presence of wild polio in stored clinical materials. Additionally, large quantities of the wild virus are necessary for production of poliovirus vaccine. For these reasons, the global survey for laboratories with wild poliovirus will involve nearly 100 times the number surveyed for smallpox. "With a containment strategy in place, the risks of accidental release can be further minimized," concluded Dowdle. ♦

Poliovirus release – possible occurrence and consequences deemed 'low'

WHILE the risk of release due to mishandling of the wild poliovirus is low, the GPEI is actively addressing all three potential scenarios in which this might occur.

Scenario 1: accidental release from a laboratory

Between 1941 and 1976, 14 cases of paralytic polio occurred among laboratory workers. Since then, the population has been immunized and safety of laboratory technology has improved to a degree that makes inadvertent release of infectious virus much less likely. However, since laboratories will be the only remaining source of the virus once natural circulation is interrupted, it is important to take stock of all wild poliovirus now to ensure that laboratories with wild poliovirus are operating under appropriate biosafety conditions. Nearly 170 countries and territories worldwide have initiated national surveys of all biomedical laboratories to identify poliovirus materials, encourage destruction of unneeded materials, and implement appropriate biosafety conditions.

Scenario 2: accidental release from an IPV manufacturing site

Large quantities of live poliovirus are used in the production of IPV. One case of inadvertent release was recorded in the early 1990s, occurring during a period of universal immunization when no containment strategies existed. To prevent a repeat of this situation, such risks are being adequately managed. Manufacturers have worked closely over the past 18 months 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 manufacturers. As IPV manufacturing sites are located in industrialized countries, consequences of a potential release would be limited as these countries are planning to maintain high population immunity with IPV for the foreseeable future, and sanitation infrastructure is high.

Scenario 3: intentional release

This scenario is the least likely to occur, due to ongoing use of polio vaccines globally and the inherent limitations of poliovirus as biological weapons or bioterrorist tools. However, full evaluation of this risk depends on the polio immunization policies that are adopted worldwide in the post certification era. Most countries which have been suggested as potential targets for an intentional release plan to maintain population immunity with IPV for the foreseeable future, markedly reducing the probability of an intentional release and the implications in the unlikely event of such an occurrence. ♦

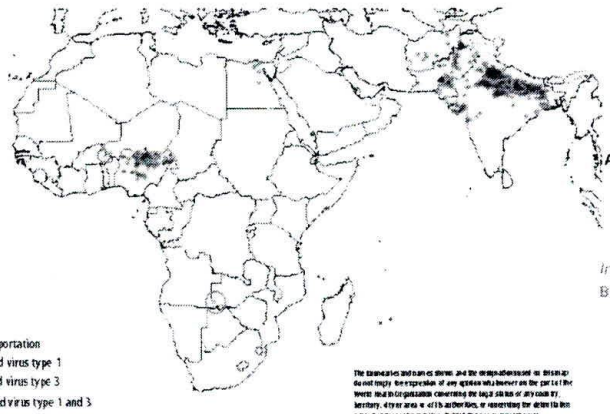
AFP and polio reporting, year-to-date *(data received at WHO Geneva as of 25 February 2003)*

Region	2001 (as of 25 February 2002) Non-polio AFP rate	Adequate specimen rate	Confirmed polio cases	Wild polio virus cases	Pending cases	2002 (as of 25 February 2003) Non-polio AFP rate	Adequate specimen rate	Confirmed polio cases	Wild polio virus cases	Pending cases
African[1]	2.20	71%	113	63	476	3.00	82%	214(**)	201	942
Americas	1.13	89%	10(**)	0	326	1.20	92%	0	0	328
Eastern Mediterranean	1.89	83%	139	139	253	2.26	88%	119	119	82
European	1.23	81%	3(*)	2(*)	236	1.19	82%	0	0	236
South-East Asia	1.78	83%	268	268	560	1.92	82%	1595	1595	582
Western Pacific	1.39	88%	0	0	610	1.33	88%	0	0	438
Global total	1.61	81%	533	472	2461	1.90	84%	1928	1915	2608

[1] *For African Region, pending cases refers to pending laboratory results.*
(*) *Importation.*
(**) *Vaccine derived polio virus. In 2001, in the American region, in Dominican Republic 3 cases and in Haiti 7 cases. In 2002, in the African region, in Madagascar, 4 cases.*

Wild poliovirus map

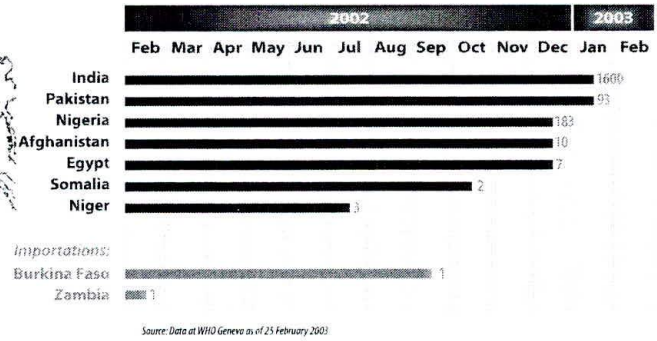
25 February 2002 – 24 February 2003



Importation
Wild virus type 1
Wild virus type 3
Wild virus type 1 and 3
Endemic countries

Timeline:

total wild poliovirus and date of most recent wild poliovirus by country from 25 February 2002 to 24 February 2003



Source: Data at WHO Geneva as of 25 February 2003

Snapshots from NIDS...

Photo: © India-JM Gilloux

Photo: © Nigeria-Rotary International/JM Gilloux

Photo: © Afghanistan-WHO/JM Gilloux

NIDs calendar for selected countries

Region	Country	April 2003 Type of activity Intervention	May 2003 Type of activity Intervention	June 2003 Type of activity Intervention
AFRO	Angola			27-June / NID / OPV Round 1
	Niger	26-April / SNID / OPV Round 1	29-May / SNID / OPV Round 2	
	Nigeria	01, 05, 26-April / SNIDs / OPV Round 2-3		
EMRO	Afghanistan	15-April / NID / OPV Round 1	20-May / NID / OPV Round 2 / Vit A	
	Egypt		02-May / NID / OPV Round 2	
	Pakistan	15-April / NID / OPV Round 2		03-June / SNID / OPV Round 1
	Somalia	April / NID / OPV Round 2		
	Sudan	01, 13, 17-April / SNIDs / OPV Round 2		
SEARO	Bangladesh	April / NID / OPV Round 1 / Vit A	04-May / NID / OPV Round 2	
	India	06-April / SNID / OPV Round 1	18-May / SNID / OPV Round 2	

This calendar reflects information known to WHO/HQ at the time of print. Some NIDs dates are preliminary and may change; please contact WHO/HQ for up-to-date information.

Rotary raising urgently needed funds to eradicate polio

ROTARY members are more committed than ever to achieving a polio-free world. To that end, Rotary has embarked on a new drive to raise US$ 80 million by June 2003. In addition, Rotary is reaching out to the public by way of a global advertising campaign. The ads, which are prominently appearing on television and in magazines in Australia and Canada during February and March, target receptive business and professional people. These ads are also being distributed as public service announcements worldwide.

In addition, a special add is airing on United Airlines' in-flight television network from February to April on all national and international flights. Passengers will be directed to a corresponding advertisement in United Airlines' "Hemispheres" magazine. The ad will give instructions on how to make a contribution to polio eradication.

Anyone wishing to contribute can send donations to: The Rotary Foundation – Polio, P.O. Box 75133, Chicago, IL 60675-5133, USA. Or visit: www.rotary.info ♦

Madagascar heroes recognized as tragedy overshadows NID

SIX people participating in an NID in Madagascar tragically died in October 2002, when their helicopter crashed while returning from successfully delivering polio vaccine to difficult-to-reach areas of the country. The helicopter was on its way back after finalizing the delivery of vaccines for the second phase of the NID when the accident occurred. The names of the six victims, Lt Colonel Davisa Ratsimandah; Lt Colonel Michel Nernet Miharivelo; Lt Colonel Emmanuel Rakotoniaina; Lt Flavien Yamicole; Andre Jaonera; and Major Solo Ratsimbazafy, have been nominated as 'Polio Eradication Heroes' of the CDC Foundation. The 'Heroes Fund' was established to assist families financially who have lost loved ones during polio eradication activities.

The activity will be remembered for the tragic death of the six Polio Eradication Heroes. ♦

Photo: © Pakistan Red Crescent Society

A Red Crescent volunteer in Pakistan administers the oral polio vaccine to a child. Over 490 volunteers worked tirelessly to raise awareness about immunization activities, and personally immunized over 360 000 children in 2002.

Pakistani Red Crescent volunteers instrumental in reaching hard-to-reach areas

PAKISTANI Red Crescent volunteers are turning out by the hundreds to help stop the virus. In 2002, the Pakistan Red Crescent Society actively recruited 491 men and women volunteers to systematically mobilize target communities for supplementary immunization activities (SIAs). Driving through the streets with megaphones, going door-to-door, the volunteers distributed 100 000 polio fact sheets (in English, Urdu and other languages), polio information stickers, brochures, badges, pens and banners, while posting over 90 000 posters announcing upcoming immunization campaigns. The Red Crescent's unique community-based advantage proved essential in visiting specific population groups in many otherwise hard-to-reach areas. By the end of the year, the Red Crescent volunteers alone had immunized well over 360 000 children. "Our volunteers did a fantastic job," commented Dr Fazil Moin, Secretary-General of the Pakistan Red Crescent Society. "Each and every one of them personally immunized over 900 children. Because they belong to target communities, the service they offer is uniquely valuable in reaching areas which otherwise would remain unvaccinated. It was a tremendous achievement and one we hope to build on in 2003." *In 2001-2002, Red Cross and Red Crescent volunteers have helped promote polio immunization days in Afghanistan, Bangladesh, Chad, Congo, the Democratic Republic of the Congo, Egypt, Ethiopia, Iraq, Liberia, Niger, Nigeria, Pakistan, Sierra Leone, Somalia and Sudan.* ♦

USAID Global Health Bureau recognizes Ellyn Ogden's contribution to polio eradication

Photo: © USAID

Ellyn Ogden highlights the importance of polio eradication at a recent donor meeting.

ELLYN OGDEN, USAID Polio Eradication Coordinator, has been granted the prestigious Sustained Outstanding Achievement Award by the Global Health Bureau, USAID, in Washington DC. The award recognizes Ogden's tireless commitment to polio eradication across the globe. "This official recognition is more than deserved," commented Richard Greene, Director, Office of Health, Infectious Diseases and Nutrition of the USAID Bureau for Global Health. "Ellyn's energy and commitment are second to none, having fought polio not just centrally, but first-hand in the field in countries such as the Democratic Republic of the Congo, Egypt and Ethiopia." Greene cited Ms Ogden's leadership in championing social mobilization activities, gaining increased support by local NGOs at national levels, and working to improve routine immunization services as examples of her many distinguishing characteristics. Ms Ogden has been involved in polio eradication since 1997, when she took on the global challenge as USAID Polio Eradication Coordinator. USAID has allocated more than US$ 200 million to the Polio Eradication Initative since 1996. ♦

Rotary steps up global volunteerism

AUSTRALIAN and Canadian Rotary members rang in the New Year while volunteering during the January 2003 NID in Cameroon. Another Rotary group of 85 from the United States joined members from Ethiopia to help immunize children against polio in that country. And, another group of Rotary members travelled to Nigeria in November, where their efforts were honored with a visit from the Emir of Kano, who also took part in the NID by immunizing local children.

Earlier, in October 2002, Rotary continued its high level of support to India by approving a grant of almost US$ 5 million for eradication activities in that country, bringing Rotary's total contributions there to more than US$ 46 million. Among other things, the grant helped pay for hiring local vaccinators, to go house-to-house. In November 2002, Rotary International President Bhichai Rattakul called on Rotary leaders in India to "redouble your efforts" to achieve polio eradication in Uttar Pradesh.

As an answer to this call, Rotary placed an information advertisement of a pro-immunization speech given at Moradabad by Dr. Naseem Ahmed, Vice-Chancellor of Aligarh Muslim University, in a number of newspapers for wider outreach.

In addition, 65 Rotary members from Canada and the United States joined Indian Rotarians, health workers, and other volunteers in the six day effort to vaccinate 165 million children under the age of five years.

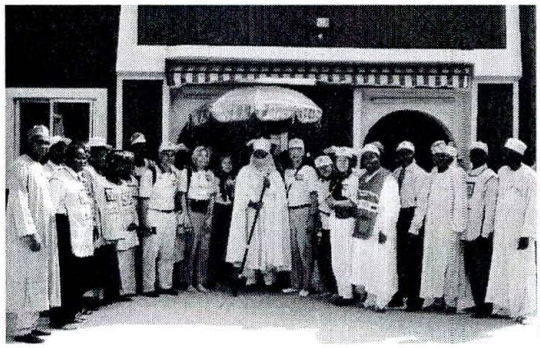


Photo: © Rotary International/JM Gibson

Rotary International volunteers from around the world are joined by the Emir of Kano in Nigeria to raise awareness of immunization campaigns.

Democratic Republic of the Congo: maximizing the polio experience

Polio infrastructure makes measles campaign possible

ON 13 December 2002, a measles campaign was launched in the North Kivu and East Kasai provinces of the Democratic Republic of the Congo (DRC) to immunize all children between 6 months and 15 years of age. To maximize immunization coverage for the event, the government organizers, with the assistance of UNICEF and WHO, drew on the experience and infrastructure of the GPEI to both plan and implement the campaign. Organizers adapted past polio successes to produce maps, organize cold chains for the vaccines, target social mobilization activities at schools, parents, and political administrators, and encourage parents and children to take advantage of the services offered. Nearly 3.2 million children were immunized (an estimated 96% coverage). "The polio eradication experience made the success of this activity possible," commented Dr Brad Hersh, EPI Medical Officer at WHO, Geneva. "The polio programme provided a perfect framework to reach almost all children and prevent many measles deaths."

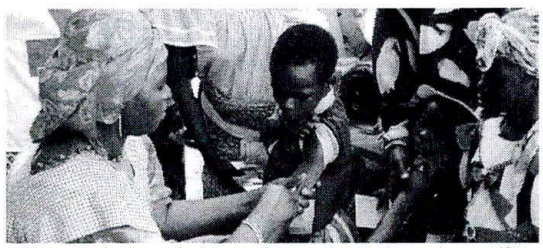


Photo: © WHO/B. Hersh

A child is protected against measles, during one of many mass immunization campaigns across Africa.

A model polio-free country

WITH an increasing number of countries attaining polio-free status, it is important to maintain vigilance and political commitment to ensure wild poliovirus is not reintroduced into a polio-free country. The DRC is a model example of a country doing exactly that.

Since confirming its last case of polio on 29 December 2000, the DRC has taken a number of steps to maintain its polio-free status, including continuing SIAs, consistently improving surveillance, and increasing the level of routine immunization.

The success of the DRC's post-polio programme is all the more extraordinary considering the country's infrastructure remains disjointed after more than a decade of civil war. Most roads are still impassable, making logistical organization of SIAs difficult. Volunteers, health workers and equipment often have to be transported by sea or air, putting a tremendous strain on human and financial resources.

Despite this, the DRC continually maintains its political commitment to polio eradication – and it is paying off, as the country just celebrated its second polio-free year.

Funding shortfall prompts cutbacks

EXTREMELY encouraging international support to and endorsement of the Initiative in 2002 was overshadowed by an acute funding shortfall at the start of 2003, leading to an abrupt curtailing of some activities in the first half of the year. Due in part to the global economic downturn of the past two years, a number of key partners informed WHO late in 2002 that it would not be possible to provide expected year-end resources. While the resultant scaling back of activities presents new risks to the rapid achievement of a polio-free world, the risks are manageable if sufficient funding is in place by June 2003 for activities planned in the second half of the year.

In response to this acute funding gap, the Initiative has re-prioritized and subsequently scaled back activities, particularly in the WHO Regions for Africa and the Eastern Mediterranean. By the end of January 2003, plans had been made to cancel national or subnational polio immunization campaigns in more than 10 recently endemic countries, cut national surveillance budgets by an average of 30 percent and reduce the length of contracts of most polio-funded international and national staff. ♦

Japan: a solid global polio partner

IN 1980, Japan made history when it eradicated polio, but the country's mission to eliminate polio has transcended Japanese borders.

Long before the launch of the GPEI in 1988, Japan had worked with governments of nearby countries to eliminate polio. In the late 1960s and early 1970s, Japan helped provide the Philippines and Thailand with vaccines, equipment and human resources to vaccinate children against polio. In 1980, Japan began helping Brazil produce quality polio vaccine and provided equipment and technical experts.

With the 1988 launch of the GPEI, Japan strengthened its commitment to end polio and provided aid to Bangladesh, China and Laos, Indonesia, Kenya, Niger and Pakistan. Over the past decade, Japan's generosity has spanned the globe. It has provided US$ 230 million to help countries obtain vaccines and construct cold chain facilities. That commitment has made Japan the fourth largest donor to the GPEI while helping to immunize 600 million children around the world.

Even today, as Japan faces economic dilemmas at home, it remains a steadfast partner in the endeavour to end polio. At a December ceremony in Islamabad, the Government of Japan announced its US$ 9.6 million pledge to Pakistan for 2003 activities to eliminate polio from the country. The contribution raised Japan's total donation to Pakistan's polio eradication efforts since 1996 to US$ 38.5 million. "We are committed to fighting infectious diseases worldwide, as it is viewed by Japan as a global issue requiring approaches based on global partnerships," said Mr Minoru Shibuya, Japan's Ambassador to Pakistan, at the ceremony. ♦

Materials available:

- **Weekly Epidemiological Record: Progress towards poliomyelitis eradication in Egypt, 2002 (issue no. 13, 28 March 2003)**
  Progress towards poliomyelitis eradication in India, 2002 (issue no. 10, 7 March 2003)

Forthcoming events 2003:

- **Technical Consultative Group – 24–25 April**
- **World Health Assembly – 19–28 May**
- **Rotary International PolioPlus Committee Meeting – 27–29 May**
- **Rotary International Convention – 1–4 June**

Recent donations:*

Finland
US$ 90 000 for Polio Reference Laboratory in Finland

Italy
US$ 80 000 for Polio Reference Laboratory in Rome
US$ 100 000 for polio immunizaion activities in Somalia and Sudan

Rotary International
US$ 2.6 million as rapid response grants for 2003 polio activities in Angola, the Democratic Republic of the Congo, Ethiopia, India, Nigeria, and a grant to AFRO for surveillance activities.

United Kingdom
US$ 4.75 million in global funding for polio activities
US$ 340 000 for AFP surveillance in Myanmar

United States of America
US$ 133 million for 2003 global polio eradication activities distributed through the US Centers for Disease Control and Prevention and USAID.

The Global Polio Eradication Initiative expresses its gratitude to all donors.
**Donations announced since Polio News 17 December 2002.*

PAG pursues funding opportunities

THE Polio Advocacy Group (PAG) is involved in a number of activities to help fill the funding gap. Established to coordinate the resource mobilization efforts of the partners and exploit their relative strengths, the PAG is an informal partnership between Rotary International, the UN Foundation, UNICEF and WHO.

The PAG made an urgent appeal to the donor community and partners in late 2002 to help fill the critical 2003 funding gap of US$ 75 million for polio eradication activities. It appealed to donors to have funds available before mid-2003, to ensure scheduled activities continue in the second half of the year.

The G8, during its last Summit in June 2002, vowed to provide the funding required for polio eradication activities in Africa. Following commitments by Canada and the UK, appeals have been made to the other G8 countries to fulfill their commitment before the upcoming G8 Summit in Evian, France in June 2003.

Discussions with the European Commission were reconvened in an attempt to reprogramme unspent EC Health Sector funds for polio eradication in priority countries. Support was approved in the amount of US$ 25 million for India and US$ 12.9 million for Nigeria. This funding builds on the EC's contribution for polio eradication activities in Nigeria that amounted to over US$ 18 million. ♦

Polio News

All comments and feedback on Polio News should be sent to:
Department of Vaccines and Biologicals, WHO, Geneva.
Tel.: +41 22 791 3219
Fax: +41 22 791 4193
Email: polioepi@who.int
Web site:http://www.polioeradication.org

Design & Layout: CIV Corn Sini, Morges, Switzerland

West Africa launches final assault on polio - 60 n African children to be vaccinated

Aventis Pasteur donates 30 million doses of oral polio vaccine

12 November 2002|NEW YORK/GENEVA -- With West African countries in the midst of vaccinating millions of children against polio, the world's largest vaccine manufacturer, Aventis Pasteur, has donated 30 million doses of oral polio vaccine to the Global Polio Eradication Initiative.

This week, 16 West African countries are uniting to vaccinate all children under five within their borders.* Immunization campaigns over the past two years have driven the number of polio-endemic countries in all-time low. In 1999, 20 African countries were polio-endemic, but to date th three are considered endemic.**

This success is due to the Global Polio Eradication Initiative, a broad partners deliver polio vaccine to every child under five. The Aventis Pasteur donation making a difference, with almost 3 million of the 30 million doses bound for immunization campaign in Liberia.

"We are further strengthening the solidarity which has brought us to the cusp free world, and will indeed push us to full success," said Dr Gro Harlem Brur Director-General of the World Health Organization, at a recent signing cerem United Nations in New York.

The Global Polio Eradication Initiative is spearheaded by the World Health C Rotary International, the US Centers for Disease Control and Prevention and Aventis Pasteur – the longest standing corporate partner in the Global Polio E Initiative - has donated 120 million vaccine doses since 1997 and targeted its African countries affected by conflict, including Sierra Leone and the Sudan, appear to be polio-free.

"We are so close to beating this crippling disease in Africa and worldwide," s Bellamy, Executive Director of UNICEF, "but we are not there yet. We have focused and committed and encourage support from all corners - from endem donor countries and the health industry - so all children can be immunized. Tl will help these countries finish the job and ensure no more African children a by this easily preventable disease."

David J. Williams, President and Chief Executive Officer of Aventis Pasteur, company in the world devoted entirely to vaccines, signed a banner pledging commitment to end polio. "The Initiative has already made tremendous progr

admire the remarkable work done by WHO, Rotary International, CDC, UNI millions of volunteers around the world," Williams said. "This donation is ju example of Aventis Pasteur's commitment. We are very proud of our involve Global Polio Eradication Initiative."

About the Global Polio Eradication Initiative

Since its launch in 1988, the Global Polio Eradication Initiative has reduced p transmission from 125 countries and an estimated 350 000 cases, to just ten c beginning of 2002. Of these just three - India, Nigeria and Pakistan - have ha high-intensity transmission, while the remaining seven - Afghanistan, Angola Ethiopia, Niger, Somalia and Sudan - each have fewer than eight cases to dat

The final challenge to stopping transmission of wild poliovirus in Africa is to children are reached with polio vaccine - particularly those in the conflict are city of Mogadishu in Somalia; those in eastern Angola, and all children unde Nigeria. With the support of governments and millions of volunteers, the Initi requires US$ 275 million to fund polio eradication activities through 2005 an is required for African countries.

To help meet the current funding challenge, Rotary members worldwide have a major campaign to raise US$ 80 million by the year 2003. To date, Rotary h contributed US$ 182 million to eradicate polio throughout the African contin committed US$ 510 million worldwide. In addition to raising funds, Rotary n donate their time and personal resources during National Immunization Days this year, Rotary members from countries around the world have joined Rota polio endemic countries to help immunize children against polio.

Other partners in the Global Polio Eradication Initiative coalition include: the of countries affected by poliomyelitis; private foundations (e.g. United Natio Foundation, Bill & Melinda Gates Foundation); development banks (e.g. Wo donor governments (e.g. Australia, Austria, Belgium, Canada, Denmark, Finl Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, United K United States of America); the European Commission; humanitarian organiza International Red Cross and Red Crescent movement) and corporate partners Pasteur, De Beers and Wyeth). Volunteers in developing countries also play a million have participated in mass immunization campaigns.

* The participating West African countries are Benin, Burkina Faso, Cape Ve Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger Senegal, Sierra Leone and Togo.

** The three African countries with laboratory-confirmed transmission are N all cases on African continent to date in 2002); Niger and Somalia. In additio cases among Angolan refugees in western Zambia (February 2002) and positi environmental samples from Egypt demonstrate ongoing transmission in Ang Egypt. See www.polioeradication.org for details on incidence of polio in eacl

For more information contact:

Christine M. McNab - Poliomyelitis Information Officer
WHO
Telephone: +41 22 791 4688
Mobile phone: +41 79 254 6815
Email: mcnabc@who.int

Elizabeth Kramer
UNICEF
New York
Telephone: +1 212 326 7566
Email: ekramer@unicef.org

Koren Wolman-Tardy
Aventis
Lyon, France
Telephone: +33 4 37 37 7273
Email: Koren.Wolman-Tardy@aventis.com

WORLD HEALTH ORGANIZATION

EXECUTIVE BOARD
111th Session
Provisional agenda item 10.5

EB111/32
21 November 2002

Eradication of poliomyelitis

Report by the Secretariat

1. In 1988, the Forty-first World Health Assembly (resolution WHA41.28) established the goal of the global eradication of poliomyelitis by the end of the year 2000. At the time the resolution was adopted, an estimated 350 000 poliomyelitis cases were occurring each year, and at least 125 countries were endemic for poliovirus. In 1999, the Fifty-second World Health Assembly, in resolution WHA52.22, called on Member States to accelerate eradication activities to interrupt the chains of transmission of wild-type poliovirus and to introduce laboratory containment of wild-type poliovirus.

2. As a result of this acceleration, only 10 countries[1] were still endemic for wild-type poliovirus at the end of 2001, and just 483 laboratory-confirmed cases of poliomyelitis were reported in those countries. The absence of cases during that year from countries historically considered as major reservoirs of wild-type poliovirus, particularly Bangladesh and the Democratic Republic of the Congo, also demonstrates that the eradication strategies are sound. On 21 June 2002, the independent Regional Certification Commission certified the WHO European Region poliomyelitis-free, bringing the total number of such certified regions to three, with a total population of more than 3000 million people in 134 countries, areas and territories. By 12 November 2002 the number of countries affected by poliomyelitis was the lowest ever, with only seven known to be endemic.

3. In 2001-2002, a framework for assessing and managing the risks of poliomyelitis in the post-certification era was created, drawing on extensive research results, in order to facilitate national and international deliberations on future poliomyelitis immunization policy. Planning is under way for extensive consultations with Member States to determine how these risks may influence national policy on the use of poliomyelitis vaccines after global certification.

4. Increasing attention is being given to optimizing and documenting the role of the infrastructure of the Global Polio Eradication Initiative in contributing to the attainment of other health goals. In 2001, for example, a survey of 1015 WHO staff funded by the Global Polio Eradication Initiative found that 91% of international staff and 100% of national staff are devoting an average of 44% and 22%, respectively, of their time to strengthening routine immunization and surveillance systems. Specific milestones have been established and indicators developed to monitor progress in this area.

[1] Afghanistan, Angola, Egypt, Ethiopia, India, Niger, Nigeria, Pakistan, Somalia, and the Sudan.

ISSUES

5. Over the next 12 months an intensive global effort will be required to eradicate poliomyelitis from the remaining endemic areas. Of particular importance will be to close the gaps in the quality of supplementary immunization activities to ensure that all children receive oral poliomyelitis vaccine in India, Nigeria and Pakistan, which, as of 12 November, accounted for 98% of cases in 2002 (90% of these cases are found in nine of the 76 states or provinces of those three countries) (see Annex, Figure 1). Concerted action will be needed to stop the low-level but geographically extensive transmission of poliovirus in Egypt and Niger.

6. In Afghanistan, the Mogadishu area of Somalia, and eastern Angola, continued improvements in access to immunization of all children are crucial to interrupting the final chains of poliovirus transmission in these "low transmission" areas.

7. For all the WHO regions to be in the process of poliomyelitis-free certification by 2005, the quality of surveillance of acute flaccid paralysis must be raised to certification standard, especially in 33 countries in the WHO regions of Africa (23 countries), the Eastern Mediterranean (7) and South-East Asia (3) (see Annex, Figure 2).

8. In terms of progress toward laboratory containment of poliovirus, by August 2002, 122 Member States had initiated a national survey, and, of those, 76 had completed and submitted an inventory of laboratories holding wild-type polioviruses and potentially infectious materials. Global certification will require that all countries complete these activities to ensure that any retained materials are handled in appropriate biosafety conditions.

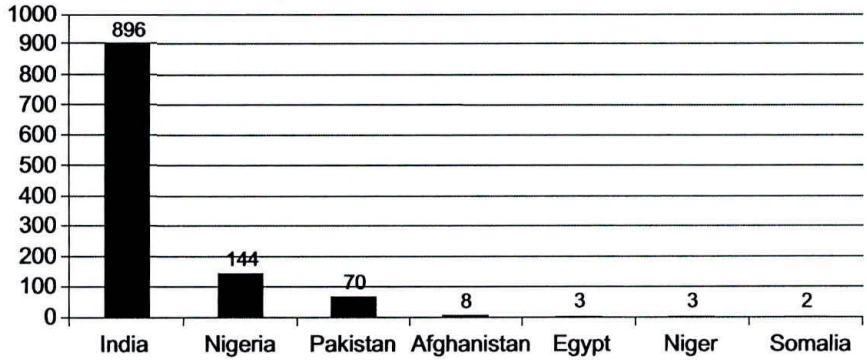
9. Implementing the necessary eradication, surveillance, certification and containment activities largely depends on whether the shortfall in funding of US$ 275 million for the period 2003-2005 is met.

ACTION BY THE EXECUTIVE BOARD

10. The Executive Board is invited to note the report.

ANNEX

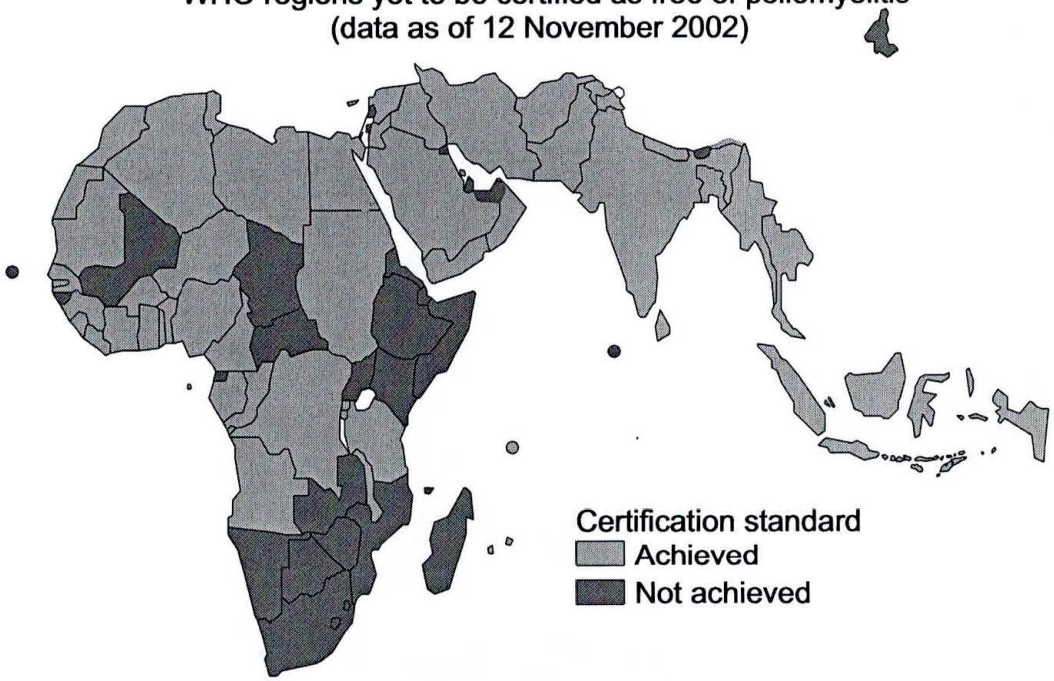
Figure 1. Reported cases of poliomyelitis due to transmission of indigenous wild-type poliovirus, by country, in 2002*
(data as of 12 November 2002)



* In addition to the countries referred to in this Figure, the isolation of wild-type poliovirus from Angolan refugees in Zambia suggests ongoing transmission in Angola during 2002.

WHO 02.198

Figure 2. Performance of acute flaccid paralysis surveillance for the eradication of poliomyelitis in 2002 in the three WHO regions yet to be certified as free of poliomyelitis
(data as of 12 November 2002)



= = =

DIS-6A.3

WORLD HEALTH ORGANIZATION

FIFTY-FIFTH WORLD HEALTH ASSEMBLY **A55/11**
Provisional agenda item 13.7 **27 March 2002**

Eradication of poliomyelitis

Report by the Secretariat

BACKGROUND

1. The Forty-first World Health Assembly (resolution WHA41.28) established the goal of eradication of poliomyelitis by the year 2000. Recognizing that, despite substantial progress and sound strategies, transmission of wild poliovirus would continue in some Member States beyond the target date, the Fifty-second World Health Assembly, in resolution WHA52.22, called for acceleration of eradication activities, additional funding and the introduction of laboratory-containment activities.

2. Acceleration of eradication activities between 1999 and 2001 has resulted in a 28% improvement in poliomyelitis surveillance, a two-thirds reduction in the number of endemic countries and a 92% decline in reported poliomyelitis cases since resolution WHA52.22 was adopted in May 1999. Poliomyelitis is now at its lowest point ever, with 473 cases due to indigenous wild poliovirus reported in 10 countries in 2001 (as of 12 March 2002) compared with an estimated 350 000 cases in more than 125 countries in 1988 (see Annex). On 29 October 2000, the Western Pacific became the second WHO Region to be certified poliomyelitis-free.

3. All Member States endemic for poliomyelitis have conducted "intensified" national immunization days and have improved surveillance in response to the call for acceleration. To maximize the impact, 16 West African countries synchronized national immunization days in October-November 2000 and 2001. Angola, Congo, Democratic Republic of the Congo and Gabon synchronized three rounds of intensified national immunization days in July-September 2001. Afghanistan, Islamic Republic of Iran and Pakistan continued to synchronize activities. Under the leadership of the United Nations Secretary-General, many United Nations organizations, in partnership with humanitarian and nongovernmental organizations, supported Member States in carrying out these activities.

4. Critical to achieving this acceleration have been large unearmarked contributions for poliomyelitis eradication to WHO totalling US$ 308 million during 1999-2001, from the governments of the Netherlands and the United Kingdom of Great Britain and Northern Ireland, the Bill & Melinda Gates Foundation and the United Nations Foundation. During the same period, additional contributions to the eradication initiative, through either multilateral or bilateral channels were made by Rotary International and by the European Commission; the governments of Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Ireland, Italy, Japan, Luxembourg, Norway, Oman, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland and United States of America; Aventis and De Beers.

5. The Global Action Plan for Laboratory Containment of Wild Polioviruses[1] is now being implemented. National task forces have been appointed in 114 countries and areas: 36 in the Western Pacific Region; 50 in the European Region; 19 in the Eastern Mediterranean Region; seven in the South-East Asia Region; and two in the Region of the Americas. Over 90 countries have already begun compiling exhaustive lists of biomedical facilities to be surveyed, with more than 70 000 laboratories listed as of January 2002. Twenty-nine countries have completed the pre-eradication phase activities and submitted national inventories of laboratories.

ISSUES

6. Five of the 10 remaining endemic countries constitute the "high transmission" areas of northern India, Pakistan and Afghanistan, and Nigeria and Niger. Stopping poliomyelitis worldwide by the end of 2002 requires reaching all children in these areas with multiple rounds of supplementary poliomyelitis immunization in 2002. In the five "low transmission" countries of Angola, Egypt, and the Horn of Africa (Ethiopia, Somalia and Sudan), the risks that poliomyelitis will not be rapidly stopped include deterioration in security and/or suboptimal strategy selection and implementation.

7. In contrast to the maximum biosafety and containment of regulations in place for smallpox virus, the goal for laboratory containment of wild polioviruses is the implementation of appropriate biosafety procedures depending on the level of risk. The WHO Global Action Plan for Laboratory Containment of Wild Polioviruses was revised in 2002 to reflect this emphasis and outline the action needed in Member States.

8. The importance of defining poliomyelitis immunization policy for the post-eradication era has been highlighted by outbreaks caused by circulating vaccine-derived polioviruses in the Philippines (2001) and the Dominican Republic and Haiti (2000-2001). To facilitate this policy development, a full programme of work is being implemented, which includes evaluation of the future risk of such outbreaks and the feasibility and implications of each of the post-eradication immunization policy options.

9. A "Meeting on the impact of targeted programmes on health systems: a case study of the Polio Eradication Initiative" was held in Geneva from 16 to 17 December 1999.[2] To build on the finding that opportunities for strengthening health systems could be better exploited, WHO is working to ensure that the lessons from poliomyelitis eradication and the infrastructure are used to improve the delivery of other immunization services and surveillance for other diseases of public health importance. This may require substantial human resources, as more than 2000 immunization personnel, funded by the Global Polio Eradication Initiative, have been critical for national capacity-building for this undertaking.

FUTURE ACTION

10. The funding gap of US$ 275 million to the end of 2005 is now the single greatest threat to the goal of poliomyelitis eradication. To ensure that the funding requirements are met in a timely manner, commitments are needed from partner agencies and Member States, whether endemic or non-endemic.

---

[1] Document WHO/V&B/99.32.

[2] See document WHO/V&B/00.29.

11. In Member States that are endemic for poliomyelitis and undergoing humanitarian crises, particularly Afghanistan, Angola, Democratic Republic of Congo, Somalia and the Sudan, poliomyelitis eradication activities need to be emphasized as a crucial part of the humanitarian agenda in order to facilitate the prompt interruption of transmission.

12. Global certification of poliomyelitis eradication, targeted for 2005, requires that all Member States will have first completed the pre-eradication phase activities set out in the global action plan for the laboratory containment of wild polioviruses, including establishing a national inventory of all facilities holding potentially infectious materials.

13. The Director-General will continue to submit an annual report to the Executive Board on progress towards the eradication of poliomyelitis and the development of post-eradication policy.

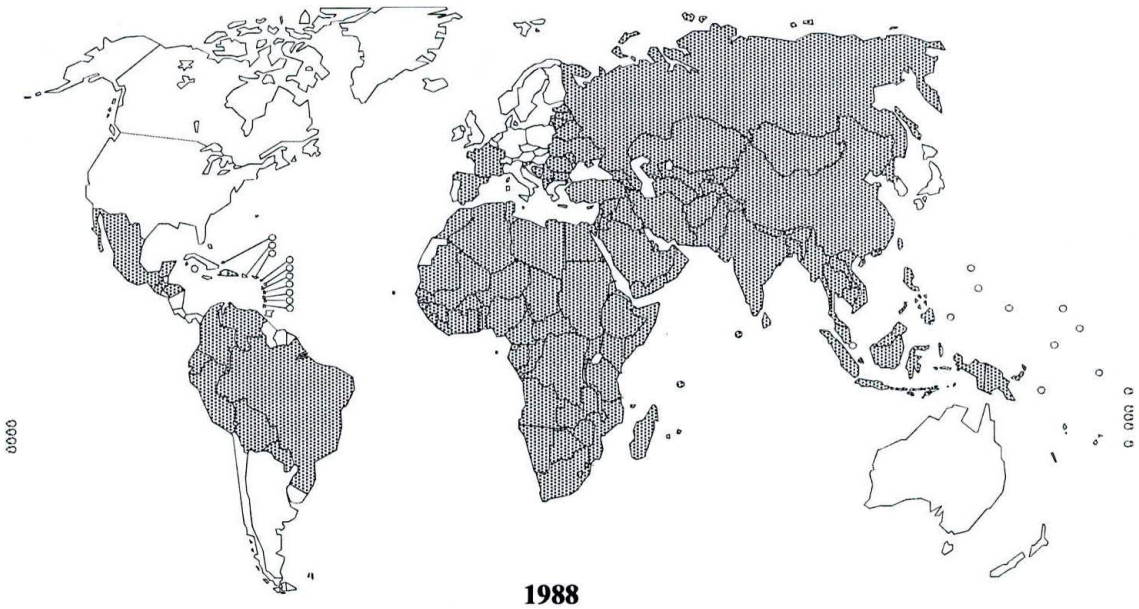
ACTION BY THE HEALTH ASSEMBLY

14. The Health Assembly is invited to note the report.

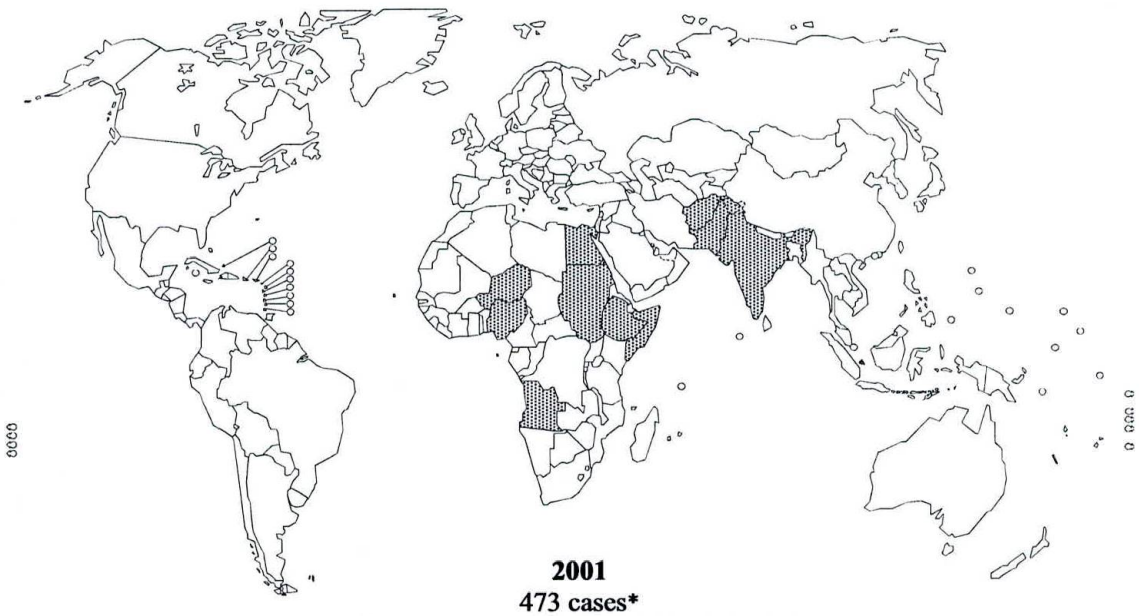
ANNEX

ERADICATION OF POLIOMYELITIS: PROGRESS

Endemic countries: 1988 and 2001



1988
350 000 cases



2001
473 cases*
*laboratory confirmed as of 12 March 2002

= = =

WORLD HEALTH ORGANIZATION

EXECUTIVE BOARD
103rd Session
Provisional agenda item 3

EB103/7
27 November 1998

Poliomyelitis eradication

Report by the Director-General

BACKGROUND

1. In 1988 the Health Assembly established a goal to eradicate poliomyelitis globally by the year 2000.[1] Recognizing that a focused eradication goal could facilitate the development of health care systems, the Health Assembly specified that poliomyelitis eradication should be conducted within the Expanded Programme on Immunization (EPI) and the context of primary health care.

2. Routine immunization systems are now delivering poliomyelitis vaccine and other EPI antigens to 80% of the world's infants. National immunization days for poliomyelitis eradication have been conducted in all endemic countries with the exception of the Democratic Republic of the Congo and Liberia. Eighty-nine countries will conduct national immunization days in 1998, targeting an estimated 470 million children, approximately three-quarters of the world's population aged less than five years. Many immunization days are being internationally coordinated either within or between WHO regions, including the "Kick Polio Out of Africa" campaign, Operation MECACAR (Eastern Mediterranean and European regions), and the simultaneous immunization days among countries of the South Asian Association for Regional Cooperation. Surveillance of acute flaccid paralysis has been established in all poliomyelitis endemic countries, fully integrated in a global network of 133 poliomyelitis laboratories. Truces have been declared for immunization campaigns in Afghanistan, El Salvador, Peru, Philippines, Sri Lanka, Sudan, and Tajikistan.

3. If the current rate of progress is maintained, poliomyelitis can be eradicated globally by the year 2000 or shortly thereafter. Since 1988 the number of cases reported by WHO Member States has fallen by 85%. Poliomyelitis eradication was certified in the Region of the Americas in 1994, three years after the last case occurred in Peru. In the Western Pacific Region the last case occurred in Cambodia in March 1997. As of mid-1998, only 50 countries were still considered to be polio-endemic, mainly in South Asia and sub-Saharan Africa (Annex).

4. Eradication of poliomyelitis will benefit the world by preventing hundreds of thousands of cases of paralysis each year, and producing direct savings of US$ 1.5 thousand million each year after immunization is stopped. The eradication initiative has already revitalized immunization programmes in many countries, helping to re-establish the cold chain and improve routine coverage. Improved integrated

[1] Resolution WHA41.28.

surveillance systems, trained health staff and the global virology laboratory network are additional legacies. In 43 countries, the distribution of vitamin A during national immunization days has prevented blindness and reduced deaths from measles and other infectious diseases. Because of the "slack" in many health systems, combined with the availability of new funding, there has not been a major disruption in other health services or diversion of funds. The eradication of poliomyelitis in the Western Hemisphere has led the Region of the Americas to adopt a measles elimination target.

ISSUES

5. The poliomyelitis eradication initiative is now in a crucial phase, with some of the most difficult countries still remaining endemic. Six countries (Bangladesh, Ethiopia, India, Nepal, Nigeria and Pakistan) are major reservoirs of poliomyelitis, where large populations, high birth rates, crowded areas with poor sanitation and insufficient routine immunization facilitate poliovirus transmission. Implementing eradication activities is especially challenging in seven countries affected by conflict (Afghanistan, Angola, Liberia, Sierra Leone, Somalia, Sudan and Tajikistan). The Democratic Republic of the Congo is a unique challenge, a major reservoir affected by conflict.

6. During the initial phases of poliomyelitis eradication, countries paid 80% to 90% of the total cost. However, the lower levels of infrastructure and health resources available in the remaining poliomyelitis-endemic countries mean that a high percentage of the eradication cost has to be paid from external sources. Political will and financial resources are urgently needed to accelerate the eradication initiative and to avoid delays that would both threaten the success to date and substantially increase the overall cost. Such support also needs to continue in those countries that are now poliomyelitis-free, as the quality of surveillance and immunization has already started to decline in some areas.

7. As more countries become free of the disease, the risk posed by laboratory stocks of wild poliovirus increases substantially. If wild poliovirus were inadvertently released after immunization is stopped, circulation could be re-established. WHO has drawn up a global action plan and timetable for safe handling and maximum laboratory containment of wild polioviruses and potentially infectious materials. This plan calls for countries to inventory laboratory stocks of wild polioviruses, destroy stocks of no scientific value and move the remaining stocks to interim repositories starting in 1999.

FUTURE ACTION

8. Eradication activities must be accelerated in the 14 most difficult countries, with additional rounds during national immunization days in many areas. Data deriving from surveillance of acute flaccid paralysis must be improved in order to identify accurately areas where wild polioviruses continue and to target large scale house-to-house "mopping-up" immunization to halt transmission. Truces for immunization need to be secured in countries affected by conflict. All countries must ensure that high-quality immunization days reach all children aged less than five years.

9. WHO's advocacy is needed to secure the political support and funds necessary to conduct these activities. WHO estimates that a total US$ 700 million is needed from external sources over the next three years, the current shortfall being US$ 350 million. An emergency fund is needed to permit a rapid and effective response when windows of opportunity open in countries that are affected by conflict or are politically isolated.

10. Implementation of WHO's plan of action for containment of wild polioviruses should start in 1999. A coordinating group needs to be set up, with the authority to oversee the process, provide guidance to WHO, and report formally to the Global Commission for the Certification of the Eradication of Poliomyelitis.

ACTION BY THE EXECUTIVE BOARD

11. The Executive Board is invited to consider the following draft resolution:

The Executive Board,

Noting the report of the Director-General on the global eradication of poliomyelitis,

RECOMMENDS to the Fifty-second World Health Assembly the adoption of the following resolution:

The Fifty-second World Health Assembly,

Reaffirming WHO's commitment to the global eradication of poliomyelitis by the end of the year 2000;

Recognizing that substantial progress has been made towards eradication of poliomyelitis, with large geographic areas of the world now free of poliomyelitis, and a fall of 85% in annually reported cases since global eradication began in 1988;

Noting, however, that as of May 1999 a number of countries of south Asia and sub-Saharan Africa remain poliomyelitis-endemic, some of which are either affected by conflict or constitute densely populated wild poliovirus "reservoirs",

1. URGES poliomyelitis-endemic Member States to accelerate eradication activities by conducting additional immunization rounds each year, on either a national or subnational basis; to improve the quality of national immunization days by ensuring that every child is reached; to implement house-to-house "mopping-up" campaigns; and to enhance surveillance by ensuring that all cases of acute flaccid paralysis are detected and promptly investigated;

2. URGES poliomyelitis-free Member States to sustain high levels of immunization coverage and poliovirus surveillance until eradication is certified globally;

3. URGES all Members States:

(1) to mobilize the human and financial resources necessary to accelerate eradication in poliomyelitis-endemic countries;

(2) to begin in collaboration with WHO, the process leading to the laboratory containment of wild poliovirus;

4. REQUESTS the Director-General:

(1) to urge all partners to facilitate acceleration of the initiative to eradicate poliomyelitis during the critical period 1999 to 2001;

(2) to collaborate with other organizations of the United Nations system and other international bodies in arranging truces in countries affected by conflict for eradication and facilitating activities;

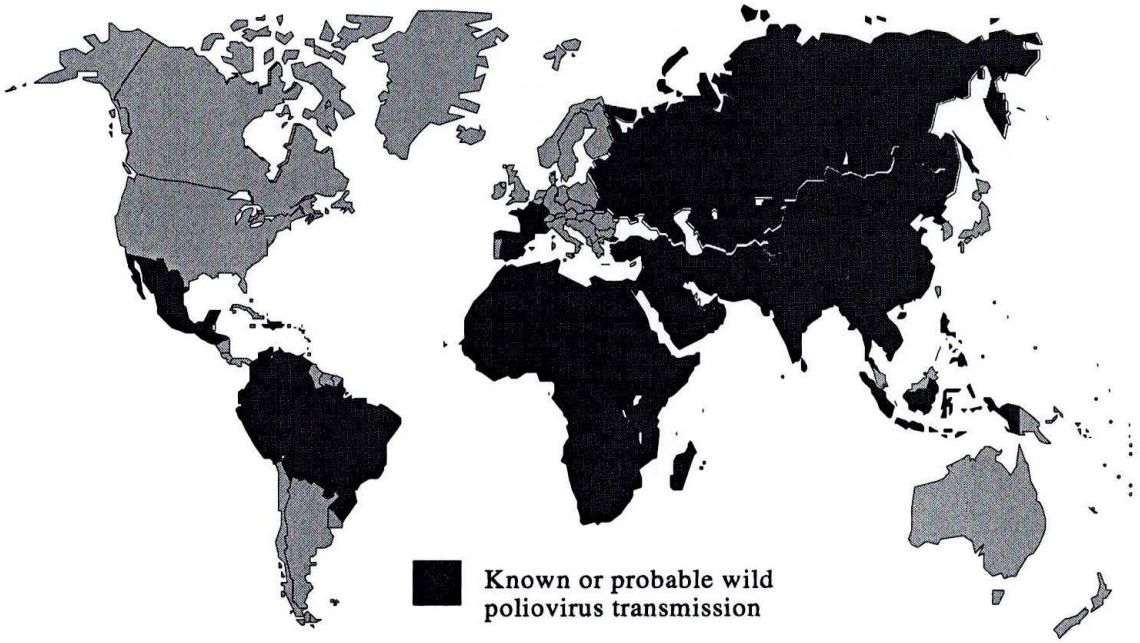
(3) to help mobilize the necessary financing to implement eradication activities, including establishment of an emergency fund to meet the needs of countries affected by conflict, countries classified as major wild poliovirus reservoirs, and other countries in particularly difficult circumstances;

(4) to collaborate with Member States in the establishment of a mechanism for overseeing the process of laboratory containment of wild poliovirus.

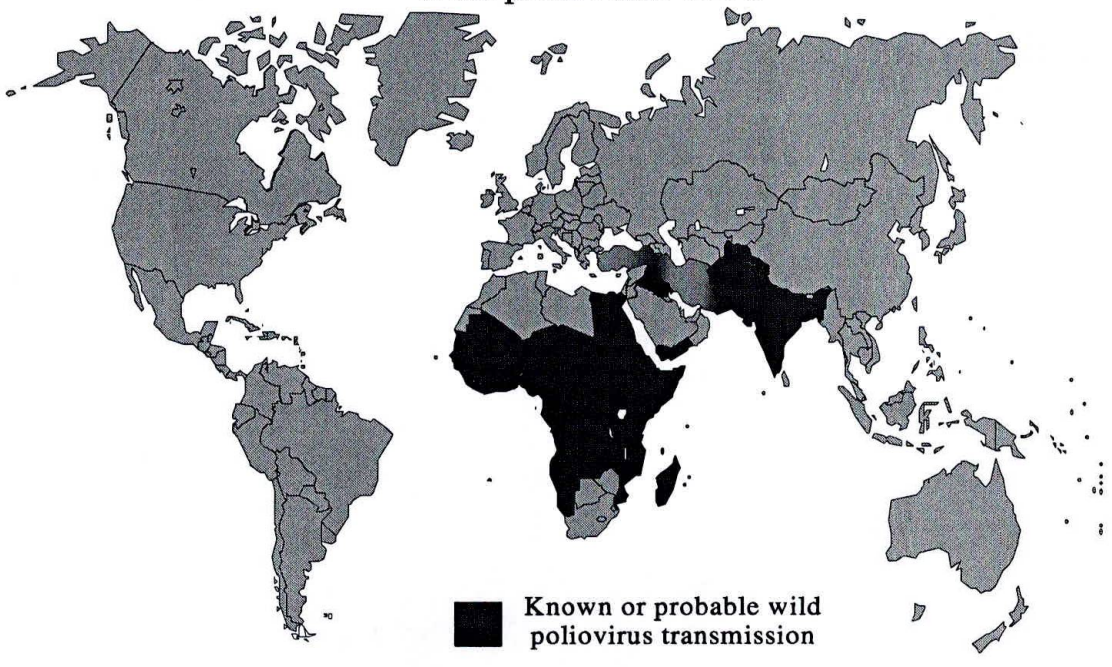
ANNEX

COMPARISON OF "KNOWN OR PROBABLE" WILD POLIOVIRUS TRANSMISSION IN 1988 AND BY JANUARY 1998

Wild poliovirus 1988



Wild poliovirus 1998



= = =

WHA41.28 Global eradication of poliomyelitis by the year 2000

The Forty-first World Health Assembly.

Appreciating the rapid progress being achieved by the Expanded Programme on Immunization as evidenced by coverage for a third dose of poliomyelitis or diphtheria/pertussis/tetanus vaccines of over 5090 of children under the age of one year in developing countries, as well as by the prevention of the death of more than one million children from measles neonatal tetanus or pertussis, and the prevention of the crippling of nearly 200 000 children through poliomyelitis annually in these countries;

Confident that these coverage rates will continue to rise rapidly and be sustained, in pursuit of the goal endorsed by the Thirtieth World Health Assembly'' in 1977 (resolution WHA30.53) - the provision of immunization for all children of the world by 1990 - and will lead to further marked reductions in the incidence of most of the target diseases;

Aware that poliomyelitis is the target disease most amenable to global eradication, and that regional eradication goals by or before the year 2000 have already been set in the Regions of the Americas Europe and the Western Pacific;

Recognizing that the global eradication of poliomyelitis by' the year 2000 a goal cited in the Declaration of Talloires, represents both a fitting challenge to be undertaken now, on the Organization's fortieth anniversary, and an appropriate gift, together with the eradication of smallpox, from the twentieth to the twenty-first century;

Noting:

(1) that achievement of the goal will depend on the political will of countries and on the investment of adequate human and financial resources;

(2) that this achievement will be facilitated by the continued strengthening of the Expanded Programme on Immunization within the context of primary health care and by improving current poliomyelitis vaccines and clinical and laboratory surveillance;

(3) that efforts to eradicate poliomyelitis serve to strengthen other immunization and health services, especially those for women and children;

1. DECLARES the commitment of WHO to the global eradiction of poliomyelitis by the year 2000;

2. EMPHASIZES that eradication efforts should be pursued in ways which strengthen the development of the Expanded Programme on Immunization as a whole fostering its contribution, in turn, to the development of the health infrastructure and of primary health care;

3. INVITES Member States which have covered at least 70% of their target populations with a protective course of poliomyelitis vaccine, and which continue to have cases of

poliomyelitis, to formulate plans for the elimination of the indigenous transmission of wild poliomyelitis viruses in ways which strengthen and sustain their national immunization programmes;

4. ENCOURAGES Member States which have not yet attained a 70% coverage rate to accelerate their efforts so as to surpass this level as quickly as possible through means which also improve and sustain the coverage for the other vaccines included within the national immunization programmes;

5. REQUESTS Member States which have confirmed the absence of the indigenous transmission of wild poliomyelitis viruses to sustain their success and to offer their technical expertise, their resources and support to countries still working to achieve this goal;

6. URGES all Member States:

(1) to intensify surveillance to ensure prompt identification and investigation of cases of poliomyelitis and control of outbreaks and accurate and timely reporting of cases at national and international levels;

(2) to make all possible efforts to permit the rehabilitation of as many as possible of the children who still become disabled by poliomyelitis;

7. THANKS the many partners already collaborating in the Expanded Programme on Immunization (including the United Nations agencies, multilateral and bilateral development agencies, private and voluntary groups and concerned individuals), especially UNICEF for its overall efforts and Rotary International for its "Polio Plus" initiative, and requests them to continue to work together in support of national immunization programmes, including activities aimed at the eradication of poliomyelitis, and to ensure that adequate resources are available to accelerate and sustain these programmes;

8. REQUESTS the Director-General:

(1) to strengthen the technical capacities of WHO in order to be able to respond better to requests from governments for collaboration in:

(a) strengthening planning, training and supervision within national immunization programmes and undertaking country-specific evaluation to facilitate corrective action towards achieving the goal of eradication in countries with coverage of less than 70%;

(b) improving programme monitoring and evaluation at national, regional and global levels;

(c) improving national disease surveillance systems to permit the rapid control of outbreaks and the investigation and confirmation of clinical diagnoses of poliomyelitis through serological and virus isolation techniques;

(d) strengthening clinical laboratory services;

(e) improving the quality control and production of vaccines;

(2) to pursue efforts to promote the development and application of new vaccines, other new technologies and knowledge that will help to achieve the eradiction goal;

(3) to seek from extrabudegtary contributions the additional resources required to support these activities;

(4) to submit regular plans and reports of progress concerning the poliomyelitis eradication effort through the Executive Board to the Health Assembly, in the context of the progress being achieved by the Expanded Programme on Immunization.

Hbk Res., Vol. III (1st ed.), 1.16.1 (Fifteenth plenary meeting, 13 May 1988 -Committee B, fourth report)

OFFICE OF THE UNITED NATIONS HIGH COMMISSIONER FOR HUMAN RIGHTS

STATUS OF RATIFICATIONS OF THE PRINCIPAL INTERNATIONAL HUMAN RIGHTS TREATIES

As of 02 May 2003

The international human rights treaties of the United Nations that establish committees of experts (often referred to as "treaty bodies") to monitor their implementation are the following:

(1) the International Covenant on Economic, Social and Cultural Rights (CESCR), which is monitored by the Committee on Economic, Social and Cultural Rights;

(2) the International Covenant on Civil and Political Rights (CCPR), which is monitored by the Human Rights Committee;

(3) the Optional Protocol to the International Covenant on Civil and Political Rights (CCPR-OP1), which is administered by the Human Rights Committee; and

(4) the Second Optional Protocol to the International Covenant on Civil and Political Rights, aimed at the abolition of the death penalty (CCPR-OP2-DP).

(5) the International Convention on the Elimination of All Forms of Racial Discrimination (CERD), which is monitored by the Committee on the Elimination of Racial Discrimination;

(6) the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), which is monitored by the Committee on the Elimination of Discrimination against Women;

(7) the Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW-OP);

(8) the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT), which is monitored by the Committee against Torture;

(9) the Convention on the Rights of the Child (CRC), which is monitored by the Committee on the Rights of the Child;

(10) the Optional Protocol to the Convention on the Rights of the Child (CRC-OP-AC) on the involvement of children in armed conflict;

(11) the Optional Protocol to the Convention on the Rights of the Child (CRC-OP-SC) on the sale of children, child prostitution and child pornography.

(12) the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (MWC), which was adopted by the General Assembly in 1990 and will enter into force when 20 States have accepted it;

The following chart of States shows which are a party (indicated by the date of adherence: ratification, accession or succession) or signatory (indicated by an "s" and the date of signature) to the United Nations human rights treaties listed above. Self-governing territories that have ratified any of the treaties are also included in the chart. As at 02 May 2003, all 189 Member States of the United Nations and 4 non-Member States were a party to one or more of these treaties.

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Afghanistan	24 Jan 83[a]	24 Jan 83 [a]			06 Jul 83[a]	06 Mar 03		01 Apr 87	28 Mar 94		20 Sep 02[a]	
Albania	04 Oct 91[a]	04 Oct 91 [a]			11 May 94[a]	11 May 94		11 May 94[a]	27 Feb 92			
Algeria	12 Sep 89	12 Sep 89	12 Sep 89 [a]		14 Feb 72[*]	22 May 96[a]		12 Sep 89[*]	16 Apr 93			
Andorra		*s:05 Aug 02*	*s:05 Aug 02*		*s:05 Aug 02*	15 Jan 97[a]	15 Oct 02	*s:05 Aug 02*	02 Jan 96	30 Apr 01	30 Apr 01	
Angola	10 Jan 92[a]	10 Jan 92 [a]	10 Jan 92 [a]			17 Sep 86[a]			06 Dec 90			
Antigua and Barbuda					25 Oct 88[d]	01 Aug 89[a]		19 Jul 93[a]	06 Oct 93		30 Apr 02	
Argentina	08 Aug 86	08 Aug 86	08 Aug 86 [a]		02 Oct 68	15 Jul 85	*s:28 Feb 00*	24 Sep 86[*]	05 Dec 90	10 Sep 02		
Armenia	13 Sep 93[a]	23 Jun 93 [a]	23 Jun 93		23 Jun 93[a]	13 Sep 93[a]		13 Sep 93	23 Jun 93 [a]			
Australia	10 Dec 75	13 Aug 80	25 Sep 91 [a]	02 Oct 90[a]	30 Sep 75[*]	28 Jul 83		08 Aug 89[*]	17 Dec 90	*s:21 Oct 02*	*s:18 Dec 01*	
Austria	10 Sep 78	10 Sep 78	10 Dec 87	02 Mar 93	09 May 72[*]	31 Mar 82	07 Sep 00	29 Jul 87[*]	06 Aug 92	01 Feb 02	*s:06 Sep 00*	
Azerbaijan	13 Aug 92[a]	13 Aug 92 [a]	27 Nov 01 [a]	22 Jan 99[a]	16 Aug 96[a]	10 Jul 95[a]	01 Jun 01	16 Aug 96[a]	13 Aug 92 [a]	03 Jul 02	03 Jul 02	11 Jan 99[a]
Bahamas					05 Aug 75[d]	06 Oct 93[a]			20 Feb 91			
Bahrain					27 Mar 90[a]	18 Jun 02[a]		06 Mar 98[a]	13 Feb 92 [a]			
Bangladesh	05 Oct 98[a]	07 Sep 00 [a]			11 Jun 79[a]	06 Nov 84[a]	07 Sep 00	05 Oct 98[a]	03 Aug 90	07 Sep 00	07 Sep 00	*s:07 Oct 98*
Barbados	05 Jan 73[a]	05 Jan 73 [a]	05 Jan 73 [a]		08 Nov 72[a]	16 Oct 80			09 Oct 90			
Belarus	12 Nov 73	12 Nov 73	30 Sep 92 [a]		08 Apr 69	04 Feb 81		13 Mar 87	02 Oct 90		24 Jan 02[a]	
Belgium	21 Apr 83	21 Apr 83	17 May 94 [a]	08 Dec 98	07 Aug 75[*]	10 Jul 85	*s:10 Dec 99*	25 Jun 99[*]	16 Dec 91	06 May 02	*s:06 Sep 00*	
Belize	*s:06 Sep 00*	10 Jun 96 [a]			14 Nov 01	16 May 90	09 Dec 02 [a]	17 Mar 86[a]	02 May 90	*s:06 Sep 00*	*s:06 Sep 00*	14 Nov 01[a]
Benin	12 Mar 92[a]	12 Mar 92 [a]	12 Mar 92 [a]		30 Nov 01	12 Mar 92	*s:25 May 00*	12 Mar 92[a]	03 Aug 90	*s:22 Feb 01*	*s:22 Feb 01*	
Bhutan					*s:26 Mar 73*	31 Aug 81			01 Aug 90			
Bolivia	12 Aug 82[a]	12 Aug 82 [a]	12 Aug 82 [a]		22 Sep 70	08 Jun 90	27 Sep 00	12 Apr 99	26 Jun 90		*s:10 Nov 01*	12 Oct 00[a]
Bosnia and Herzegovina	03 Mar 92[d]	01 Sep 93 [d]	01 Mar 95	16 Mar 01	16 Jul 93[d]	01 Sep 93[d]	04 Sep 02	01 Sep 93[a]	01 Sep 93 [d]	*s:07 Sep 00*	04 Sep 02	13 Dec 96[a]
Botswana		08 Sep 00			20 Feb 74[a]	13 Aug 96[a]		08 Sep 00	14 Mar 95 [a]			
Brazil	24 Jan 92[a]	24 Jan 92 [a]			27 Mar 68[*]	01 Feb 84	28 Jun 02	28 Sep 89	25 Sep 90	*s:06 Sep 00*	*s:06 Sep 00*	
Brunei Darussalam									27 Dec 95 [a]			

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Bulgaria	21 Sep 70	21 Sep 70	26 Mar 92 a	10 Aug 99	08 Aug 66*	08 Feb 82	*s:06 Jun 00*	16 Dec 86*	03 Jun 91	12 Feb 02	12 Feb 02	
Burkina Faso	04 Jan 99a	04 Jan 99 a	04 Jan 99 a		18 Jul 74a	14 Oct 87a	*s:16 Nov 01*	04 Jan 99a	31 Aug 90	*s:16 Nov 01*	*s:16 Nov 01*	*s:16 Nov 01*
Burundi	09 May 90a	09 May 90 a			27 Oct 77	08 Jan 92	*s:13 Nov 01*	18 Feb 93a	19 Oct 90	*s:13 Nov 01*		
Cambodia	26 May 92a	26 May 92 a			28 Nov 83	15 Oct 92a	*s:11 Nov 01*	15 Oct 92a	15 Oct 92 a	*s:27 Jun 00*	30 May 02	
Cameroon	27 Jun 84a	27 Jun 84 a	27 Jun 84 a		24 Jun 71	23 Aug 94		19 Dec 86a*	11 Jan 93	*s:05 Oct 01*	*s:05 Oct 01*	
Canada	19 May 76a	19 May 76 a	19 May 76 a		14 Oct 70	10 Dec 81	18 Oct 02 a	24 Jun 87*	13 Dec 91	07 Jul 00	*s:10 Nov 01*	
Cape Verde	06 Aug 93a	06 Aug 93 a	19 May 00 a	19 May 00a	03 Oct 79a	05 Dec 80a		04 Jun 92a	04 Jun 92 a	10 May 02a	10 May 02a	16 Sep 97a
Central African Republic	08 May 81a	08 May 81 a	08 May 81 a		16 Mar 71	21 Jun 91a			23 Apr 92			
Chad	09 Jun 95a	09 Jun 95 a	09 Jun 95 a		17 Aug 77a	09 Jun 95a		09 Jun 95a	02 Oct 90	*s:03 May 02*	*s:03 May 02*	
Chile	10 Feb 72	10 Feb 72	28 May 92 a		20 Oct 71*	08 Dec 89	*s:10 Dec 99*	30 Sep 88	13 Aug 90	*s:15 Nov 01*	07 Feb 03	*s:24 Sep 93*
China	27 Mar 01	*s:05 Oct 98*			29 Dec 81a	04 Nov 80		04 Oct 88	03 Mar 92	*s:15 Mar 01*	03 Dec 02	
Colombia	29 Oct 69	29 Oct 69	29 Oct 69	05 Aug 97a	02 Sep 81	19 Jan 82	*s:10 Dec 99*	08 Dec 87	28 Jan 91	*s:06 Sep 00*	*s:06 Sep 00*	24 May 95
Comoros					*s:22 Sep 00*	31 Oct 94a		*s:22 Sep 00*	23 Jun 93			*s:22 Sep 00*
Congo	05 Oct 83a	05 Oct 83 a	05 Oct 83 a		11 Jul 88a	26 Jul 82			14 Oct 93 a			
Cook Islands									06 Jun 97 a			
Costa Rica	29 Nov 68	29 Nov 68	29 Nov 68	05 Jun 98	16 Jan 67*	04 Apr 86	20 Sep 01	11 Nov 93*	21 Aug 90	24 Jan 03	10 Apr 02	
Croatia	08 Oct 91d	12 Oct 92 d	12 Oct 95 a	12 Oct 95a	12 Oct 92d	09 Sep 92d	07 Mar 01	12 Oct 92d*	12 Oct 92 d		13 May 02	
Cuba					15 Feb 72	17 Jul 80	*s:17 Mar 00*	17 May 95	21 Aug 91	*s:13 Nov 00*	25 Sep 01	
Cyprus	02 Apr 69	02 Apr 69	15 Apr 92	10 Sep 99a	21 Apr 67*	23 Jul 85a	26 Apr 02	18 Jul 91*	07 Feb 91		*s:08 Feb 01*	
Czech Republic	01 Jan 93d	22 Feb 93 d	22 Feb 93 d		22 Feb 93d*	22 Feb 93d	27 Feb 01	01 Jan 93d*	22 Feb 93 d	30 Nov 01		
Côte d'Ivoire	26 Mar 92a	26 Mar 92 a	05 Mar 97 a		04 Jan 73a	18 Dec 95		18 Dec 95a	04 Feb 91			
Democratic People's Republic of Korea	14 Sep 81a	14 Sep 81 a				27 Feb 01a			21 Sep 90			
Democratic Republic of the Congo	01 Nov 76a	01 Nov 76 a	01 Nov 76 a		21 Apr 76a	17 Oct 86		18 Mar 96	28 Sep 90	12 Nov 01	12 Nov 01a	
Denmark	06 Jan 72	06 Jan 72	06 Jan 72	24 Feb 94	09 Dec 71*	21 Apr 83	31 May 00	27 May 87*	19 Jul 91	28 Aug 02	*s:07 Sep 00*	
Djibouti	05 Nov 02a	05 Nov 02 a	05 Nov 02 a	05 Nov 02a		02 Dec 98a		05 Nov 02a	06 Dec 90			
Dominica	17 Jun 93a	17 Jun 93 a				15 Sep 80			13 Mar 91	20 Sep 02a	20 Sep 02a	

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Dominican Republic	04 Jan 78[a]	04 Jan 78 [a]	04 Jan 78 [a]		25 May 83[a]	02 Sep 82	10 Aug 01	*s:04 Feb 85*	11 Jun 91	*s:09 May 02*		
Ecuador	06 Mar 69	06 Mar 69	06 Mar 69	23 Feb 93[a]	22 Sep 66[a]	09 Nov 81	05 Feb 02	30 Mar 88[*]	23 Mar 90	*s:06 Sep 00*	*s:06 Sep 00*	05 Feb 02[a]
Egypt	14 Jan 82	14 Jan 82			01 May 67	18 Sep 81		25 Jun 86[a]	06 Jul 90		12 Jul 02[a]	19 Feb 93[a]
El Salvador	30 Nov 79	30 Nov 79	06 Jun 95		30 Nov 79[a]	19 Aug 81	*s:04 Apr 01*	17 Jun 96[a]	10 Jul 90	18 Apr 02		14 Mar 03
Equatorial Guinea	25 Sep 87[a]	25 Sep 87 [a]	25 Sep 87 [a]		08 Oct 02[a]	23 Oct 84[a]		08 Oct 02[a]	15 Jun 92 [a]		07 Feb 03[a]	
Eritrea	17 Apr 01[a]	23 Jan 02 [a]			01 Aug 01[a]	05 Sep 95[a]			03 Aug 94			
Estonia	21 Oct 91[a]	21 Oct 91 [a]	21 Oct 91 [a]		21 Oct 91[a]	21 Oct 91[a]		21 Oct 91[a]	21 Oct 91 [a]			
Ethiopia	11 Jun 93[a]	11 Jun 93 [a]			23 Jun 76[a]	10 Sep 81		13 Mar 94[a]	14 May 91 [a]			
Fiji					11 Jan 73[d]	28 Aug 95			13 Aug 93			
Finland	19 Aug 75	19 Aug 75	19 Aug 75	04 Apr 91	14 Jul 70[*]	04 Sep 86	29 Dec 00	30 Aug 89[*]	21 Jun 91	11 Apr 02	*s:07 Sep 00*	
France	04 Nov 80[a]	04 Nov 80 [a]	17 Feb 84 [a]		28 Jul 71[a]	14 Dec 83	09 Jun 00	18 Feb 86[*]	08 Aug 90	05 Feb 03	06 Feb 03	
Gabon	21 Jan 83[a]	21 Jan 83 [a]			29 Feb 80	21 Jan 83		08 Sep 00	09 Feb 94	*s:08 Sep 00*	*s:08 Sep 00*	
Gambia	29 Dec 78[a]	22 Mar 79 [a]	09 Jun 88 [a]		29 Dec 78[a]	16 Apr 93		*s:23 Oct 85*	08 Aug 90	*s:21 Dec 00*	*s:21 Dec 00*	
Georgia	03 May 94[a]	03 May 94 [a]	03 May 94 [a]	22 Mar 99[a]	02 Jun 99[a]	26 Oct 94[a]	01 Aug 02 [a]	26 Oct 94[a]	02 Jun 94 [a]			
Germany	17 Dec 73	17 Dec 73	25 Aug 93 [a]	18 Aug 92	16 May 69[*]	10 Jul 85	15 Jan 02	01 Oct 90[*]	06 Mar 92	*s:06 Sep 00*	*s:06 Sep 00*	
Ghana	08 Sep 00	08 Sep 00	08 Sep 00		08 Sep 66	02 Jan 86	*s:24 Feb 00*	08 Sep 00	05 Feb 90			08 Sep 00
Greece	16 May 85[a]	05 May 97 [a]	05 May 97 [a]	05 May 97[a]	18 Jun 70	07 Jun 83	24 Jan 02	06 Oct 88[*]	11 May 93	*s:07 Sep 00*	*s:07 Sep 00*	
Grenada	06 Sep 91[a]	06 Sep 91 [a]			*s:17 Dec 81*	31 Aug 90			05 Nov 90			
Guatemala	19 May 88[a]	06 May 92 [a]	28 Nov 00 [a]		18 Jan 83	12 Aug 82	10 May 02	05 Jan 90[a]	06 Jun 90	10 May 02	10 May 02	14 Mar 03
Guinea	24 Jan 78	24 Jan 78	17 Jun 93		14 Mar 77	09 Aug 82		10 Oct 89	13 Jul 90 [a]			08 Sep 00[a]
Guinea-Bissau	02 Jul 92[a]	*s:12 Sep 00*	*s:12 Sep 00*		*s:12 Sep 00*	23 Aug 85	*s:12 Sep 00*	*s:12 Sep 00*	21 Aug 90	*s:08 Sep 00*	*s:08 Sep 00*	*s:12 Sep 00*
Guyana	15 Feb 77	15 Feb 77	10 May 93 [a]		15 Feb 77	17 Jul 80		19 May 88	14 Jan 91			
Haiti		06 Feb 91 [a]			19 Dec 72	20 Jul 81			09 Jun 95	*s:15 Aug 02*	*s:15 Aug 02*	
Holy See					01 May 69			26 Jun 02[a]	20 Apr 90	24 Oct 01	24 Oct 01	
Honduras	17 Feb 81	25 Aug 97	*s:19 Dec 66*		10 Oct 02[a]	03 Mar 83		05 Dec 96[a]	10 Aug 90	14 Aug 02 a	09 May 02[a]	
Hungary	17 Jan 74	17 Jan 74	07 Sep 88 [a]	24 Feb 94[a]	01 May 67[*]	22 Dec 80	22 Dec 00 [a]	15 Apr 87[*]	08 Oct 91			
Iceland	22 Nov 79	22 Aug 79	22 Aug 79 [a]	02 Apr 91[a]	13 Mar 67[*]	18 Jun 85	07 Mar 01	23 Oct 96[*]	28 Oct 92	02 Oct 01	09 Jul 01	

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
India	10 Apr 79[a]	10 Apr 79 [a]			03 Dec 68	09 Jul 93		*s:14 Oct 97*	11 Dec 92 [a]			
Indonesia					25 Jun 99[a]	13 Sep 84	*s:28 Feb 00*	28 Oct 98	05 Sep 90	*s:24 Sep 01*	*s:24 Sep 01*	
Iran (Islamic Republic of)	24 Jun 75	24 Jun 75			29 Aug 68				13 Jul 94			
Iraq	25 Jan 71	25 Jan 71			14 Jan 70	13 Aug 86[a]			15 Jun 94 [a]			
Ireland	08 Dec 89	08 Dec 89	08 Dec 89	18 Jun 93[a]	29 Dec 00[*]	23 Dec 85[a]	08 Sep 00	11 Apr 02[*]	28 Sep 92	18 Nov 02	*s:07 Sep 00*	
Israel	03 Oct 91	03 Oct 91			03 Jan 79	03 Oct 91		03 Oct 91	03 Oct 91		*s:14 Nov 01*	
Italy	15 Sep 78	15 Sep 78	15 Sep 78	14 Feb 95	05 Jan 76[*]	10 Jun 85	22 Sep 00	12 Jan 89[*]	05 Sep 91	10 May 02	10 May 02	
Jamaica	03 Oct 75	03 Oct 75			04 Jun 71	19 Oct 84			14 May 91	10 May 02	*s:08 Sep 00*	
Japan	21 Jun 79	21 Jun 79			15 Dec 95[a]	25 Jun 85		29 Jun 99[a]	22 Apr 94	*s:10 May 02*	*s:10 May 02*	
Jordan	28 May 75	28 May 75			30 May 74[a]	01 Jul 92		13 Nov 91	24 May 91	*s:06 Sep 00*	*s:06 Sep 00*	
Kazakhstan					26 Aug 98[a]	26 Aug 98[a]	24 Aug 01	26 Aug 98[a]	12 Aug 94	10 Apr 03	24 Aug 01	
Kenya	01 May 72[a]	01 May 72 [a]			13 Sep 01[a]	09 Mar 84[a]		21 Feb 97[a]	31 Jul 90	28 Jan 02	*s:08 Sep 00*	
Kiribati									11 Dec 95 [a]			
Kuwait	21 May 96[a]	21 May 96 [a]			15 Oct 68[a]	02 Sep 94[a]		08 Mar 96[a]	21 Oct 91			
Kyrgyzstan	07 Oct 94[a]	07 Oct 94 [a]	07 Oct 95[a]		05 Sep 97[a]	10 Feb 97[a]	22 Jul 02 [a]	05 Sep 97[a]	07 Oct 94 [a]		12 Feb 03[a]	
Lao People's Democratic Republic	*s:07 Dec 00*	*s:07 Dec 00*			22 Feb 74[a]	14 Aug 81			08 May 91 [a]			
Latvia	14 Apr 92[a]	14 Apr 92 [a]	22 Jun 94[a]		14 Apr 92[a]	15 Apr 92[a]		14 Apr 92[a]	15 Apr 92 [a]	*s:01 Feb 02*	*s:01 Feb 02*	
Lebanon	03 Nov 72[a]	03 Nov 72 [a]			12 Nov 71[a]	21 Apr 97[a]		05 Oct 00[a]	14 May 91		*s:10 Oct 01*	
Lesotho	09 Sep 92[a]	09 Sep 92 [a]	07 Sep 00[a]		04 Nov 71[a]	22 Aug 95[a]	*s:06 Sep 00*	13 Nov 01[a]	10 Mar 92	*s:06 Sep 00*	*s:06 Sep 00*	
Liberia	*s:18 Apr 67*	*s:18 Apr 67*			05 Nov 76[a]	17 Jul 84			04 Jun 93			
Libyan Arab Jamahiriya	15 May 70[a]	15 May 70 [a]	16 May 89[a]		03 Jul 68[a]	16 May 89[a]		16 May 89[a]	16 Apr 93 [a]			
Liechtenstein	10 Dec 98[a]	10 Dec 98 [a]	10 Dec 98[a]	10 Dec 98[a]	01 Mar 00[a]	22 Dec 95[a]	24 Oct 01	02 Nov 90[*]	22 Dec 95	*s:08 Sep 00*	*s:08 Sep 00*	
Lithuania	20 Nov 91[a]	20 Nov 91 [a]	20 Nov 91[a]	28 Mar 02	10 Dec 98	18 Jan 94[a]	*s:08 Sep 00*	01 Feb 96	31 Jan 92 [a]	20 Feb 03		
Luxembourg	18 Aug 83	18 Aug 83	18 Aug 83[a]	12 Feb 92	01 May 78[*]	02 Feb 89	*s:10 Dec 99*	29 Sep 87[*]	07 Mar 94	*s:08 Sep 00*	*s:08 Sep 00*	
Madagascar	22 Sep 71	21 Jun 71	21 Jun 71		07 Feb 69	17 Mar 89	*s:07 Sep 00*	*s:01 Oct 01*	19 Mar 91	*s:07 Sep 00*	*s:07 Sep 00*	
Malawi	22 Dec 93[a]	22 Dec 93 [a]	11 Jun 96		11 Jun 96[a]	12 Mar 87[a]	*s:07 Sep 00*	11 Jun 96[a]	03 Jan 91 [a]	*s:07 Sep 00*	*s:07 Sep 00*	

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Malaysia						05 Jul 95			17 Feb 95 [a]			
Maldives					24 Apr 84[a]	01 Jul 93[a]			11 Feb 91	*s:10 May 02*	10 May 02	
Mali	16 Jul 74[a]	16 Jul 74 [a]	24 Oct 01 [a]		16 Jul 74[a]	10 Sep 85	05 Dec 00 [a]	26 Feb 99[a]	21 Sep 90	16 May 02	16 May 02[a]	
Malta	13 Sep 90	13 Sep 90 [a]	13 Sep 90 [a]	29 Dec 94[a]	27 May 71*	08 Mar 91[a]		13 Sep 90[a]	30 Sep 90	10 May 02	*s:07 Sep 00*	
Marshall Islands									05 Oct 93			
Mauritania					13 Dec 88	10 May 01[a]			16 May 91			
Mauritius	12 Dec 73[a]	12 Dec 73 [a]	12 Dec 73 [a]		30 May 72[a]	09 Jul 84[a]	*s:11 Nov 01*	09 Dec 92[a]	26 Jul 90 [a]	*s:11 Nov 01*	*s:11 Nov 01*	
Mexico	23 Mar 81[a]	23 Mar 81 [a]	15 Mar 02		20 Feb 75	23 Mar 81	15 Mar 02	23 Jan 86*	21 Sep 90	15 Mar 02	15 Mar 02	08 Mar 99
Micronesia (Federated States of)									05 May 93 [a]			
Monaco	28 Aug 97	28 Aug 97		28 Mar 00[a]	27 Sep 95[a]			06 Dec 91[a]	21 Jun 93 [a]	14 Nov 01	*s:26 Jun 00*	
Mongolia	18 Nov 74	18 Nov 74	16 Apr 91 [a]		06 Aug 69	20 Jul 81	28 Mar 02	24 Jan 02[a]	06 Jul 90	*s:12 Nov 01*	*s:12 Nov 01*	
Morocco	03 May 79	03 May 79			18 Dec 70	22 Jun 93[a]		21 Jun 93	21 Jun 93	22 May 02	02 Oct 01	21 Jun 93
Mozambique		21 Jul 93 [a]		21 Jul 93[a]	18 Apr 83[a]	16 Apr 97[a]		14 Sep 99[a]	26 Apr 94		06 Mar 03[a]	
Myanmar						22 Jul 97[a]			15 Jul 91 [a]			
Namibia	28 Nov 94[a]	28 Nov 94 [a]	28 Nov 94 [a]	28 Nov 94[a]	11 Nov 82[a]	23 Nov 92[a]	26 May 00	28 Nov 94[a]	01 Oct 90	16 Apr 02	16 Apr 02	
Nauru		*s:12 Nov 01*	*s:12 Nov 01*		*s:12 Nov 01*			*s:12 Nov 01*	27 Jul 94 [a]	*s:08 Sep 00*	*s:08 Sep 00*	
Nepal	14 May 91[a]	14 May 91 [a]	14 May 91 [a]	04 Mar 98[a]	30 Jan 71[a]	22 Apr 91	*s:18 Dec 01*	14 May 91[a]	14 Sep 90	*s:08 Sep 00*	*s:08 Sep 00*	
Netherlands	11 Dec 78	11 Dec 78	11 Dec 78	26 Mar 91	10 Dec 71*	23 Jul 91	22 May 02	21 Dec 88*	06 Feb 95	*s:07 Sep 00*	*s:07 Sep 00*	
New Zealand	28 Dec 78	28 Dec 78	26 May 89 [a]	22 Feb 90	22 Nov 72	10 Jan 85	08 Sep 00	10 Dec 89*	06 Apr 93	12 Nov 01	*s:07 Sep 00*	
Nicaragua	12 Mar 80[a]	12 Mar 80 [a]	12 Mar 80 [a]		15 Feb 78[a]	27 Oct 81		*s:15 Apr 85*	05 Oct 90			
Niger	07 Mar 86[a]	07 Mar 86 [a]	07 Mar 86 [a]		27 Apr 67	08 Oct 99[a]		05 Oct 98[a]	30 Sep 90			
Nigeria	29 Jul 93[a]	29 Jul 93 [a]			16 Oct 67[a]	13 Jun 85	*s:08 Sep 00*	28 Jun 01	19 Apr 91	*s:08 Sep 00*	*s:08 Sep 00*	
Niue									20 Dec 95 [a]			
Norway	13 Sep 72	13 Sep 72	13 Sep 72	05 Sep 91	06 Aug 70*	21 May 81	05 Mar 02	09 Jul 86*	08 Jan 91	*s:13 Jun 00*	02 Oct 01	
Oman									09 Dec 96 [a]			
Pakistan					21 Sep 66	12 Mar 96[a]			12 Nov 90	*s:26 Sep 01*	*s:26 Sep 01*	

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Palau									04 Aug 95 [a]			
Panama	08 Mar 77[a]	08 Mar 77	08 Mar 77	21 Jan 93[a]	16 Aug 67	29 Oct 81	10 May 01	24 Aug 87	12 Dec 90	08 Aug 01	09 Feb 01	
Papua New Guinea					27 Jan 82[a]	12 Jan 95[a]			02 Mar 93			
Paraguay	10 Jun 92[a]	10 Jun 92	10 Jan 95 [a]		*s:13 Sep 00*	06 Apr 87[a]	14 May 01	12 Mar 90[*]	25 Sep 90	27 Sep 02	*s:13 Sep 00*	*s:13 Sep 00*
Peru	28 Apr 78	28 Apr 78	03 Oct 80 [a]		29 Sep 71[*]	13 Sep 82	09 Apr 01	07 Jul 88[*]	05 Sep 90	09 May 02	09 May 02	
Philippines	07 Jun 74	23 Oct 86	22 Aug 89 [a]		15 Sep 67	05 Aug 81	*s:21 Mar 00*	18 Jun 86[a]	21 Aug 90	*s:08 Sep 00*	*s:08 Sep 00*	05 Jul 95
Poland	18 Mar 77	18 Mar 77	07 Nov 91 [a]		05 Dec 68[*]	30 Jul 80		26 Jul 89[*]	07 Jun 91	*s:13 Feb 02*	*s:13 Feb 02*	
Portugal	31 Jul 78	15 Jun 78	03 May 83	17 Oct 90	24 Aug 82[a] [*]	30 Jul 80	26 Apr 02	09 Feb 89[*]	21 Sep 90	*s:06 Sep 00*	*s:06 Sep 00*	
Qatar					22 Jul 76[a]			11 Jan 00[a]	04 Apr 95	25 Jul 02 a	14 Dec 01[a]	
Republic of Korea	10 Apr 90[a]	10 Apr 90 [a]	10 Apr 90 [a]		05 Dec 78[*]	27 Dec 84		09 Jan 95[a]	20 Nov 91	*s:06 Sep 00*	*s:06 Sep 00*	
Republic of Moldova	26 Jan 93[a]	26 Jan 93 [a]			26 Jan 93[a]	01 Jul 94[a]		28 Nov 95	26 Jan 93 [a]	*s:08 Feb 02*	*s:08 Feb 02*	
Romania	09 Dec 74	09 Dec 74	20 Jul 93 [a]	27 Feb 91	15 Sep 70[a] [*]	07 Jan 82	*s:06 Sep 00*	18 Dec 90[a]	28 Sep 90	11 Nov 01	18 Oct 01	
Russian Federation	16 Oct 73	16 Oct 73	01 Oct 91 [a]		04 Feb 69[*]	23 Jan 81	*s:08 May 01*	03 Mar 87[*]	17 Aug 90	*s:15 Feb 01*		
Rwanda	16 Apr 75[a]	16 Apr 75 [a]			16 Apr 75[a]	02 Mar 81			24 Jan 91	23 Apr 02 a	15 Mar 02[a]	
Saint Kitts and Nevis						25 Apr 85[a]			24 Jul 90			
Saint Lucia					14 Feb 90[d]	08 Oct 82[a]			16 Jun 93			
Saint Vincent and the Grenadines	09 Nov 81[a]	09 Nov 81 [a]	09 Nov 81 [a]		09 Nov 81[a]	05 Aug 81[a]		01 Aug 01[a]	26 Oct 93			
Samoa						25 Sep 92[a]			29 Nov 94			
San Marino	18 Oct 85[a]	18 Oct 85 [a]	18 Oct 85 [a]		12 Mar 02			*s:18 Sep 02*	25 Nov 91 [a]	*s:05 Jun 00*	*s:05 Jun 00*	
Sao Tome and Principe	*s:31 Oct 95*	*s:31 Oct 95*	*s:06 Sep 00*		*s:06 Sep 00*	*s:31 Oct 95*	*s:06 Sep 00*	*s:06 Sep 00*	14 May 91 [a]			*s:06 Sep 00*
Saudi Arabia					23 Sep 97[a]	08 Sep 00		23 Sep 97[a]	26 Jan 96 [a]			
Senegal	13 Feb 78	13 Feb 78	13 Feb 78		19 Apr 72[*]	05 Feb 85	26 May 00	21 Aug 86[*]	01 Aug 90	*s:08 Sep 00*	*s:08 Sep 00*	09 Jun 99[a]
Seychelles	05 May 92[a]	05 May 92 [a]	05 May 92 [a]	15 Dec 94[a]	07 Mar 78[a]	06 May 92[a]		05 May 92[a] [*]	07 Sep 90 [a]	*s:23 Jan 01*	*s:23 Jan 01*	15 Dec 94[a]
Sierra Leone	23 Aug 96[a]	23 Aug 96 [a]	23 Aug 96 [a]		02 Aug 67	11 Nov 88	*s:08 Sep 00*	25 Apr 01	18 Jun 90	16 May 02	17 Sep 01	*s:15 Sep 00*
Singapore						05 Oct 95[a]			05 Oct 95 [a]	*s:07 Sep 00*		
Slovakia	28 May 93[d]	28 May 93 [d]	28 May 93	22 Jun 99	28 May 93[d] [*]	28 May 93[d]	17 Nov 00	28 May 93[d] [*]	28 May 93 [d]		*s:30 Nov 01*	

	CESCR	CCPR	CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
Slovenia	06 Jul 92[d]	06 Jul 92 [d]	16 Jul 93[a]	10 Mar 94	06 Jul 92[d]	06 Jul 92[d]	*s:10 Dec 99*	16 Jul 93[a]	06 Jul 92 [d]	*s:08 Sep 00*	*s:08 Sep 00*	
Solomon Islands	17 Mar 82[d]				17 Mar 82[d]	06 May 02[a]	06 May 02		10 Apr 95 [a]			
Somalia	24 Jan 90[a]	24 Jan 90 [a]	24 Jan 90[a]		26 Aug 75			24 Jan 90[a]	s:09 May 0			
South Africa	*s:03 Oct 94*	10 Dec 98	28 Aug 02[a]	28 Aug 02[a]	10 Dec 98*	15 Dec 95		10 Dec 98*	16 Jun 95	*s:08 Feb 02*		
Spain	27 Apr 77	27 Apr 77	25 Jan 85[a]	11 Apr 91	13 Sep 68[a]	05 Jan 84	06 Jul 01	21 Oct 87*	06 Dec 90	08 Mar 02	18 Dec 01	
Sri Lanka	11 Jun 80[a]	11 Jun 80 [a]	03 Oct 97[a]		18 Feb 82[a]	05 Oct 81	15 Oct 02 [a]	03 Jan 94[a]	12 Jul 91	08 Sep 00		11 Mar 96[a]
Sudan	18 Mar 86[a]	18 Mar 76 [a]			21 Mar 77[a]			*s:04 Jun 86*	03 Aug 90			
Suriname	28 Dec 76[a]	28 Dec 76 [a]	28 Dec 76[a]		15 Mar 84[d]	02 Mar 93[a]			02 Mar 93	*s:10 May 02*	*s:10 May 02*	
Swaziland					07 Apr 69[a]				08 Sep 95			
Sweden	06 Dec 71	06 Dec 71	06 Dec 71	11 May 90	06 Dec 71*	02 Jul 80	24 Apr 03	08 Jan 86*	29 Jun 90	20 Feb 03	*s:08 Jun 00*	
Switzerland	18 Jun 92[a]	18 Jun 92 [a]		16 Jun 94[a]	29 Nov 94[a]	27 Mar 97		02 Dec 86*	24 Feb 97	26 Jun 02	*s:07 Sep 00*	
Syrian Arab Republic	21 Apr 69[a]	21 Apr 69 [a]			21 Apr 69[a]	28 Mar 03[a]			15 Jul 93			
Tajikistan	04 Jan 99[a]	04 Jan 99 [a]	04 Jan 99[a]		11 Jan 95[a]	26 Oct 93[a]	*s:07 Sep 00*	11 Jan 95[a]	26 Oct 93 [a]	05 Aug 02a	05 Aug 02[a]	08 Jan 02
Thailand	05 Sep 99[a]	29 Oct 96 [a]			28 Jan 03[a]	09 Aug 85[a]	14 Jun 00		27 Mar 92 [a]			
The Former Yugoslav Republic of Macedonia	18 Jan 94[d]	18 Jan 94 [d]	12 Dec 94[a]	26 Jan 95	18 Jan 94[d]	18 Jan 94[d]	*s:03 Apr 00*	12 Dec 94[d]	02 Dec 93 [d]	*s:17 Jul 01*	*s:17 Jul 01*	
Togo	24 May 84[a]	24 May 84 [a]	30 Mar 88[a]		01 Sep 72[a]	26 Sep 83[a]		18 Nov 87*	01 Aug 90		*s:15 Nov 01*	*s:15 Nov 01*
Tonga					16 Feb 72[a]				06 Nov 95 [a]			
Trinidad and Tobago	08 Dec 78[a]	21 Dec 78 [a]			04 Oct 73	12 Jan 90			06 Dec 91			
Tunisia	18 Mar 69	18 Mar 69			13 Jan 67	20 Sep 85		23 Sep 88*	31 Jan 92	02 Jan 03	13 Sep 02	
Turkey	*s:15 Aug 00*	*s:15 Aug 00*			16 Sep 02	20 Dec 85[a]	29 Oct 02	02 Aug 88*	04 Apr 95	*s:08 Sep 00*	19 Aug 02	*s:13 Jan 99*
Turkmenistan	01 May 97[a]	01 May 97 [a]	01 May 97[a]	11 Jan 00[a]	29 Sep 94[a]	01 May 97[a]		25 Jun 99[a]	20 Sep 93 [a]			
Tuvalu						06 Oct 99[a]			22 Sep 95 [a]			
Uganda	21 Jan 87[a]	21 Jun 95 [a]	14 Nov 95		21 Nov 80[a]	23 Jul 85		03 Nov 86[a]	17 Aug 90	06 May 02a	30 Nov 01[a]	14 Nov 95[a]
Ukraine	12 Nov 73	12 Nov 73	25 Jul 91[a]		07 Mar 69*	12 Mar 81	*s:07 Sep 00*	24 Feb 87	28 Aug 91	*s:07 Sep 00*	*s:07 Sep 00*	
United Arab Emirates					20 Jun 74[a]				03 Jan 97 [a]			

	CESCR	CCPR		CCPROP1	CCPROP2	CERD	CEDAW	CEDAWOP	CAT	CRC	CRCOPAC	CRCOPSC	MWC
United Kingdom of Great Britain and Northern Ireland	20 May 76	20 May 76			10 Dec 99	07 Mar 69	07 Apr 86		08 Dec 88*	16 Dec 91	*s:07 Sep 00*	*s:07 Sep 00*	
United Republic of Tanzania	11 Jun 76[a]	11 Jun 76	[a]			27 Oct 72[a]	20 Aug 85			11 Jun 91		24 Apr 03[a]	
United States of America	*s:05 Oct 77*	08 Jun 92				21 Oct 94	*s:17 Jul 80*		21 Oct 94*	s:16 Feb 9	23 Dec 02	23 Dec 02	
Uruguay	01 Apr 70	01 Apr 70		01 Apr 70	21 Jan 93	30 Aug 68*	09 Oct 81	26 Jul 01	24 Oct 86*	20 Nov 90	*s:07 Sep 00*	*s:07 Sep 00*	15 Feb 01[a]
Uzbekistan	28 Sep 95[a]	28 Sep 95	[a]	28 Sep 95[a]		28 Sep 95[a]	19 Jul 95[a]		28 Sep 95[a]	29 Jun 94	[a]		
Vanuatu							08 Sep 95			07 Jul 93			
Venezuela	10 May 78	10 May 78		10 May 78	22 Feb 93	10 Oct 67	02 May 83	13 May 02	29 Jul 91*	14 Sep 90	*s:07 Sep 00*	09 May 02	
Viet Nam	24 Sep 82[a]	24 Sep 82	[a]			09 Jun 82[a]	17 Feb 82			28 Feb 90	20 Dec 01	20 Dec 01	
Yemen	09 Feb 87[a]	09 Feb 87	[a]			18 Oct 72[a]	30 May 84[a]		05 Nov 91[a]	01 May 91			
Yugoslavia	12 Mar 01[d]	12 Mar 01	[d]	06 Sep 01	06 Sep 01[a]	12 Mar 01[d]*	26 Feb 82		12 Mar 01[d]*	03 Jan 91	[d]	31 Jan 03	10 Oct 02
Zambia	10 Apr 84[a]	10 Apr 84	[a]	10 Apr 84[a]		04 Feb 72	21 Jun 85		07 Oct 98[a]	06 Dec 91			
Zimbabwe	13 May 91[a]	13 May 91	[a]			13 May 91[a]	14 May 91[a]			11 Sep 90			

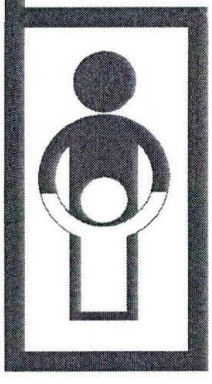
	CESCR	CCPR	CCPR-OP1	CCPR-OP2-DP	CERD	CEDAW	CEDAW-OP	CAT	CRC	CRC-OP-AC	CRC-OP-SC	MWC
REMAINING SIGNATORIES (&)	7	8	5	7	8	2	33	12	2	63	68	10
TOTAL STATE PARTIES	146	149	104	49	166	172	50	132	191	51	50	21

Notes:
The dates listed refer to the date of ratification, unless followed by:
an "a" which signifies accession,
"d", which signifies succession, or
"s", which signifies signature only.
(&) Among non-State parties.
* indicates that the state party has recognized the competence to receive and process individual communications of the Committee on the Elimination of Racial Discrimination under article 14 of the CERD (total 40 state parties) or of the Committee against Torture under article 22 of CAT(total 52 state parties).

WHO/V&B/00.29
ORIGINAL: ENGLISH
DISTR.: GENERAL

Meeting on the impact of targeted programmes on health systems: a case study of the Polio Eradication Initiative

WHO, Geneva, 16-17 December 1999



DEPARTMENT OF VACCINES AND BIOLOGICALS

World Health Organization
Geneva
2000

The Department of Vaccines and Biologicals thanks the donors whose unspecified financial support has made the production of this document possible.

This document was produced by the
Expanded Programme on Immunization
of the Department of Vaccines and Biologicals

Edited by Health and Development Networks (www.hdnet.org)

Ordering code: WHO/V&B/00.29
Printed : ***September 2000***

This document is available on the Internet at:
www.who.int/vaccines-documents/

Copies may be requested from:
World Health Organization
Department of Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• *Fax:* + 41 22 791 4192 • *E-mail:* vaccines@who.int •

Contents

Abbreviations

AFP	acute flaccid paralysis
AIIMS	All India Institute of Medical Sciences
BASICS	Basic Support for Institutionalizing Child Survival
CDC	Centers for Disease Control and Prevention (USA)
CIDA	Canadian International Development Agency
CORE	The Core Group - Child Survival Collaborations and Resources Group
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DTP3	Three doses of diphtheria-tetanus-pertusis vaccine
EC	European Commission
EPI	Expanded Programme on Immunization
GAVI	Global Alliance for Vaccines and Immunization
GCC	Global Certification Committee
GLP	good laboratory practices
ICC	Interagency Coordinating Committee
IndiaCLEN	India Clinical Epidemiology Network
KFW	German Development Bank
LABNET	Global Polio Laboratory Network
MCH	maternal and child health
NGO	nongovernmental organization
NID	national immunization day
NORAD	Norwegian Agency for Development Cooperation
OPV	oral polio vaccine
PAHO	Pan American Health Organization
PE	polio eradication
PHC	primary health care
PHR	Partnerships for Health Reform
PPI	Pulse Polio Immunization

QA	quality assurance
QAP	quality assurance project
QM	quality management
SNID	subnational immunization day
TB	tuberculosis
TCG	Technical Consultative Group
UCI	Universal Childhood Immunization
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VVM	vaccine vial monitors
WHA	World Health Assembly

Acknowledgements

The time and efforts of the many people that helped produce this report are gratefully acknowledged. In particular, Ms Andrea Gay (UN Foundation, Washington) who served as rapporteur at the meeting, and Ms Ellyn Ogden (USAID, Washington).

Executive summary

On 16–17 December 1999, WHO convened a meeting on the impact of targeted programmes on health systems: a case study of the Polio Eradication (PE) Initiative.

Much progress has been achieved in PE, but tension exists within polarized camps of opinion about whether eradication activities have been implemented in a way that maximizes their potential positive impacts on immunization and health systems, and minimizes any negative effects. This debate has prompted a series of studies to try and understand the dynamics between PE and other health systems issues more thoroughly.

The meeting reviewed six recent studies assessing the effects of the PE on immunization and broader health systems development. The primary areas of impact of PE were summarized in the following categories: management; relations with the community and social mobilization; strengthening immunization and health systems; opportunity costs; effect on routine EPI and other health services; promotion of vitamin A; promotion of intersectoral collaboration; improvement in laboratory services; disease surveillance; and financial effects on routine immunization and health care budgets.

There is no debate that PE holds the potential for positive synergies and impact on health systems. Determining the extent to which this has been achieved has proven to be a difficult task, as most findings have been country-specific and cannot therefore be generalized. The studies presented at this meeting found no overwhelming evidence of either great positive or serious negative impact on national health systems. However, it is widely accepted that there are "missed opportunities" associated with PE.

The main operational conclusions are that:

- Polio eradication does not automatically have a positive health systems impact, nor grave disruption or diversion. Commonly the studies found mixed positive and negative effects, with no firm conclusion in either direction.
- More positive impacts can only be achieved by having specific health systems objectives and targets, and an explicit process for monitoring progress.
- Most negative impacts can be averted through better planning.

The recommendations from the meeting summarize the next steps required to optimize the opportunities of PE to strengthen health systems while minimizing threats. First, there are actions that can be taken immediately to ensure greater synergy between PE and health system strengthening, including a renewed focus on routine immunization, linking acute flaccid paralysis (AFP) to surveillance for other diseases, and using PE training and supervision activities to benefit other health services as well.

Second, there is broad agreement that the health systems strengthening potential of PE has been hindered by the lack of an explicit monitoring framework (including specific objectives and targets) for this part of the PE goal. Prompt action needs to be taken to redress this situation, including (i) the development and dissemination of a simple and useable matrix of indicators for planning and monitoring the health systems strengthening and routine immunization services impact of PE; and (ii) selection of an oversight committee to monitor country-level and global progress towards the health systems strengthening part of the PE goal.

Third, there remain some important gaps in our understanding of PE that need yet to be documented.

Fourth, health systems strengthening cannot be achieved by, nor is it the responsibility of, PE alone. Stronger linkages need be forged with groups and specialists working on health systems development in order to fully maximize the impact of PE, maintain political and financial commitment to immunization, and to help guide health sector reform decisions that may affect immunization services.

Finally, the World Health Assembly (WHA) goal of eradicating polio while strengthening health systems is more than an empty promise. A sincere commitment and environment of goodwill does exist among the PE partners to realize the full vision of the WHA goal. This is perhaps best captured in the words of one of the researchers present at the meeting who stated that although it was our duty to "first do no harm" – for the legacy of polio eradication, however, this would be setting our ambitions far too low.

1. Introduction

The meeting on the impact of targeted programmes on health systems: a case study of the Polio Eradication (PE) Initiative was held in Geneva, Switzerland from 16 to 17 December 1999. Dr Daniel Tarantola, Special Adviser to the WHO Director-General, opened the meeting and welcomed the participants (see Annex 1: Agenda).

The World Health Organization (WHO) was represented by staff from WHO headquarters, the Regional Offices for Africa, the Americas, Europe and the Eastern Mediterranean. The United Nations Children's Fund (UNICEF) was represented by headquarters' staff. Also present were representatives and key polio eradication stakeholders from the UN Foundation, Canadian International Development Agency (CIDA), United States Agency for International Development (USAID), Centers for Disease Control and Prevention (CDC), European Commission (EC), Global Alliance for Vaccines and Immunization (GAVI), Department for International Development, UK (DFID), Norwegian Agency for Development Cooperation (NORAD), World Bank, The Core Group – Child Survival Collaborations and Resources Group (CORE), Basics Support for Institutionalizing Child Survival (BASICS), and country managers from Lao People's Democratic Republic (PDR), Nepal and Tanzania, etc. (see Annex 2: List of participants).

In 1988 the Forty-first World Health Assembly (WHA) committed WHO to the goal of "global eradication of poliomyelitis by the year 2000" emphasizing that this should be *"pursued in ways which strengthen the development of immunization programmes as a whole, fostering its contribution, in turn, to the development of the health infrastructure and of primary health care"*.

In December 1999, with the goal of polio eradication fast approaching, WHO felt it appropriate and timely to gather partners together to share, discuss and review new information and data assessing the impact of polio eradication on health systems.

The objectives and expected outcomes of the meeting were as follows:

Objectives:

- To review and discuss the findings of the WHO study of the impact of polio eradication activities on health systems functioning and development.
- To share other complementary assessment efforts.
- To identify any missing information or additional studies that are needed.
- To agree on a methodology for assessing the health systems impact of polio eradication.

Expected outcomes:

- Identify strategies for strengthening health systems through PE activities.
- Develop a dissemination strategy for findings to influence future planning and implementation of PE activities and achieve maximum health system benefits.
- Reach a consensus on a revised methodology for the assessment of PE impact on health systems and recommendations on next steps.

This report provides a summary of the discussions, main findings/conclusions, and recommendations resulting from the meeting.

important for the whole EPI programme in Lao PDR. Surveillance was found to be weak in Nepal and Tanzania. Linkages and partnerships were forged but

commonly not exploited for other health purposes. The external inputs were generally found to be additional with new donors mobilized. No diversions of national funds were registered. The national contribution to PE was mainly in the form of substantial human resources.

- Overall, the positive impacts were strongest in Lao PDR where PE has established a basis for services that did not exist before. In Nepal and Tanzania there were striking examples of missed opportunities and some negative impacts. Important methodologically, it was noted that the potential positive impacts tend to be "softer" and more long-term and thus harder to establish. Whereas the potential negative impacts tend to be disruptive in nature and thus more apparent and easily measurable. It was also noted that it was difficult to compare countries due to differing capacity and contextual factors (i.e. health reform, decentralization). In summary, the study found neither any outstanding "automatic" positive impact of PE on health systems, nor grave disruption or diversion. Recognizing the great potential that PE has, the main operational conclusions were that: (i) most negative impacts can be averted through better planning; and (ii) positive impacts can only be systematically ensured by having clear objectives and instituting effective planning procedures to reach these objectives.
- In India, the All India Institute of Medical Sciences (AIIMS) and the India Clinical Epidemiology Network (IndiaCLEN), with financial support from USAID, carried out in-depth interviews and focus group discussions with 2163 stakeholders ranging from the Prime Minister and key decision-makers to mothers in the community. The study was implemented over two years (1997–98) and covered 24 diverse districts in 15 major states (and is still ongoing). The AIIMS/IndiaCLEN study concluded that the effects of PE on the health system had mostly been positive but that there were "threats" that had to be recognized explicitly and dealt with pre-emptively. The study indicated that PE had strengthened management capacity, improved social mobilization, and increased confidence in the health care system. None the less, better planning was required to minimize the disruptions caused by the national immunization days (NIDs).
- In 1999 with funding from USAID, the Partnerships for Health Reform (PHR) project conducted a study in Bangladesh, Côte d'Ivoire and Morocco, to determine the impact of PE on the financing of national immunization programmes and to the extent possible, the health system as a whole. Using trend analysis and a review of budget and financial expenditure records, the study found that funding (including government) for routine EPI activities has been increasing since the introduction of PE in each of the three countries. Typically donors have concentrated on funding either routine EPI or PE and have not made trade-offs in their support. Only a few organizations have been funding both activities. None appear to be reducing their funding for routine EPI activities, with the exception of UNICEF in Bangladesh. Informal reports however, suggested that USAID had made some reductions in routine EPI funding in other countries in West Africa as a result of financing PE activities. Overall it was noted that the funding for national immunization programmes (routine EPI and polio eradication activities) has been increasing at a higher rate than for the health budget as a whole. The study could not draw conclusions as to whether there were trade-offs in the provision of funding for immunization activities versus other health activities.

- Throughout the summer of 1999, the Quality Assurance Project (QAP), with funding from USAID, conducted a study to determine if the Global Polio Laboratory Network (LABNET) could be cited as a "best practice model" given that many other public health programmes rely on laboratory results to guide programme decisions (e.g. malaria, TB, or HIV). Using site visits and interviews, the key purpose was to identify the quality principles subscribed to by the LABNET that have contributed to its success and to determine whether these principles can be applied to other health programmes and or health systems to improve their outcomes. The study found that the LABNET effectively uses quality assurance (QA) activities in the clinical laboratory setting to achieve, according to internationally recognized scientific, standards, the stature of good laboratory practices (GLP). In addition, QA activities are used to monitor compliance with GLP in clinical laboratories. The laboratories visited displayed a sincere commitment and sense of pride at being involved within the network. The findings reveal that the network demonstrates six quality principles: leadership; systematic and regular quality assurance activities (such as performance standards, monitoring); ongoing training and capacity building; effective communication; recognition and accreditation; and accurate documentation and data management that is used to inform programme implementation. The achievement of these principles was found to be especially noteworthy given the context of minimum equipment/supplies and resource constraints. The study concluded that the substantive and numerous quality principles found in the LABNET may serve as benchmarks for closing performance gaps in other laboratories or health programmes.
- In 1999, UNICEF carried out a rapid assessment of the impact of PE on routine EPI and other health activities in two countries: Benin and Niger. The countries were selected based on their performance (Niger as a low performer, Benin as a high performer). The assessment process included a qualitative review of available documentation, interviews with key actors, and field visits to two districts. The main issues considered were EPI coverage, time/workloads, social mobilization/information, education and communication (IEC), cold chain, integration of other health interventions, reaching the unreached, budget allocations, and surveillance. The UNICEF assessment also concluded that there was little evidence of either a positive or negative impact of PE on routine immunization and other aspects of primary health care. Key obstacles to better interaction between EPI and PE were identified: late start of NIDs planning process due to factors beyond national control; lack of consolidated and integrated social mobilization/IEC strategies; and generally poor distribution of operational resources and budgets for routine EPI and other health activities at the district level (this was less of an obstacle in Benin where the Bamako Initiative makes funds available). The integration of vitamin A with NIDs was noted as a positive impact but there were missed opportunities to develop more systematic inventory monitoring for the cold chain, and to integrate (AFP) surveillance with other disease surveillance efforts (it was noted the relative importance of this would increase as the countries began to embark on more human resource intensive active AFP surveillance).

3.2 Major areas of PE impact on health systems and services delivery

Presentation and discussion of the study findings highlighted a number of specific areas of impact of PE. These included:

- **Management**: all of the studies that addressed this issue (WHO, AIIMS/IndiaCLEN, and UNICEF) concluded that PE had had some positive impact on health systems management. For example, in Nepal the NIDs were the first activities where funds had been released directly to regions and districts. In Lao PDR, PE helped promote a new district strategy that stressed health care delivery closer to the community. There was also recognition that much more could have been done to institutionalize the good management practices engendered by PE.
- **Relations with the community and social mobilization**: consistent with the Taylor Commission findings, there was also consensus from the two in-depth studies that PE helped improve the community's perceptions of the health services, including the political support given to the health care system. For example, in India the NIDs improved the confidence of mothers in health workers and helped change their perception that health workers were only interested in family planning. Generally, PE social mobilization efforts have been widespread and successful.
- **Strengthening immunization and health systems**: the studies concluded that PE eradication has not had a very strong positive or negative impact on immunization and health systems, although the long-term implications may not be realized for many years. This time horizon is of significance given that the observed negative impacts of PE tend to more easily measurable in the short-term, while the potential positive benefits are more long-term in nature and consequently more difficult to quantify. Meeting participants agreed that polio eradication did have indirect opportunity costs in that attention given to other aspects of strengthening immunization programmes was not as great as it could have been (e.g. health sector reform, safe injections, or introduction of new vaccines). In order to avoid this indirect consequence and to increase the likelihood that PE has positive spin-offs there should be specific goals for system strengthening agreed to at the outset with established indicators for regular monitoring and reporting.
- **Opportunity costs**: some observers have expressed concern that there are significant opportunity costs associated with PE, when health staff are taken away from other important activities to focus on NIDs. The WHO study addressed this issue explicitly, assessing the amount of time health workers devoted to PE in Lao PDR, Nepal and Tanzania. The investigators calculated that the demands of PE on work time increased towards the peripheral level of the health system where staff spent as much as 12 days per year on this activity (about 5% of their working time). The effect of this on the delivery of other health services, however, depended very much on staff productivity. In the three countries examined in the WHO study, PE activities were not felt to have compromised other activities, due to substantial "slack" in the system. The UNICEF assessment also examined staff time allocation and in West Africa documented a more highly concentrated effort at the central/regional level

(between 66-100% of time over the 3-4 month NIDs planning and implementation period) and less at the district and health facility level (35% and 25% respectively over a 3-month time period concerning NIDs – or approximately 18-20 days per year). The review of activity records found no clear positive or negative impact on the delivery of services as a consequence of staff time spent on NIDs, and the report similarly observed that districts with low baseline health services activity were unlikely to be negatively affected by NIDs.

- **Delivery of routine EPI services**: one of the most debated aspects of PE is whether it interferes with routine immunization activities. Only the WHO and UNICEF studies examined this issue quantitatively and their analysis was hampered by the lack of survey data on coverage rates and coincidental health reforms such as decentralization. The WHO study concluded that the relationship between PE and routine immunization coverage was hard to assess. Both Lao PDR and Nepal experienced an increase in routine coverage after NIDs began but this coincided with an expansion in the number of peripheral health facilities. In Tanzania, health sector reforms, including decentralization, "overshadowed any possible impact" of PE on routine services. The UNICEF study found no effect of PE on routine immunization coverage in Benin and that the poor performance in Niger did not improve. It concluded that there was little evidence of either positive or negative PE impacts on routine immunization but identified a number of "missed opportunities" and a need to be more proactive. Negative impacts could have been avoided with better planning thereby lessening last minute pressures on the health system. All studies included qualitative findings and anecdotes, both positive and negative, on the effect of PE on other aspects of routine immunization services.

- **Delivery of other health services**: there has also been considerable debate about whether PE has disrupted other ongoing health services and the three studies examining this issue concluded that disruptions had occurred and in some cases may have been serious. For example, in Nepal family planning activities were "somewhat" hampered by NIDs. However, the WHO study examined routinely reported monthly data on maternal child health (MCH) services and found that they showed the same seasonal variation as before PE began. The AIIMS/IndiaCLEN study found that half of all stakeholders interviewed believed that PE had actually improved primary health care (PHC) services, although concern was expressed that villagers might come to expect other health services to similarly be delivered house-to-house. The two major studies and the UNICEF appraisal concluded that many of the negative effects of PE could have been prevented with better planning.

- **Promotion of vitamin A**: NIDs associated with PE have been used as a vehicle for distributing vitamin A capsules to children from 6 months to five years of age. This is now being carried out in over 50 countries worldwide and has met with widespread acceptance and appreciation of parents. Given the large expected impact of vitamin A supplementation (23% reduction in overall mortality among children 6 to 59 months of age according to a meta-analyis of 8 randomized trials), there is broad consensus that this is a significant positive contribution of PE to child survival.

- **Promotion of intersectoral collaboration**: the two in-depth studies indicated that PE was a good example of effective intersectoral collaboration. For example, in a number of countries it was found that collaboration mechanisms established for PE provided useful models for other programmes. However, it was noted that Interagency Coordinating Committees (ICCs) that had been established to assist PE were not always used to help strengthen the immunization programme as a whole.
- **Improvement in laboratory services**: As a result of PE there has been considerable cooperation among the 150 laboratories involved in identifying the poliovirus. It appears that this unique cooperation, through a process of strict quality control, accreditation, and regular communication, has led to a substantial improvement in the accuracy and quality of these laboratories.
- **Disease surveillance**: the three studies addressing this issue found that AFP surveillance had been introduced in all countries, but the WHO-study noted insufficient quality of implementation in Nepal and Tanzania. Overall, there had been relatively little spin-off in terms of strengthening surveillance capacity for other priority diseases. It was agreed that there was potential for wider positive effect in this regard.
- **Financial effects of PE on routine immunization and health care budgets**: the detailed analysis of immunization financing in Bangladesh, Côte d'Ivoire, and Morocco, funded by USAID, concluded that: (i) funding for routine immunization has increased since PE began; (ii) government funding of routine immunization has increased since PE was initiated; and (iii) in Côte d'Ivoire and Morocco, but not Bangladesh, the government has increased its annual expenditure on PE. These results suggest there was little financial trade-off between PE and routine immunization. Although the impact on the financing of other components in the health budget was beyond the scope of the study, it was noted that the funding for national immunization programmes (routine EPI and PE) has been increasing at a higher rate than for the health budget as a whole. The WHO study attempted to examine the impact of PE on financing of other health services in Lao PDR, Nepal and Tanzania, but found no evidence that it has reduced the financial resources available for other programmes. Investigation of this issue in the UNICEF assessment was inconclusive. Supplementary information presented by WHO during the meeting demonstrated that of the estimated US$ 319 million in external donor funding for PE in 1999, over 80% was funding that was not previously targeted for developing country immunization services (Ms J. Linkins/WHO, 17 December 1999). As much as 50% of the external PE financing was from funding sources such as Rotary International that have not previously contributed to official development assistance for health.

3.3 Remaining information gaps

The participants of the meeting raised important concerns about programmatic gaps that have not been included in the studies described above, but which should be considered to complete the assessment of the legacy of PE. The gaps identified by participants included:

- The impact of PE on equity in access to health services.
- The impact of PE on community ownership of their health agenda.
- The long-term impact and lessons learned from the global partnership and agency coalition that PE has mobilized to achieve a worldwide objective (e.g. the translation of political will into resources for action, public/private partnership; development of policy and regulatory agreements; interagency collaboration; global lessons/impact).
- The geopolitical impact of cross-border and regional collaboration necessary for PE.
- The peace-building impact of "Days of Tranquillity", "Corridors of Peace", and negotiated humanitarian cease-fires to achieve PE in war-torn countries.
- The childhood morbidity and mortality impact of integrating vitamin A supplements with PE activities.
- Further documentation of the impact of PE on laboratory capacity (differences before and after PE).
- The opportunity costs and effect on PE on routine immunization.

3.4 Recommendations

There was consensus that conducting further country studies to seek more evidence to prove or disprove the hypotheses that eradication efforts are good or bad for health systems would not add much to our current knowledge. The urgency is to implement what is already known about how to optimize the benefits and minimize the threats of PE. Towards this end, the participants identified a series of specific action-oriented next steps for immediate implementation by PE staff, for health systems staff, and for future eradication initiatives. These are outlined in Section 3.5.

There was strong agreement among the participants of the meeting that the immunization and health systems strengthening potential of PE has been hindered by the lack of an explicit monitoring framework (including specific objectives and targets) for this part of the WHA goal declared in 1988. As a consequence, there have been many "missed opportunities" to manage PE with a more balanced and effective approach. Nevertheless, it is not too late. A sincere commitment and environment of goodwill among the PE partners to realize the full vision of the WHA goal does exist.

To meet this challenge, the participants of the meeting proposed the following recommendations:

1) Develop and disseminate a simple checklist with key indicators for monitoring the impact of PE on (i) delivery of immunization services; and (ii) health systems at the country level (the matrix presented in the WHO study could serve as a starting point). Ideally this monitoring tool should be used to raise awareness of the potential positive and negative effects of PE, facilitate more systematic and broader documentation of country experiences, and ensure that polio strategy implementation is modified to fully exploit opportunities for systems strengthening (see Annex 5 for draft checklist and indicators).

2) Compile all the existing documentation and studies on the impact of PE into an overview "state-of-the-art" paper or collection. Much is already known and this should be made easily accessible and shared widely.

3) Initiate efforts to document remaining information gaps in knowledge of the impact of polio eradication. These include: the global partnership story; the impact of adding vitamin A to polio NIDs; Days of Tranquillity; cross-border and interregional initiatives; social mobilization and community ownership; PEI and equity in health; the polio laboratory network; and intersectoral collaboration.

4) Establish an oversight committee as part of the accountability framework for the immunization and health systems strengthening aspect of the PE goal. For example, one participant suggested that the terms of reference for the Global Certification Committee (GCC) or other existing body could be expanded to include this responsibility. This issue should be discussed and decided at the next Technical Consultative Group (TCG) meeting (Geneva, May 2000).

5) Engage broader participation of those with influence and expertise in the area of health systems to ensure that the opportunities of targeted programmes are fully exploited and the threats to health systems minimized (see Section 3.5).

3.5 Next steps: optimizing opportunities of targeted health programmes

Clearly, targeted health programmes provide opportunities and synergies for strengthening health systems if appropriate action is taken. The meeting participants recognized that there were certain activities that the PE staff and partners could implement directly and that are considered to be within their direct line of responsibility. Other activities that would help to fully realize the potential positive benefits of PE require the participation and buy-in of a wider range of people with different spheres of influence. This second group of activities would take longer to implement, but the participants noted that without their active participation, little would move forward.

I. Proposed immediate actions for PE staff

a) Development, field testing, dissemination and follow-up of a checklist (see Annex 5 for draft checklist and indicators), based on the findings of the studies presented to date, that would help guide PE activities in order to maximize the positive impacts under their direct sphere of influence.

b) Document both positive and negative anecdotes about the impact of PE.

c) Polio plans should be nested within broader and more comprehensive EPI plans. There is a need for a renewed focus on routine immunization.

d) Expand district level micro-planning to include EPI and disease surveillance in addition to polio. Use the information from PE to improve planning for other programmes.

e) Make NIDs training schedules available in order to avoid disrupting activities planned for other programmes. Use PE training and supervision activities to benefit other health services.

f) Assure vulnerable programmes protected during NIDs, e.g. TB, routine immunization, emergency care.

g) Expand Interagency Coordinating Committees (ICCs) to include action planning for EPI and disease surveillance; enhance membership by inviting key opinion leaders and stakeholders to participate.

h) Budgets should include polio and non-polio needs; the ICCs with support from WHO should track non-polio funding with the same level of detail as the polio funding.

i) Integrate other diseases into AFP surveillance systems as locally appropriate.

II. Proposed actions for health systems staff

a) Develop plans and implementation strategies to transfer health systems strengthening skills and lessons learned to other programmes.

b) Develop, track and monitor indicators to measure the impact of PE on broader health systems. Include indicators to monitor interaction of sector reform on routine immunization services.

c) Develop a strategy and plan of action for documenting financial and political commitment over time.

d) Report back at polio/immunization and health sector meetings.

e) Recognize and highlight for health systems experts the implications of PE for other targeted programmes.

III. Proposed actions for future eradication activities

Meeting participants reviewed the conclusions and recommendations of the *Report of the Workshop on Disease Elimination/Eradication and Sustainable Health Development* (Salsibury D, 1998). There is much which is already known about the "best practices" for disease eradication initiatives; the challenge is to implement this knowledge. Participants endorsed the workshop recommendations and enhanced them with additional suggestions (in italics):

a) Eradication initiatives should be implemented with the support of broad coalitions of partners. Great efforts should be made to build consensus and a shared sense of mission among United Nations agencies, the donor community (both public and private sector) and participating communities. *Planning must involve partnerships among all stakeholders.*

b) Managers of eradication initiatives should respect the importance of other, ongoing public health programmes being promoted and implemented by the ministry of health and by other staff, internationally, nationally and locally.

c) To the extent possible, peripheral level decision-makers should be allowed to reach centrally established targets in a flexible and locally appropriate way. Similarly, when centrally driven priorities are set, those with responsibility at the peripheral level, who may have considerable autonomy for resource allocation, should understand their role within the wider objective.

d) Successful eradication programmes are good examples of effective management. The programme activities should further the development of leadership and managerial skills among health personnel, building programme management capacities which the staff involved can carry to other health programmes, *especially at the district level. Identify opportunities for capacity building and ways to measure change.*

e) Surveillance of programmatic processes and outcomes (reduced morbidity and mortality) is important for successful eradication. The initiatives must demonstrate the principles of effective surveillance and actively develop and implement integrated surveillance systems which can readily be adapted to meet the needs of other national priority programmes after eradication is achieved.

In addition, the participants suggested the following:

f) There must be a genuine willingness to learn from and document any negative effects in order to address them.

g) Any future disease control initiatives similar to PE should set specific goals for assisting health system development and collect baseline data against which to measure progress.

h) Strengthening health systems contributes to eradication and *vice versa*. Specific objectives should be identified and indicators for successful strengthening of the health care system should be used to monitor and report on progress.

i) Risk factors should be identified for future eradication programmes, particularly to guide and alert specific groups of countries that may be more vulnerable.

j) Eradication activities must be planned with an accurate assessment of resource needs to ensure success. In addition, there is a need to look beyond the traditional funding sources for new partners.

k) To develop a culture of prevention and health promotion, more attention should be paid to social mobilization and message development at all levels.

4. Conclusions

There is no debate that PE holds the potential for positive synergies and impact on health systems. Determining the extent to which this has been achieved has proven to be a difficult task, as most findings have been country-specific and cannot therefore be generalized. The studies presented at this meeting found no overwhelming evidence of either great positive or serious negative impact on national health systems. However, it is widely accepted that there are "missed opportunities" associated with PE.

The main operational conclusions are that:

- Polio eradication does not automatically have a positive health systems impact, nor grave disruption or diversion. Commonly, the studies found mixed positive and negative effects, with no firm conclusion in either direction.
- More positive impacts can only be achieved by having specific health systems objectives and targets, and an explicit process for monitoring progress.
- Most negative impacts can be averted through better planning.

The recommendations from the meeting summarize the next steps required to optimize the opportunities of PE to strengthen health systems while minimizing threats. First, there are actions that can be taken immediately to ensure greater synergy between PE and health system strengthening, including a renewed focus on routine immunization, linking AFP to surveillance for other diseases, and using PE training and supervision activities to benefit other health services as well.

Second, there is broad agreement that the health systems strengthening potential of PE has been hindered by the lack of an explicit monitoring framework (including specific objectives and targets) for this part of the PE goal. Prompt action needs to be taken to redress this situation, including (i) the development and dissemination of a simple and useable matrix of indicators for planning and monitoring the health systems strengthening and routine immunization services impact of PE; and (ii) selection of an oversight committee to monitor country-level and global progress towards the health systems strengthening part of the PE goal.

Third, there remain some important gaps in our understanding of PE that need yet to be documented.

Fourth, health systems strengthening cannot be achieved by, nor is it the responsibility of, PE alone. Stronger linkages need to be forged with groups and specialists working on health systems development in order to fully maximize the impact of PE, maintain political and financial commitment to immunization, and to help guide health sector reform decisions that may affect immunization services.

Finally, the WHA goal of eradicating polio while strengthening health systems is more than an empty promise. A sincere commitment and environment of goodwill does exist among the PE partners to realize the full vision of the WHA goal. This is perhaps best captured in the words of one of the researchers present at the meeting who stated that although it was our duty to "first do no harm" – for the legacy of polio eradication, however, this would be setting our ambitions far too low.

5. References

Arora NK, et al. Pulse Polio Immunization Program Evaluation 1997-98. New Delhi: *All India Institute of Medical Sciences*; 1999: 271.

Aylward RB, Bilous J, Tangermann, RH, et al. Strengthening immunization services in the Western Pacific through the eradication of poliomyelitis. *Journal of Infectious Diseases* 1997;175 (suppl. 1): 268

Aylward RB, Hull HF, Cochi SL, Sutter RW, Olivé JM, Melgaard B. Disease eradication as a public health strategy: a case study of poliomyelitis eradication. *Bulletin of the World Health Organization, 2000*; 78(3):285-297.

Goodman T, Dalmiya N, de Benoist B, Schultink W. Polio as a platform: using national immunization days to deliver vitamin A supplements. *Bulletin of the World Health Organization, 2000*; 78 (3): 305-314.

Hull HF, Tangermann RH, Aylward RB, Andrus JK. (letter). Eradication of poliomyelitis. *Lancet.* 1999; 354: 1910.

Lee JW, Melgaard B, Hull H, Barakamfitiye D, Okwo-Bele JM. Ethical dilemmas in polio eradication (letter). *American Journal of Public Health.* 1998; 88:130-131.

Levin A, Ram S. The Impact the Polio Eradication Campaign on the Financing of Routine EPI: Findings of Three Case Studies. Bethesda: Partnership for Health Reform, University Research Co.; 1999.

MacAulay C, Verma M. Global Polio Laboratory Network: A Model for Good Laboratory Practice - A Study of the Quality Principles within the Global Polio Laboratory Network. Bethesda: Quality Assurance Project, University Research Co.; 1999.

Melgaard B, Creese A, Aylward RB, Olivé J-M, et al. Disease eradication and health systems development. *Bulletin of the World Health Organization, 1998*; 76 (suppl. 2): 26-31.

Mogedal S, Stenson B. Disease eradication: friend or foe to the health system? Synthesis report from field studies in Tanzania, Nepal and Lao PDR. (WHO/V&B/00.28).

PAHO/WHO. The Impact of the Expanded Programme on Immunization and the Polio Eradication Initiative on Health Systems in the Americas: Final Report of the "Taylor Commission". March 1995. Pan American Health Organization, Washington.

Roisin A. Assessment of the Impact of the Polio Eradication Initiative and National Immunization Days (NIDs) on Routine EPI and Other Ministry of Health Activities. UNICEF 1991 (unpublished draft report).

Salisbury D. Report of the Workgroup on Disease Elimination/Eradication and Sustainable Health Development. *Bulletin of the World Health Organization*, 1998; 76 (Suppl. 2): 72-79.

Sutter, R, Cochi, S. Comment: Ethical dilemmas in worldwide polio eradication programs. *American Journal of Public Health*, 1997; 87:913-916.

Tangermann RH, Costales M, Flavier J, et al. Poliomyelitis eradication and its impact on primary health care in the Philippines. *Journal of Infectious Diseases*, 1997; 175 (suppl.): 272-76.

Taylor Commission. The Impact of the Expanded Programme on Immunization and the Polio Eradication Initiative on Health Systems in the Americas. Washington, DC: Pan American Health Organization; 1995.

Taylor C, Cutts F, Taylor ME. Ethical dilemmas in current planning for polio eradication. *American Journal of Public Health*, 1997;87:922-925.

Taylor C, Taylor ME, Cutts F, Ethical dilemmas in polio eradication. (letter). *American Journal of Public Health*; 1998; 88: 1125.

World Health Organization. *Challenges and strategies for health systems development.* (WHO document HDP/97.3 1997)

Annex 1:
Agenda

Thursday, 16 December 1999

13:30-14:00	Registration	
14:00-14:15	Welcome/opening remarks	Dr D. Tarantola
Session 1	**Targeted programmes and health systems development**	
14:15-14:30	WHO's health systems perspective Polio eradication/EPI perspective – meeting objectives	Mr O. Adams Dr B. Melgaard
14:30-14:45	Disease eradication and health systems development: A summary of the debate	Dr D. Salisbury
14:45-15:00	**Discussion**	
Session 2	**Evaluating the impact of polio eradication on Health Systems**	
15:00-15:30	Multicountry assessment of the impact of polio eradication activities on health systems functioning and development: summary of case study methodology	Dr S. Mogedal
15:30-16:00	*Coffee*	
16:00-16:30	Multicountry assessment of the impact of polio eradication activities on health systems functioning and development: summary of case study results	Mr B. Stenson
16:30-17:30	**Discussion**	
18:00	*Cocktails*	

Friday, 17 November 1999

9:00-9:45	All India Institute of Medical Sciences Evaluation of the Pulse Polio Immunization programme: summary of methodology and results	Dr N.K. Arora
9:45-10:30	**Discussion**	
10:30-11:00	*Coffee*	
11:00-11:30	Summary of ongoing polio eradication impact studies	
	- financing of Polio Eradication Campaigns in Bangladesh, Côte d'Ivoire and Morocco (Partnerships for Health Reform)	Dr A. Levin
	- Lessons learned in the development of the Global Polio Laboratory Network (Quality Assurance Project)	Dr C. McCaulay
	- Experience in West Africa – Benin, Niger (UNICEF)	Dr J. Zucker
11:30-12:30	**Discussion**	
12:30-14:00	*Lunch*	
Session 3	**Next steps: optimizing opportunities of targeted health programmes**	
14:00-14:15	Summary of methodology issues and information gaps	Dr P. Ndumbe
14:15-15:00	**Discussion**	
15:00-15:30	*Coffee*	
15:30-15:45	Next steps: identifying strategies for strengthening health systems through PE, and dissemination of lessons learned	Ms E. Ogden
15:45-16:30	**Discussion**	
16:30-17:30	Conclusions and recommendations	Dr D. Salisbury

Annex 2:

List of participants

Dr C. Akim, EPI Programme Manager, Ministry of Health, P.O. Box 9083, Dar es Salaam, Tanzania
Tel: +255 51 450404; Fax: +255 51 450089

Dr Narendra K. Arora, Department of Pediatrics, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India
Tel: +91 11 6853125, +91 11 6526096; Fax: +91 11 686 2663
E-mail: nkmanan@hotmail.com

Dr Chanpen Choprapawon, Thailand Health Research Institute (THRI), National Health Foundation, 1168 Soi Phaholyothin 22, Phaholyothin Rd, Ladyao, Jatujak, Bangkok 10900, Thailand
Tel: +66 2 939 2239; Fax: +66 2 9 939 2122
E-mail: chanpen@health.moph.go.th

Dr Stephen L. Cochi, Director, Vaccine Preventable Disease Eradication Division, National Immunization Program, Centers for Disease Control and Prevention (CDC), 1600 Clifton Road, Mailstop E-05, Atlanta, GA 30333, USA
Tel: +1 404 639 8252; Fax: +1 404 639 8573
E-mail: slc1@cdc.gov

Dr M. Dawar, Canadian International Development Agency (CIDA), 200 Promenade du Portage, Hull, Quebec, K1A 0G4, Canada & Department of Health Care & Epidemiology, Faculty of Medicine, James Mather Building, 5804 Fairview Avenue, Vancouver, B.C., Canada V6T123
Tel: +1 819 994 7091; Fax: +1 819 997 9049
E-mail: mdawar@interchange.ubc.ca

Mrs Marleen Dijkman, National Institute of Public Health and the Environment Vaccine Division, Antonie van Leeuwen hoeklaan g, Bilthoven, The Netherlands

Dr Somthana Douangmala, Director, National Center for Paediatric Infectious Diseases, National EPI Manager, National Institute of Hygiene and Epidemiology, Ministry of Health, Vientiane, Lao People's Democratic Republic
Tel: +856 21 350027; Fax: +856 21 350067

Dr Fidel Font, International Federation of Red Cross and Red Crescent Societies (IFRC), Case postale 372, 1211 Geneva 19, Switzerland
Tel: +41 22 791 730 42 22; Fax: +41 22 733 03 95

Ms Andrea Gay, United Nations Foundation, 1301 Connecticut Avenue NW, Suite 700, Washington, D.C. 20036, USA
Tel: +1 202 887 9040 Fax: +1 202 887 9021
E-mail: agay@unfoundation.org

Dr Tore Godal, Executive Secretary, Global Alliance for Vaccines and Immunization, UNICEF, Palais des Nations, 1211 Geneva 10, Switzerland
Tel: +41 22 909 5020; Fax: +41 22 909 5931
E-mail: tgodal@unicef.ch

Mr Richard Greene, Chief, Child Survival Division, US Agency for International Development, Washington, D.C. 20523-3700, USA
Tel: +1 202 712 128; Fax: +1 202 216 3702
E-mail: rgreene@usaid.gov

***Mr Klaus Hornetz**, Senior Health & Population Adviser, Kreditanstalt für Wiederaufbau, D-60045 Frankfurt am Main, Germany
Tel: +49 69 74 31 36 00; Fax: +49 69 74 31 29 44
E-mail: bettina.tewinkel@kfw.de

Dr Inaam Ul Haq, Health and Population Programme Officer, Department for International Development (DFID), British High Commission, Development Section, Diplomatic Enclave, Ramna 5, P.O. Box 1122, Islamabad, Pakistan
Tel: +92 51 206071/75; Fax: +92 51 823017/823439

***Dr Jacques Laruelle**, Senior Programme Officer, Belgian Administration for Development Cooperation, Belgium
Tel: +32 2 519 0752; Fax: +32 2 519 0570
E-mail: m4.vnu@badc.fgov.be

Dr M. Lakshman, Department of Pediatrics, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India
Tel: +91 11 6853125/6593692; Fax: +91 11 6853125
E-mail: mlvel@hotmail.com

Dr Ann Levin, Abt Associates, Partnership for Health Reform (PHR), Hampden Square, 4800 Montgomery Lane, Suite 600, Bethesda, MD 20814-5341, USA
Tel: +1 301 913 0500; Fax: +1 301 652 3618
E-mail: ann_levin@abtassoc.com

* Unable to attend

Dr Benjamin Loevinsohn, World Bank, 1818 H. Street N.W., Washington, D.C. 200443, USA
Tel: +1 202 473 7948; Fax: +1 202 522 2955
E-mail: bloevinsohn@worldbank.org

Dr Catherine MacAulay, Senior Quality Assurance Advisor, The Quality Assurance Project (QAP), University Research Corporation, 7200 Wisconsin Avenue, Suite 600, Bethesda, MD 20814, USA
Tel: +1 301 941 8414; Fax: +1 301 941 8427
E-mail: cmacaulay@urc-chs.com

Dr Sigrun Mogedal, Chief Technical Adviser for Social Sector Development, Norwegian Agency for Development Cooperation (NORAD), P.O. Box 8034 Dep. N-0032 Oslo, Norway
Tel: +47 22 240202; Fax: +47 22 242031
E-mail: sigrun.mogedal@norad.no

Dr Peter Ndumbe, Centre for the Study and Control of Communicable Diseases, Faculty of Medicine and Biomedical Sciences, B.P. 8445, Yaoundé, Cameroon
Tel: +237 31 51 04; Fax: +237 31 51 78
E-mail: camdiagnostix@camnet.cm

Mr David Newberry, Children's Health Senior Advisor, CARE, 151 Ellis Street NE, Atlanta, GA 30303 2439, USA
Tel: +1 404 681 2552; Fax: +1 404 577 1205
E-mail: newberry@care.org

Ms Ellyn Ogden, Polio Eradication Coordinator, US Agency for International Development (USID), G/PHN/HN/Child Survival, 1300 Pennsylvania Avenue, Room 3-07-070, 3rd Floor, Washington, D.C. 20523-3700, USA
Tel: +1 202 712 5891; Fax: +1 202 216 3702
E-mail: eogden@usaid.gov

*__Mr H. Pigman__, Vice-Chairman, IPPC, Rotary International, 5303 W 850 N, Ambia, Indiana 47917, USA
Tel: +1 765 869 5821; Fax: +1 765 869 4821(home),
Tel: +1 847 864 4527 (Evanston)

Dr Peter Poore, Save the Children Fund, 17 Grove Lane, London SE5 8RD, UK
Tel: +44 171 703 5400; Fax: +44 171 703 2278

Dr P. Procacci, Health Adviser, Eastern and Central Europe, Asia, Directorate for Development Cooperation, Ministry of Foreign Affairs, Unita Tecnica Centrale, Via S. Contarini 26, I-00142, Italy
Tel: +39 06 3691 6266; Fax: +39 06 324 0585
E-mail: procacci@esteri.it

* Unable to attend

*Dr Pia Rockhold, Technical Adviser, Royal Danish Ministry of Foreign Affairs, 2 Asiatisk Plads, DK-1448 Copenhagen K, Denmark
Tel: +45 33 92 02 31; Fax: +45 32 54 05 33
E-mail: piaroc@um.dk

Dr E. M. Saether, Doctoral Student, Ragnar Frisch Centre for Economic Research, Health Economics Research Programme, University of Oslo, Gaustadalleén 21, N-0349 Oslo, Norway
Tel: +47 22 95 88 19; Fax: +47 22 95 88 25
E-mail: e.m.sather@frisch.uio.no

Dr David Salisbury, Principal Medical Officer, Department of Health, 707 Wellington House, 133-155 Waterloo Road, London SE1 8UG, UK
Tel: +44 171 972 4488; Fax: +44 171 972 4468
E-mail dsalisbu@doh.gov.uk

Dr Shreebatsa P. Shrestha, Research Group for Health Economics and Development, Senepa., Lalitpur 2, Nepal
Tel: +977 1 529371, 977 1 524699
E-mail: reghed@htp.com.np

Mr Richard L. Skolnik, The World Bank, 1818 H. Street, N.W., Washington, D.C. 20433, USA
Tel: +1 202 458 0298; Fax: +1 202 477 0397
E-mail: rskolnik@worldbank.org

Mr Robert Steinglass, Immunization Coordinator, BASICS, 1600 Wilson Boulevard, Suite 300, Arlington, VA 22209, USA
Tel: +1 703 312 6800; Fax: +1 703 312 6900
E-mail: rsteingl@basics.org

Mr Bo Stenson, 2182 Route de Pitegny, F-01170 Gex, France
Tel: +33 450 41 69 24; Fax: +33 4 50 28 3249
E-mail: bo.stenson@wanadoo.fr

*Dr Carl Taylor, Johns Hopkins University, Baltimore, MD 21205-2179, USA
E-mail: ctaylor@jhsph.edu

Dr John Tomaro, Director of Health Programmes, Aga Khan Foundation, 13 avenue de la Paix, CH-1202 Geneva, Switzerland
Tel: +41 22 909 7200; Fax: +41 22 909 7291

*Dr Françoise Varet, Chef de division du développement sanitaire et social, Ministère délégué à la coopéeration et à la Francophonie, 20 rue Monsieur, F-75700 Paris 07 SP, France
Tel: +33 1 53 69 31 47; Fax: +33 1 53 69 37 19

* Unable to attend

Ms Linda Vogel, United States Mission to the United Nations Office and other International Organizations, Case postale, 1292 Chambésy, Switzerland
Tel: +41 22 749 4111; Fax: +41 22 749 4880

Mr J. Waslander, Permanent Mission of the Kingdom of the Netherlands to the United Nations Office and International Organizations at Geneva, Chemin des Anémones 11, Case postale 276, 1219 Châtelaine, Switzerland
Tel: +41 22 795 1511; Fax: +41 22 795 1515
E-mail: waslander@gev.minbuza.nl

Dr Jane R. Zucker, Health Adviser, UNICEF, 3 United Nations Plaza, TA-ZYA, New York, NY 10017, USA
Tel: +1 212 824 6312; Fax: +1 212 824 6460
E-mail: jzucker@unicef.org

WHO Secretariat

Regional offices

Dr O. Babaniyi, WHO Regional Office for Africa (AFRO), Parirenyatwa Hospital, P.O. Box 773, Harare, Zimbabwe

Dr M. Landaverde, HPV/HVI, WHO Regional Office of the Americas/Pan American Sanitary Bureau (AMRO/PAHO), 525 23rd Street, N.W., Washington, D.C. 20037-2895, USA

Dr M. H. Wahdan, Assistant Regional Director, WHO Regional Office for the Eastern Mediterranean (EMRO), P.O. Box 1517, Alexandria - 21511, Egypt

Dr G. Oblapenko, Medical Officer, WHO Regional Office for Europe (EURO), 8 Scherfigsvej, DK-2100 Copenhagen Ø, Denmark

WHO headquarters staff

Director-General's Office (DGO)

Dr D. Tarantola, Senior Policy Adviser, DGO

Health Technology and Pharmaceuticals Cluster (HTP)

Dr M. Scholtz, Executive Director, HTP

Department of Vaccines and Biologicals (VAB), Health Technology and Pharmaceuticals Cluster (HTP)

Dr B. Melgaard, Director, VAB/HTP

Dr Maureen Birmingham, Coordinator, Vaccine Assessment and Monitoring (VAM), VAB/HPT

Dr J.-M. Olivé, Acting Coordinator, Expanded Programme on Immunization (EPI), VAB/HTP

Dr B. Aylward, EPI/VAB/HTP

Ms Tracey Goodman, EPI/VAB/HTP

Communicable Diseases Cluster (CDS)

Dr D. Heymann, Executive Director, CDS

Dr N. Zagaria, Strategy Development and Monitoring for Eradication and Elimination (CEE), Department of Communicable Diseases Control, Prevention and Eradication (CPE), CDS

Dr D. Klaucke, Department of Communicable Disease Surveillance and Response (CSR), CDS

Dr Petra Heitkamp, Stop TB, CDS

Department of Organization of Health Services Delivery (OSD), Evidence and Information for Policy Cluster (EIP)

Mr Orvill Adams, Director OSD/EIP

Dr J. Heldrup, OSD/EIP

Ms B. Stilwell, OSD/EIP

Dr Prabhat Jha, Department of Research Policy and Cooperation (RPC), EIP

Annex 3:

Summary table of new studies on PE

Title of study/date	Authors/Institution	Location	Methods	Study Objective
Disease eradication: friend or foe to health system (1999)	S. Mogedal (DiS, Centre for Partnership in Development, Oslo) and B. Stenson (Division of International Health Care Research (IHCAR) Karolinska Institutet, Stockholm)	Lao PDR, Nepal and Tanzania	Systematic country review, interviews, statistical and document review using health systems capacity assessment framework of indicators	Impact of PE on health systems
Pulse Polio Immunization Programme Evaluation 1997-98 and 1998-99	N.K. Arora and M. Lakshman (All India Institute of Medical Research, AIIMS-IndiaCLEN, Delhi)	India	Interviews and focus group discussions with key informants/stakeholders at all levels – e.g. decisions-makers, planners, NGOs community	Impact of PE on health services delivery
The impact of PE Campaign on the Financing of Routine EPI: Findings of Three Case Studies (1999)	A. Levin, and S. Ram (Partnership for Health Reform, University Research Co., Bethesda)	Bangladesh, Morocco, Côte d'Ivoire	Trend analysis of source and use of funds, survey	Immunization financing
Global Polio Laboratory Network: a model for good laboratory practice (1999)	C. MacAulay and M. Verma (Quality Assurance Project, University Research Co., Bethesda)	USA (CDC), South Africa, Uganda, India	Observation of laboratory practices and interviews with laboratory staff	Polio laboratory network
Assessment of the effect of PE and NIDs on routine EPI (1999)	A. Roisin (UNICEF consultant, New York)	Benin, Niger	Consultant field visit, interviews, document and coverage review	Routine immunization services

Annex 4:

Summary of presentations, discussion and comments

1. Targeted programmes and health systems development

Presentation by Mr Orvil Adams, Director ORD/EIP, WHO, Geneva

Introduction

The key elements of WHO's approach to health systems development include:

a) An overall set of goals:

- To improve the health of populations.
- To enhance the responsiveness of the health system to meet the expectations of populations.
- To improve on the non-health dimensions of interaction with the health system.
- To promote fair financing and reduce financial risk.

b) An overall objective to have a positive impact on health systems concerned with services to the poor in such key functional areas as service delivery, human resource development, financing, and stewardship.

c) A monitoring function: to track when and what reforms are introduced in countries; to document changes in performance; and to explain key factors involved in the changes to inform decisions of policy-makers.

d) The design and development of a set of indicators to measure changes in performance and health and build capacity to measure the achievement of the stated goals and objectives. (Note: It is important to remember that EPI has one good indicator – coverage – but other indicators of the immunization system are weak.)

The challenge is to link polio eradication efforts with health system performance and essential health systems functions (outlined in b. above).

Comments/discussion

What is less clear is how far polio eradication activities can go to help meet the aims of this framework and the extent to which polio eradication can influence the broader health systems. Polio eradication cannot rebuild the health system nor is it meant to. In addition, there is no guarantee that a greater emphasis on these issues through PE and/or through EPI will have a major impact on health systems strengthening more broadly. We need to be realistic about what can be done – broader development efforts are necessary.

While eradication programmes, in general, should not be held responsible for curing ills of existing health systems they can help promote the following:

- Consensus and coordination among a broad coalition of partners essential for eradication initiatives.
- Respect for other ongoing public health programmes by managers of eradication initiatives.
- Flexibility of peripheral level decision-makers in reaching centrally established targets.
- Effective management and leadership transferable to other health programmes. Successful eradication programmes are powerful examples of effective management and leadership.
- Adaptation of improved and effective surveillance to meet needs of other public health system programmes after eradication is achieved.
- Programme planning by defining the roles of training, human resource development, community mobilization, health policy, finance and resource mobilization.

The positive impact of eradication programmes can be improved by avoiding the following pitfalls:

- Capacity building without appropriate attention to health information systems and evaluation.
- Building parallel structures where human resources are siphoned away thus jeopardizing existing programmes.
- Concentrating on central level over community levels.
- Missing opportunities to link with other programmes.
- Underestimating the financial and human resources required to complete the job.
- Promoting strategies that may not be the most cost effective.
- Lack of transparency with policy- and decision-makers about all aspects of the programme: technical, financial and political.

2. Disease eradication: friend or foe to the health system?

Presentation by Dr Sigrun Mogedal, Chief Technical Adviser for Social Sector Development, NORAD and Mr Bo Stenson, Consultant, Gex, France

Introduction

This study was commissioned in 1998 by WHO to develop a methodology for assessing the impact of polio eradication on health systems. The methodology was field tested in three countries: Lao PDR, Nepal and Tanzania. A summary synthesis report outlines the methodology, the findings from the country studies, discusses the major issues involved, and provides recommendations for action. Individual reports of the country case studies are also available.

Methods and data collection

The first part of the methodology development involved establishing a framework of indicators for describing the structure and capacity of key health systems functions: policy context, national capacity, service delivery, training and supervision and social mobilization. In addition, the main immunization systems areas of infrastructure, financial and human resource inputs were explored. A summary table of generally perceived PE potential for both positive and negative effects was compiled.

This framework and indictors were applied and pursued through reviews of documents, statistics and interviews with concerned individuals at the central (national) as well as the provincial and district levels in one or a few selected districts of each country studied. The findings in relation to this set of indicators were finally assessed in relation to health system context and functions, to identify vulnerable and strong system elements and discuss the conditions for positive and negative PE impact. A summary of the indicator framework and overview of the findings (including missed opportunities or potential positive impact that was not realized or could not be traced) is provided in Annex 4 of the study's final report.

Despite efforts to use a common framework for describing health system capacity and assessing impact, comparing countries has obvious methodological limitations. Tanzania is a country with a comparative wealth of data in relevant areas. This was especially so in the province/district chosen for the peripheral study, Morogoro. Lao PDR is characterized by a paucity of data especially with regards to health financing. In Nepal the availability of data at the central level was similar to Tanzania, while the data availability at the district level was not so complete.

Summary and conclusions

In the area of policy context mainly positive impacts were registered. Organizational capacity findings pointed in both directions, mostly positive in Laos PDR and Nepal with negative examples from Tanzania. Service delivery showed no major impact in either direction. In training and supervision, delays and disruptions were registered as well as increased capacity.

Improvements of the cold chain through polio eradication were especially important for the whole EPI programme in Lao PDR. Surveillance was found to be weak in Nepal and Tanzania. Linkages and partnerships were forged but generally not exploited for other health purposes. The focus on national immunization days (NIDs) was found to be stronger than on strengthening routine immunization.

The external inputs were generally found to be additional and new donors had been mobilized. No diversion of national funds was registered. The national contribution to polio eradication was mainly in the form of substantial human resources, especially at the lower levels.

The positive impacts stand out in Lao PDR where polio eradication has established a basis for services that did not exist before. In Nepal and Tanzania there were striking examples of missed opportunities and some negative impacts.

Contextual factors, especially the capacity of the health system, are essential in mediating the effects of polio eradication. Health reforms may overshadow the impact of polio eradication.

A potential for synergies at several levels was found, requiring coordinated planning. Thus leadership at the central and operational levels with responsibilities beyond the specific intervention becomes crucial.

The main operational conclusions are that:

- Most negative impacts of PE can be averted through better planning.
- Positive impacts can only be achieved by having clear objectives and instituting effective planning procedures to reach these objectives.

Recommendations for medium-term action:

Eradication partners

- To give due attention to how planning and implementation of eradication can give benefits to health systems.

WHO

- To develop guidelines for the strengthening of health systems and support countries in their implementation.
- To establish a monitoring system that makes it possible for the global community to benefit from country experiences with eradication programmes.

Countries

- To take specific action to create better synergies through a renewed emphasis on routine immunization and identification of opportunities provided by health reforms.
- To make the scheduling of the final phase of PE predictable and coordinate it with other training, supervision and service activities.
- To integrate surveillance of other diseases with acute flaccid paralysis (AFP) surveillance.
- To set objectives and establish long-term monitoring systems (including specific indicators of PE impact) to be followed and acted upon as appropriate.

Recommendations for immediate action for:

All involved

- To renew emphasis on routine immunization.
- To integrate other diseases surveillance into AFP.
- To plan training and supervision in order that it can be strengthened rather than disrupted by PE.
- To exploit PE partnerships for other health purposes.
- To collect data and report on routine immunization as part of PE programme.

Comments/discussion

Meeting participants felt that this study provided good information and would help to depolarize the intensity of the debate of the past years. There was general agreement that within the context of each country studied, it was possible to find positive and negative impacts, meaning both are possible.

Participants were in further agreement that more needs to be done to promote the positive impacts of eradication and minimize the negative consequences. The polio eradication effort cannot afford to waste opportunities/resources or cause indirect harm through benign neglect.

Some participants felt that the findings are very useful for looking at individual countries, but they are limited in their usefulness for characterizing the impacts at global level.

Participants agreed that some of the impacts of PE might not be evident for several years. It will be important for WHO to continue to monitor the impact, both on routine immunization and broader health systems. It was recommended that WHO monitor this situation closely, take a pro-active approach to intervening should there be a need, and to revisit these findings periodically, by reporting back at regional and global meetings.

Other examples of the impact of polio eradication were noted by meeting participants. These include:

- WHO staff, representing countries in EMRO cited, anecdotally, additional positive impacts of polio eradication including: improved image of health ministries because of polio success stories (Egypt, Sudan, Yemen); social mobilization efforts that have been used for EPI as well as PE; ceasefires extended beyond polio NIDs to deliver other health services; cold chain improvements important for EPI; surveillance systems improved and beginning to be used for other diseases; management systems for NIDs being used for other efforts; and, increased coordination among activities.
- WHO staff, representing countries in EURO cited, anecdotally, additional positive impacts including: improved interregional coordination; improved managerial skills, EPI is now part of national budgets in most countries; strengthened cooperation between health sectors/professionals; increased social mobilization; greater access to previously unreached sub-populations; improved morale of health professionals; strengthened diphtheria control efforts; an increase in DTP3 coverage for at least three countries.

Summary and conclusions

1) Intersectoral coordination was recognized as a compelling factor for successful implementation at the district level and lower. NGOs were not very active in the tribal and hilly areas.

2) Logistics issues, particularly transportation, drew the attention of over half of the district and block officers. In rural and urban areas, NGOs often provided a significant proportion of vehicles. This problem was magnified in the absence of NGOs. Enumeration of children in remote areas was also a difficulty.

3) Simplicity of the programme was mentioned as an important reason for success. The service utilizers notably appreciated that the immunization posts were near their homes and the programme was conducted on holidays – further reiterating the need for services that are easily available, accessible, affordable and acceptable.

4) Cooperation and participation by the community, especially by the local leaders and influential person was important.

5) There was a uniform opinion among the providers that the image and credibility of health systems had been enhanced since the onset of PPI. People were now more familiar with the activities of the health department. Relationships between the health workers and community had improved due to increased frequency of their interaction. A majority of community stakeholders confirmed these perceptions.

6) Existing health services, as measured by indicators for immunization coverage, maternal and child health activities, and antenatal care services were either not influenced or had shown some improvement.

7) There was a temporary relocation of resources (personnel and materials) from all participating departments for carrying out PPI activities. Vehicles were requisitioned from a large number of departments and private sources for up to four weeks in connection with the last two PPIs.

8) Most of the health workers said that their routine and specific activities were adversely affected due to their participation in the PPI programme but the magnitude of this impact was not defined.

9) There has been a 10% decline in routine immunization coverage since 1994, more in some states. It is difficult to ascribe this deterioration in programme performance to any particular factor. While there appears to be some dislocation of services with PPI for 4-6 weeks around the NIDs, the coverage rates reflect achievements for the whole year. All categories of stakeholders including utilizers, did not perceive any adverse effect of PPI on routine services. Nevertheless, it is noteworthy that almost half of the mothers and pregnant women were not aware of the services provided by the health department and appeared dissatisfied with their overall performance.

Using eight indicators to assess the impact of PPI programme on the health system, the main conclusions of the evaluation were as follows:

- Relationships between health workers and community improved across country.
- Image of and confidence in health institutions improved.
- Morale of health workers improved.
- Mixed view of effect on other health programmes although mostly positive.
- Availability of drugs and other services increased.
- Overall there is benefit with better behaviour of health workers cited.
- Awareness of other health programmes increased and demand for services increased.
- Some social barriers were broken down.
- EPI rates declining before PPI cycles started; some service disruption but unclear cause.

Recommendations

1) Allocation of resources (both material and manpower) for the PPIs should be built into the yearly calendar of activities of all participating departments to minimize the negative impact.

2) Although most of the health functionaries maintained that there was either no adverse impact or there was some beneficial effect of PPI on the delivery of other ongoing health programmes, one-half of the utilizers were unaware of the existing health programme and hence would not have been using those services.

3) There was unanimity among stakeholders that the relationship between health workers and the community had improved with the onset of PPI and this in turn also improved the image and credibility of the health department. There is now a need for an awareness campaign about the other ongoing programmes and services to improve service utilization. Apparently, expectations of the health department could also be heightened. If the health system does not respond to the community expectations, health programmes including PPI can face adverse effects in subsequent cycles.

Comments/discussion

Meeting participants commended AIIMS-IndiaCLEN for the thorough and detailed attention to rigorous qualitative research methods. The amount of data and the programmatic implications were very impressive. The government was pleased with the study and has asked AIIMS-IndiaCLEN to conduct a similar study for their HIV/AIDS programme. This was noted as a good spill-over effect from polio, both for AIIMS-IndiaCLEN in their ability to apply their methodology to other programmes, and for the Government of India and their desire to monitor the process and progress of another large health programme.

When asked about politicians' views of polio eradication, the researchers responded that interviews with ministers found no conflict with party lines. In fact, they wanted polio eradicated during their tenure to gain prestige from success.

Some meeting participants expressed strong concern about several potential, unintended consequences of polio eradication:

- That house-to-house immunization raises expectations that health services will be brought to their door.
- That polio is having a more significant impact on routine immunization, in India, than is currently documented.

The researchers commented that while some respondents stated that they expected the health system to now deliver NIDs' vaccine to their door, it was not known that these same people expected all immunizations or all health services to now be delivered to their door. Findings from other countries (e.g. Afghanistan) also suggest that people's expectations of house-to-house delivery of immunizations and potentially, other health services, is growing as a result of the NIDs. There is sufficient concern to suggest that AIIMS-IndiaCLEN try and get more information to better determine the real expectations of people. The researchers said they would address these issues in the next evaluation.

A number of participants knowledgeable about the variation in capacity in Indian states, raised questions about generalizing the findings. It was recommended that the researchers disaggregate and compare their data by state, and district if possible. It would be very informative to learn more about how to increase political commitment where capacity is weak; how to build on the management capacity existing at district/local levels to be more successful in strengthening system in future. The researchers assured the group that they will look at the data by state and district more closely.

4. Financing of polio eradication campaigns in Bangladesh, Côte d'Ivoire and Morocco (Partnerships for Health Reform)

Presentation by Dr Ann Levin, University Research Co., Bethesda, Maryland, USA

Introduction

Numerous researchers have found it difficult to obtain substantive data about the impact of the polio eradication campaign on the financing of health systems. The USAID-funded Partnerships for Health Reform (PHR) project, via its immunization financing initiative, is undertaking a study on the financing of the polio eradication (PE) initiative. The purpose of the study is to determine the impact of the eradication campaign on the financing of national immunization programmes and to the extent possible, the health system as a whole.

The study examines whether trade-offs occur when governments, donors and international organizations provide funding for polio eradication (PE). Do they reduce their funding for other activities such as routine immunization programmes in order to shift funding to PE? Or are they able to provide funding for both activities?

Are governments providing funding for PE or do they assume there are sufficient resources and concentrate on providing resources for other activities such as routine EPI? It is also important to ascertain whether the increased knowledge about the benefits of immunizations from the PE is attracting new funding for the national immunization programme and other health sector activities and that their long-term funding prospects may be improving. This study seeks to determine the impact of the polio eradication campaign on the financing of long-term programmes of the health sector such as the routine EPI programme.

WHO estimates that the global campaign towards PE will reach its peak of activity in 1999 to 2001. During this critical period, the biggest challenge will result from the shift in focus from logistical strategies to financial strategies. WHO is estimating that US$ 700 million will be necessary during this time for eradication efforts. Although external support from donors is substantial, additional resources will be required to cover projected shortfalls in funding.

What impact do resource allocation decisions for eradication campaigns have on the provision of routine services? Critics of eradication campaigns have argued that eradication activities divert resources and undermine the efforts to maintain and strengthen routine health services.

Methods and data collection

The effect of the PE on the financing of routine immunization activities and health systems is analysed in terms of two dimensions: 1) short-term effects on funding; and 2) long-term effects on financing of the national immunization programme and health systems.

The short-term effects of PE on financing of routine EPI are examined using trend analysis when this information is available. First, the funding of routine EPI and health sector activities is examined and compared with funding for NIDs to determine whether a decrease or the decline in the rate of increase has occurred for these activities during the time when polio eradication activities were introduced. In addition, the changes over time of funding from specific sources is investigated to determine whether these individual flows have increased or decreased during this time period.

The contributions of the governments (including personnel) in each of these countries for routine immunization programmes and NIDs is examined separately to assess how governments have divided available resources for their national immunization programme among routine EPI and polio eradication activities. It is also important to examine whether governments are making substantial contributions to PE and possible long-term effects on financing for their immunization programme.

Long-term financing possibilities are discussed in terms of findings from information on types of contributors as well as discussions with key informants in the case study countries.

The data collection took place in three countries: Bangladesh, Côte d'Ivoire and Morocco. These countries were chosen because data had already been collected from them for PHR's immunization financing studies. Specifically, they all have a mix of financing strategies, are in different geographical regions, and two out of the three are using a financing mechanism (UNICEF's Vaccine Independence Initiative) to purchase vaccines.

Information has been collected on source and use of funds for routine immunization programmes and polio eradication activities by the governments, donors and other contributors. The funds are disaggregated by type of expenditure such as personnel, supplies, transport, and equipment. The sources of financing include the following: government, donors, international organizations, local (regional) governments, and the private sector.

Expenditure information is divided into recurrent and capital expenses. Recurrent includes any expenditure that last for a time period of less than one year such as personnel salaries and supplies. Capital includes longer-term expenditures that last longer than a year such as equipment and land.

The data on contributions of the central government, donors, and international donors were collected from ministries of health, donor databases (e.g. SIDA), and projects that support NGOs. In addition, separate surveys were initiated when the data on contributions were not available. For example, a survey of municipalities was conducted to obtain data on contributions of local governments towards the national immunization programme in Bangladesh.

The calculation of personnel time was undertaken through multiplying the number of days and percentage of total work time spent on the activity by salary of the type and number of workers. For example, in Bangladesh, health assistants were estimated to spend 40% of their time on routine expanded programme on immunization (EPI) and 8% of their time on national immunization days (22 days for 2 NIDs) and their salaries were multiplied by 0.40 to get the cost of their time spent on this activity.

Interviews were conducted with a large number of key informants to obtain in-depth information on the immunization programmes and long-term prospects for financing.

Summary and conclusions

A summary of some of the main findings from this assessment of financing of polio eradication activities, routine EPI, and health budgets are the following:

- Three of the main funders of the polio eradication campaign in these countries - Rotary International, the Government of Japan, and CDC are focusing most of their resources on this campaign. In only one case was funding also provided for routine EPI - Japan's financing of measles vaccine in Bangladesh.
- Other sources of finance (donors) provide funding only for routine EPI activities, e.g. KFW in Côte d'Ivoire, SIDA in Bangladesh.
- The governments in each of the three countries as well as UNICEF and WHO are funding both activities.

- The ministries of health in each country have taken different approaches to funding of routine EPI and polio eradication activities :
  - in Bangladesh from 1993/4–1997/8, the Ministry of Health has been increasing its contributions to the routine EPI programme, but decreased their funding for polio eradication activities;
  - in Côte d'Ivoire, the contribution of the Ministry of Health has increased gradually both for routine EPI activities and the polio eradication campaign;
  - in Morocco, the Ministry of Health, with assistance from a World Bank loan, has increased its funding for both activities so that it is now financing most of the costs of routine EPI and the polio eradication campaign.

The funding for routine EPI activities has been increasing in each of the three countries. Funding by the governments have been increasing for routine EPI activities during the period since the polio eradication activities were introduced. In Côte d'Ivoire and Morocco, the governments have also been increasing their contributions to the polio eradication campaign. The results suggest that no trade-offs were made in Côte d'Ivoire and Morocco. Instead, the governments have increased their overall financing of routine EPI and polio eradication. In the case of Bangladesh, the Government chose to concentrate its limited resources on routine EPI rather than polio eradication activities. This is an appropriate choice for the Government since the routine coverage appears to be declining.

Most donors[1] (e.g. Rotary International) have concentrated on funding for either routine EPI or polio eradication activities, and did not need to make any trade-offs regarding their funding. Only a few organizations - one donor, USAID, and two international organizations, WHO and UNICEF - are funding both activities. None appear to be reducing their funding for routine EPI activities,[2] with the exception of UNICEF in Bangladesh.

It is likely, however, that there were opportunity costs in choosing to support polio eradication activities in each country rather than making improvements to the routine EPI programme. The funds could have been used to support the introduction of "new" vaccines such as hepatitis B, to provide more social mobilization activities for routine EPI, etc. On the other hand, it is possible that these other activities could not have attracted the additional funding that the high-profile polio eradication campaign did, and they would not have had sufficient financing.

[1] Although the Government of Japan is providing funding for both routine EPI and polio eradication in some countries, it is funding primarily polio eradication activities in the three countries in this study.

[2] It should be noted that informal reports suggest, though, that some reductions in USAID funding for routine EPI activities have occurred in other countries in West Africa as a result of introducing financing for polio eradication activities.

This study has concentrated on funding for routine EPI and cannot draw conclusions regarding the impact of polio eradication on the financing of other health services in these three countries. It should be noted, however, that the funding for national immunization programmes (routine EPI and polio eradication activities) has been increasing at a higher rate than the health budget as a whole. It is possible that some trade-offs in the provision of funding for immunization activities versus other health activities are being made. However, without more information, no conclusions can be drawn.

The long-term financing prospects can be divided into two types: 1) government funding for polio eradication activities, and 2) funding of donors and international organizations. In two of the three countries in the study, Côte d'Ivoire and Morocco, the funding for polio eradication activities has increased during the time period investigated, particularly in the latter case. One possibility is that, after the polio eradication campaign is finished, the additional funding can be kept for the national immunization programme and be used to strengthen it.

Since much of the additional funding for polio eradication activities is from donors that provide financing for this activity and not routine EPI, the long-term prospects of obtaining funding from them is not clear. For example, the Government of Japan may choose to shift its funding from polio eradication to routine EPI (since it is funding the latter in some countries), however, it is not clear that they will do so. It is also possible, however, that, funders such as Rotary International and international organizations will shift their funding to another disease eradication campaign such as measles.

In addition, it should be noted that some of the funding for the polio eradication campaign has been for the capital costs of financing equipment and vehicles, they have provided additional resources that can be used by the routine EPI programme that will last for several years.

In summary, the study found that:

a) Most donors concentrate on funding either EPI or polio eradication.

b) The governments, UN programmes, USAID fund both.

c) The role of a government as a funding source is different in each country.

d) Funding for EPI increased.

e) Government funding for polio eradication activities increased in two countries so may be reprogrammed.

f) Funding of capital goods by donors has long term use for other programmes.

g) The need for a long-term plan of how to shift from polio activities to new activity is recommended.

h) There is a role for donors and international organizations to assist countries to plan for improvements to national immunization programmes.

Comments/discussion

Participants noted the important gap that this study addresses, that of the financial impact of polio on country programmes. While good data was presented on country-level budgets, when asked about trends in donor funding, PHR showed a graph of USAID's funding trends for polio and routine immunization. As polio funding increased, resources for routine immunization decreased. USAID representatives at the meeting stated that the two were indeed interrelated and a result of the earmarks required by Congress (USA) for polio eradication (the earmark was not additional funds, but had to be taken from within the existing programme.). Trends for other donors were not available, however, WHO presented supplementary information on funding sources for PE in 1999. That data demonstrated that of the estimated US$ 319 million in external donor funding for PE in 1999, over 80% was funding that was not previously targeted for developing country immunization services. As much as 50% of the external PE financing was from funding sources such as Rotary International that have not previously contributed to official development assistance for health.

Temporally, the decline in routine immunization in many countries in the early 1990s coincided with a contraction in donor funding for immunization. Many participants identified this as one of several contributing factors that influenced the decline in routine immunization during this time. Others pointed out that the WHO country case studies indicated that decentralization might have played an even greater role in reducing coverage. PHR could not generalize whether country budgets had compensated for the reductions in donor funding, thus making government support for immunization more sustainable.

The participants recommended that WHO undertake further analysis of trends in donor funding for polio and routine immunization.

5. Lessons learned in the development of the Global Polio Laboratory Network (quality assurance project)

Presentation by Catherine MacAulay, University Research Co., Bethesda, Maryland, USA

Introduction

This study, funded by USAID, was conducted by the Quality Assurance Project (QAP) to determine if the Global Polio Laboratory Network (LABNET) can be cited as a "best practice model" given that many other public health programmes rely on laboratory results to guide programme decisions (e.g. malaria, TB, or HIV/AIDS). With increased attention on integrated surveillance and the use of data to drive decision-making for public health, USAID and other donors are interested in cost-effective strategies for collecting relevant disease information. A key purpose was to identify the quality principles subscribed to by the LABNET that have contributed to its success and to determine whether these principles can be applied to other health programmes and or health systems to improve their outcomes.

QAP cast its analysis of LABNET's success in providing laboratory support to the Global Polio Eradication Initiative in terms of quality management (QM) quality assurance (QA) techniques that the network uses to ensure high quality performance in detecting and tracking the wild poliovirus. Quality assurance is a systematic process for closing the gap between actual performance and the desired outcome. Accurate and timely detection, identification and reporting of the virus' geographic origin are crucial to the polio eradication effort.

Offering QAP's view of the LABNET in QM and QA terms will provide other laboratories and health programmes with an analytical framework that may serve as a benchmark for assessing their own program's performance.

LABNET consists of 150 laboratories, distributed throughout the world, at the international, regional and national levels. These laboratories conduct scientific testing to isolate and identify the wild poliovirus in stool specimens collected from patients with acute flaccid paralysis (AFP). This scientific testing is critical to the eradication strategy. The deployment of a sophisticated science to track the virus' geographical origins provides the catalyst, i.e. scientific confirmation of a polio case, to trigger the appropriate mop-up vaccination operations that concentrate on the populations at risk for viral contamination.

The design and implementation of strategies for the network were modelled after the Pan American Health Organization's (PAHO) Latin America Polio Network. PAHO/WHO decided to be highly selective in incorporating laboratories into the network and deliberately restricted the number of laboratories to optimize proficiency, logistics and communication. This also allowed for better oversight and support (mentoring and coaching) by PAHO/WHO for the laboratories in the network. Laboratories were selected based on their level of overall high performance (reputation), and strategic location, ensuring that health care facilities had reasonable access and timely response from a functioning polio laboratory. From the outset criteria were established for laboratory performance. It has been a conscious decision to keep the network small and focus on quality, defined as accurate and timely reporting.

Accreditation is conducted annually. The accreditation process is an on-site visit designed to assess an individual lab's compliance with WHO's standards for proficiency, management, and reporting.

By incorporating strict performance standards and quality control elements into the accreditation process the laboratory network can consistently produce reliable results regardless of whether the specimen was analysed in Atlanta or Lucknow. The successful development of the laboratory network and the experience to date of using performance-based standards is a noteworthy contribution of the Polio Eradication Initiative.

Methods and data collection

The evaluation took place over a period of several months in the summer of 1999. It was conducted by researchers with experience in QA and Good Laboratory Practice. Five laboratories in Africa (2), India (2) and the USA (1) were visited and the researchers attended laboratory network directors' meetings. QAP observed first hand the laboratories functions and practices and reviewed the Global Polio Laboratory Network on the merits of their quality management principles that have contributed to the global network becoming a best practice model for good laboratory practice. The researchers observed the laboratory practices and interactions with staff including laboratory directors, laboratory managers, laboratory supervisors, virologists, laboratory technicians, and data managers.

The establishment and maintenance of QM/QA activities is clearly a management responsibility and unless management is committed to QA it will not happen. The laboratories conduct many QM/QA activities on a regular basis through supervision visits, data tracking and accreditation processes.

Summary and conclusions

The study found that LABNET's structure and operational approaches do implement key QM/QA principles and practices, providing a model that can be applied to other health programmes. LABNET effectively uses QA activities in the clinical laboratory setting to achieve, according to internationally recognized scientific, standards, the stature of good laboratory practices (GLP). In addition, QA activities are used to monitor compliance with GLP in a clinical lab.

The laboratories visited displayed a sincere commitment and sense of pride at being involved within the network. As one laboratory worker said in India; "The community respects us more knowing we are accredited and I go home at night knowing that my work might save (prevent) one family the pain of a paralysed child."

The findings reveal that the network demonstrates six quality principles that have helped achieve their high quality of success and which are factors that contribute to the network's success in supporting the PEI efforts. These six quality principles exemplify QM/QA in practice throughout the network:

1) Leadership (strong management and global accreditation process).
2) Quality assurance activities become institutionalized (standards developed, quality monitoring and improvement, teamwork).
3) Accrediation (recognition of compliance).
4) Capacity building (education, data management training, feedback).
5) Communications (professional, between laboratories, with programme implementers/EPI managers regular and frequent e-mails).
6) Documentation (network-wide, information used for improvement of programme management).

Management science supports that an organization's leaders set the tone. "In a learning organization leaders are designers, stewards, and teachers. They are responsible for building organizations where people continually expand their capabilities to understand complexity, clarify visions, and improve shared mental models – that is they are responsible for learning." (*The Fifth Discipline*, P. Senge, 1990).

In this regard the study concluded that WHO leadership has been exemplary and is replicated in style and substance at every level within the network. WHO has created a vision for the laboratory network and has effectively communicated this to all participants. Management is professional, approachable, collaborative, anti-bureaucratic and friendly. This approach keeps everyone in LABNET motivated, on-track and dedicated. Communication is vertical and horizontal. Training and education are targeted and tailored to individual settings and aimed at improving shortcomings highlighted during the annual accreditation review. Seen more as peer review, accreditation visits serve as problem-solving opportunities involving all laboratory staff, and thus becomes an interactive learning experience for all participants. Data management is given as much attention as specimen analysis. While the study was not able to collect information on the costs of operating the laboratory network, donors provide resources, time and expertise. LABNET is not fully funded and efforts are under way to secure additional resources. QAP did not investigate the reasons why some laboratories left the network prior to this study; this remains an area to be explored.

Comments/discussion

Most participants agreed that the development of the laboratory network is a remarkable achievement. Several people noted that the study could be strengthened further by providing more details on the status of the laboratory's performance prior to inclusion in the network. It is important to answer the questions: How did polio eradication activities bring added value to the laboratories? What changes resulted? What proportion of the polio eradication resources go to support the laboratory network? Is it possible to estimate how much staff time was invested in developing the laboratory from its baseline to its current level of functioning? How will these laboratories be sustained after polio is eradicated? There was also agreement that the reasons why a few laboratories left the network should be explored. This information could provide important guidance for the development of other laboratory networks.

6. UNICEF experience in West Africa – Benin, Niger

Presentation by Dr Jane Zucker, Health Adviser, UNICEF, New York

Introduction

In 1999 UNICEF carried out a rapid assessment of the impact of PE on routine EPI and other health activities in two countries: Benin and Niger.

Methods and data collection

The countries were selected based on their performance (Niger as a low performer, Benin as a high performer). The assessment process included a qualitative review of available documentation, interviews with key actors, and field visits to two districts. The main issues considered were EPI coverage, time/workloads, social mobilization/ IEC, cold chain, integration of other health interventions, reaching the unreached, budget allocations, and surveillance.

Summary and conclusions

Like the WHO study, the UNICEF assessment also concluded that there was little evidence of either a positive or negative impact of PE on routine immunization and other aspects of primary health care.

Key obstacles to better interaction between EPI and PE were identified:

- Late start of NIDs planning process due to factors beyond national control.
- Lack of consolidated and integrated social mobilization/IEC strategies.
- Generally poor distribution of operational resources and budgets for routine EPI and other health activities at the district level (this was less of an obstacle in Benin where the Bamako Initiative makes funds available).

The integration of vitamin A with NIDs was noted as a positive impact but there were missed opportunities to develop more systematic inventory monitoring for the cold chain, and to integrate AFP surveillance with other disease surveillance efforts (it was noted the relative importance of this would increase as the countries began to embark on more human resource intensive active AFP surveillance).

Comments/discussion

Participants noted that there were other factors in Niger, such as the coup, that may have contributed to the decline in EPI and for the diversion of funds. Participants urged UNICEF to quickly finalize and disseminate the report of the assessment (no document was available at the meeting), so that the findings could be available to all for review.

Annex 5:

Using polio eradication (PE) activities to strengthen routine immunization: the 10-step programme

Draft Checklist

PE activity	Actions to strengthen routine immunization	Are you doing this (yes/no)? How to improve?
1. **ADVOCACY:** To achieve PE, sustained political and financial commitment is necessary at all levels.	***Combine efforts:*** explain to decision-makers that PE depends on strong routine immunization services; state the importance and needs of routine immunization in all PE advocacy opportunities. ***Highlight the context:*** when reporting NIDs coverage compare with routine coverage for DPT3 and measles (e.g. publish tables comparing district coverage) ***Troubleshoot:*** use high-visibility of NIDs to solve administrative and technical bottlenecks that affect routine immunization and impede PE (i.e. slow release of funds, staffing).	
2. **PARTNER COORDINATION:** PE relies on coordinated partners to ensure that all resource requirements are addressed.	***Think bigger:*** ensure that Interagency Coordinating Committee (ICC) meets throughout the year; expand mandate of ICC to include routine immunization.	
3. **INFORMATION, EDUCATION, COMMUNICATION (IEC):** Nationwide multisectoral awareness is critical for PE.	***Generate demand:*** include messages in NIDs training, materials, or media events about other EPI vaccines and the need for children to be fully immunized (e.g. where and when to receive other immunizations).	
4. **SOCIAL MOBILIZATION:** Active participation of community leaders, volunteers, parents, and private sector is needed to achieve PE.	***Maintain involvement:*** use the organizations, media and people mobilized for PE to support the delivery of routine immunization services in all areas (e.g. develop social mobilization plan for routine immunization).	

PE activity	Actions to strengthen routine immunization	Are you doing this (yes/no)? How to improve?
5. PLANNING: Comprehensive strategic and annual micro-planning is necessary for PE to reach every child with oral polio vaccine (OPV).	***Share plans early:*** to avoid disruptions to other health services, share planned NIDs dates widely with all health programmes. ***Double up:*** use PE micro-planning and training opportunities to improve planning of routine immunization services (e.g. frequency, sites, etc). ***Use data:*** encourage use of NIDs target population data for routine immunization, if these are more accurate than official data.	
6. COLD CHAIN/LOGISTICS: PE requires effective logistics and cold chain to ensure safe and potent administration of OPV with minimum wastage.	***Protect the investment:*** ask NIDs partners to invest in cold chain that meets EPI standards, and to support the preventive maintenance, spare parts and training to keep it functioning for routine immunization. ***Waste not, want not:*** use good vaccine management practice in NIDs to reinforce/ teach stock management for routine vaccines (e.g. to adjust OPV requirements and redistribute stock after NIDs). ***Exploit technology:*** provide training on the use of vaccine vials monitors (VVMs) as a management tool for routine immunization services.	
7. SERVICE DELIVERY & SUPERVISION: PE needs to provide high quality services (OPV) at point of delivery in NIDs and routine immunization.	***Build capacity:*** use PE training opportunities to refresh routine immunization skills and knowledge. ***Work together:*** combine surveillance and routine supervisory visits; ask PE surveillance officers to check fridge temperatures, stock levels, knowledge of VVMs, etc.	

PE activity	Actions to strengthen routine immunization	Are you doing this (yes/no)? How to improve?
8. SURVEILLANCE: High-performing, timely AFP surveillance system is essential to achieve PE.	***Get integrated:*** gradually include other priority diseases with AFP surveillance and reporting. Train AFP surveillance officers; develop/ adapt case investigation and reporting forms.	
9. INJECTION SAFETY: PE offers opportunities to promote safe injection practices.	***Play it safe:*** ensure that any NIDs activity that includes injectable vaccines has a detailed plan of action to ensure safe injection and waste disposal at all levels. Establish safe practices/ systems for routine immunization.	
10. MONITORING: Achievement of the PE goal requires careful monitoring.	***Track impact on system:*** make a commitment to "achieve PE in ways that strengthen routine immunization systems". Use nine key indicators to monitor and document the impact of PE on strengthening routine immunization (see attached List of Impact Indicators). Analyse and use collected information to take corrective action, and report progress periodically.	

Nine key indicators (draft)

Monitoring the impact of polio eradication (PE) on routine immunization programmes

1) Trends in routine immunization coverage:

- Monitor and analyse annual DTP3 and measles coverage by district over time.

2) Trends in financial resources:

- Trend analysis of annual financing (external and national) of PE compared to financing (external and national) of routine immunization services (if possible also compare to overall health sector budget/expenditures).

3) **Surveillance:**

- Number of other diseases integrated with "active" AFP surveillance activities.

4) **Cold chain improvement:**

- Percentage of district cold stores with full complement of functioning equipment and system for maintenance.

5) **Integration of other services:**

- In countries with vitamin A deficiency problems, delivery of vitamin A is integrated with routine immunization services.

6) **Information, education, and communication:**

- Existence of PE communication and social mobilization plan that includes routine immunization (and if appropriate, surveillance).

7) **Vaccine logistics:**

- Inclusion of vaccine vial monitor (VVM) training for PE campaign activities.

8) **Partner coordination:**

- Interagency Coordinating Committee (ICC) is used for broader health sector coordination (mandate and membership are not PE-specific).

9) **Human resource development:**

- Systematic use of PE micro-planning to improve the delivery of routine health services.

WHO/V&B/02.12
ORIGINAL: ENGLISH

Vaccines and Biologicals

Report of the seventh meeting of the Technical Consultative Group (TCG) on the Global Eradication of Poliomyelitis

Geneva, 9–11 April 2002

World Health Organization

WHO/V&B/02.12
ORIGINAL: ENGLISH

Vaccines and Biologicals

Report of the seventh meeting of the Technical Consultative Group (TCG) on the Global Eradication of Poliomyelitis

Geneva, 9–11 April 2002

World Health Organization

The Department of Vaccines and Biologicals thanks the donors whose unspecified financial support has made the production of this document possible.

This document was produced by the
Expanded Programme on Immunization
of the Department of Vaccines and Biologicals

Ordering code: WHO/V&B/02.12
Printed: October 2002

This document is available on the Internet at:
www.who.int/vaccines-documents/

Copies may be requested from:
World Health Organization
Department of Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• *Fax:* + 41 22 791 4227 • *Email:* vaccines@who.int •

Contents

Abbreviations

AFP	acute flaccid paralysis
AFR	African Region
AMR	Region of the Americas
cVDPV	circulating vaccine-derived poliovirus
DR Congo	Democratic Republic of the Congo
EAG	expert advisory group
EMR	Eastern Mediterranean Region
EPI	Expanded Programme on Immunization
EUR	European Region
GAVI	Global Alliance for Vaccines and Immunization
ICC	Interagency Coordinating Committee
IPV	inactivated polio vaccine
NID	national immunization day
OPV	oral polio vaccine
SAGE	Scientific Advisory Group of Experts
SEAR	South-East Asia Region
SIA	supplementary immunization activity
SNID	subnational immunization day
TAG	Technical Advisory Group
TCG	Technical Consultative Group
TFI	Task Force for Immunization
VDPV	vaccine-derived poliovirus
WPR	Western Pacific Region

Executive summary

The seventh meeting of the Global Technical Consultative Group for Poliomyelitis Eradication (TCG) in April 2002 noted that progress towards the eradication goal has been considerable. All of the major 2001 programme milestones had been achieved either in full or in part (see table 3). Most importantly, reported polio cases had fallen from 2971 to 480 between 2000 and 2001, with only 10 countries remaining polio-endemic at the start of 2002 (figure 1).

The TCG recognized, however, that substantial risks to achieving the eradication target remain. Of these, the funding gap of US$ 275 million constitutes the greatest threat (figure 2), especially as it could increase by US$ 150 million, should polio transmission continue into 2003. Closing the funding gap should be the highest priority of the partnership.

Among the 10 endemic countries that now constitute three "high transmission" zones (north India, Pakistan/Afghanistan, Nigeria/Niger) and three "low transmission" zones (Horn of Africa, Angola, Egypt (figure 3)) the TCG was particularly concerned with India, which reported 56% of global cases in 2001, and Egypt, where the extent of transmission has been severely underestimated. The TCG was also alarmed that an inappropriate response to wild poliovirus, such as happened in Mauritania in 2001, could still occur at this late stage. Priorities were defined for each endemic country, with the establishment of a national technical oversight body (Technical Advisory Group – TAG) recommended for each.

In reviewing the priorities for non-endemic countries, the TCG questioned the adequacy of acute flaccid paralysis (AFP) surveillance in some areas due to weak AFP quality indicators and/or the high number of polio-compatible cases, especially in Africa (table 1). Southern Africa, the Horn of Africa and Indonesia were identified as priorities for improving surveillance. Although impressed with the progress in containing wild poliovirus laboratory stocks (table 2), the TCG emphasized the need for national coordinators and action plans in all polio-free countries by end-2002. Based on an analysis of population immunity in polio-free areas (figure 7), the TCG decided that all polio-free countries bordering a polio-endemic area should conduct national immunization days (NIDs) or subnational immunization days (SNIDs) annually; all other countries which lack 90% routine infant immunization should continue NIDs at least every three years.

The TCG evaluated the work on development of post-certification immunization policy, and identified key data gaps in several areas: the transmissibility of vaccine-derived polioviruses (VDPVs), prevalence of long-term excretors (i.e. in middle-income countries), quality of laboratory containment, vaccine

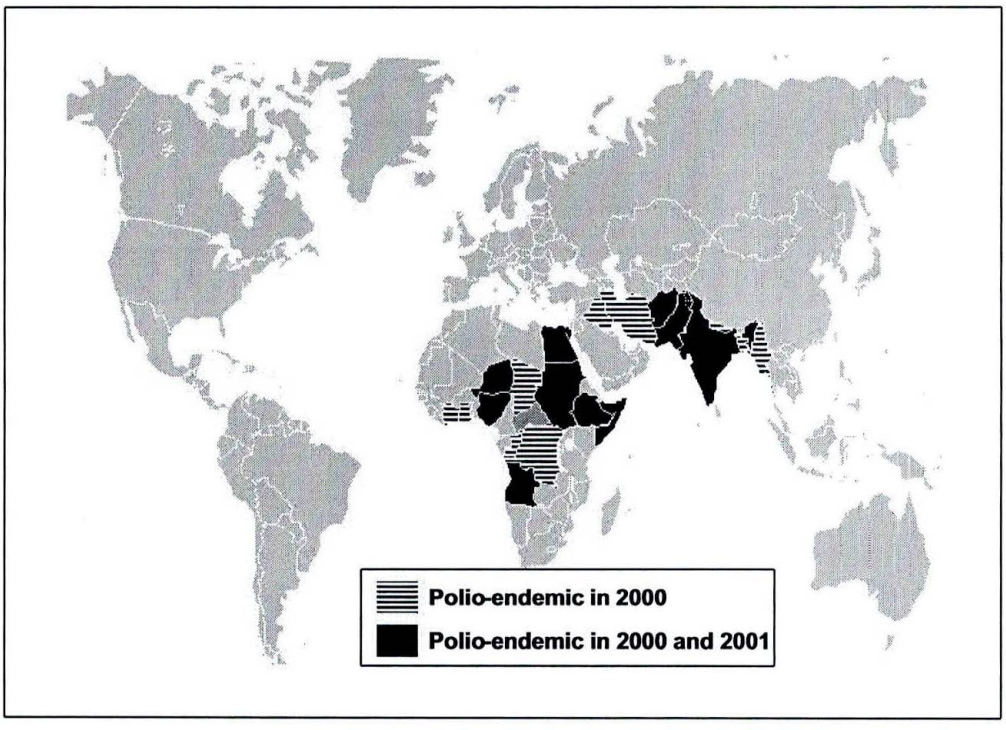
stockpiles, inactivated polio vaccine (IPV) efficacy in developing countries and oral polio vaccine (OPV) production in the post-immunization era. Policy decision models, reflecting how the range of possible research outcomes could affect post-certification policy, would also need to be developed and tested through 2003.

Having deliberated on all of the major polio eradication issues, the TCG reviewed and updated the 2002-2003 milestones for each of the objectives detailed in the Global Polio Eradication Strategic Plan 2001-2005 (table 3).

1. Summary of conclusions and recommendations

Rapid progress continues towards the global interruption of wild poliovirus transmission. Between 2000 and 2001 the number of countries considered endemic for polio has decreased from 20 to 10 (figure 1). High-quality surveillance data is increasingly guiding the implementation of national programmes. The number of reported polio cases has declined from 2971 in 2000 to 480 in 2001 (as of April 2002, figure 3). Within the remaining endemic zones, progress is indicated by decreasing geographic extent of virus transmission and a reduced number of circulating virus lineages. Wild poliovirus type 2 has not been isolated since October 1999.

Figure 1: Polio-endemic countries, 2000–2001



The considerable progress towards global polio eradication was only possible through intense efforts in endemic countries and because of continued generous support from the international polio eradication partnership. During the past year, an additional US$ 425 million was raised to cover polio eradication activities through 2005. Nevertheless, a funding gap of US$ 275 million remains (figure 2), which must be urgently closed.

Global polio eradication efforts have brought considerable benefits. Since 1988, polio eradication has prevented an estimated four million children from being crippled for life, and averted at least one million childhood deaths, both through polio vaccination and the provision of vitamin A during NIDs. Further improvements in targeted social mobilization and information efforts have been an important element of success. Countries increasingly utilize polio eradication activities to further improve routine immunization services and disease surveillance.

However, the TCG is very concerned that only eight months remain to reach the goal of interrupting virus transmission globally by end-2002. Intense, greatly accelerated efforts during the remainder of 2002 and continued strong political support will be needed both to improve surveillance everywhere to reliably find and characterize all remaining foci of transmission, and to intensify supplementary immunization activities (SIAs), especially in high-risk areas, to reach all remaining unimmunized children.

Despite the considerable progress made, the TCG considers that the three zones of high-intensity transmission represent the major risks to the global eradication goal: northern India, Pakistan/Afghanistan and Nigeria/Niger (figure 3). Of particular concern is northern India, which accounted for approximately half of all virus-confirmed polio cases reported globally in 2001, and from where wild virus was imported into polio-free areas elsewhere in India and into other countries (Bulgaria and Georgia). In addition to these high transmission areas, low intensity transmission continues in the Horn of Africa (Ethiopia, Somalia, Sudan), Angola and Egypt. The TCG is concerned that the extent of virus transmission in Egypt had been severely underestimated until recently (figure 4), requiring urgent improvements in the quality of surveillance and supplementary immunization.

The recent isolation of wild poliovirus in West Africa, genetically related to a virus found in Mauritania in 2001, probably indicates a continuing focus of transmission in West Africa that had not been previously detected due to suboptimal surveillance. Response activities targeted at this focus to date have not been adequate.

Continuing transmission of wild poliovirus is the result of suboptimal implementation of polio eradication strategies in the remaining endemic countries. High-quality AFP surveillance is essential to identify problems and high-risk areas, and to guide supplementary immunization efforts (figures 5 and 6). The TCG is impressed with the overall improvements in surveillance, especially in Africa. However, serious technical and programmatic concerns about surveillance quality remain. Failure to collect sufficient clinical information and adequate stool specimens, lack of 60-day follow-up examination, and absence of expert review has resulted in the classification of large numbers of AFP cases as polio-compatible (table 1), particularly in African countries. This raises the possibility of missing ongoing virus transmission. The infrastructure of surveillance systems in many African countries remains fragile, requiring considerable continuing technical and administrative support and timely provision of adequate resources.

The TCG notes that, in addition to the rapid progress made toward stopping wild poliovirus transmission, there has also been considerable progress in the programme of work on the post-certification phase of polio eradication. The objectives of this programme of work are to address (1) the risks of re-introduction of virus into the population from laboratory stocks or long-term carriers, (2) the risks of emergence of VDPVs, and (3) the management of response activities, should these be needed in the post-eradication era. Considerable work remains to be done, particularly in establishing consensus on post-certification immunization policy.

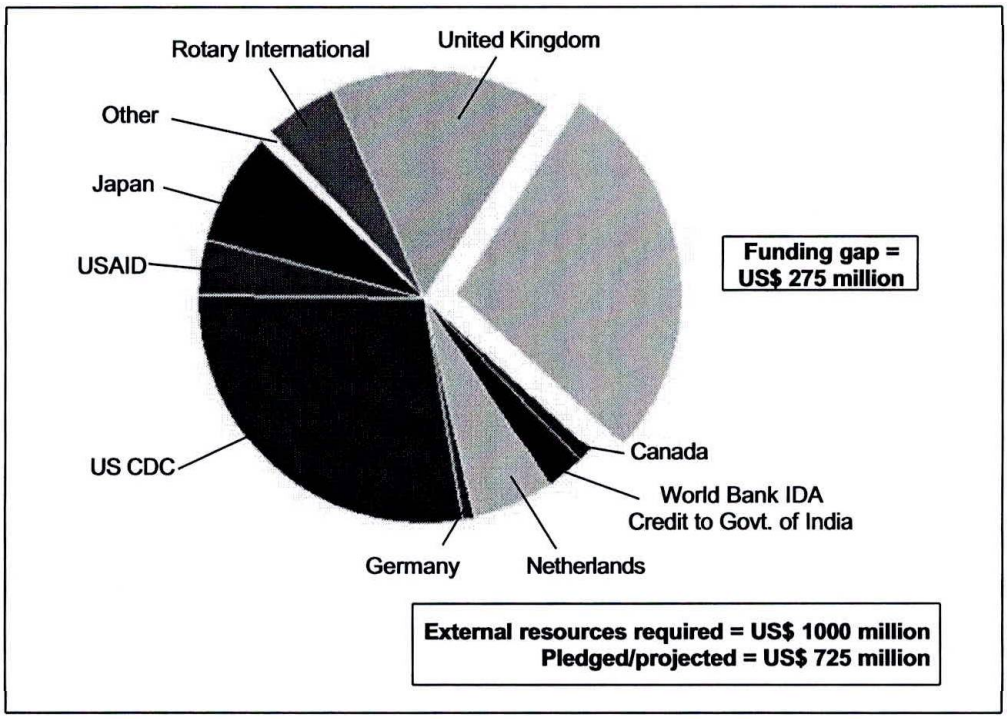
The TCG had noted during its sixth meeting (May 2001) that substantial efforts and resources will be required through 2010 and beyond, to sustain high-quality AFP surveillance, to maintain high population immunity until consensus on post-certification immunization policy is reached, and to manage the risks of re-introduction of poliovirus post-certification. The programme has begun to prepare estimates of resource requirements for the post-certification era; however, further work will be needed in this area.

2. Stopping wild poliovirus transmission

2.1 Resource requirements and resource mobilization

At its 2001 meeting, the TCG regarded the funding gap as the major risk to the initiative. While substantial progress has been made, there remains a serious gap of US$ 275 million for the period 2002-2005 (figure 2, the gap for 2002 is $80m). If virus transmission is not interrupted globally by end-2002, the funding gap will be even larger, over US$ 150 million above current projections for 2003-2005 in a worst-case scenario (i.e. if all endemic areas were to fail to stop poliovirus transmission in 2002).

Figure 2. Required and pledged/projected financial resources as well as funding gap for polio eradication, 2002–2005



Conclusion

The availability of sufficient financial resources remains critical to the success of the global polio eradication initiative. The TCG urged all partners to maintain the highest possible levels of support through certification.

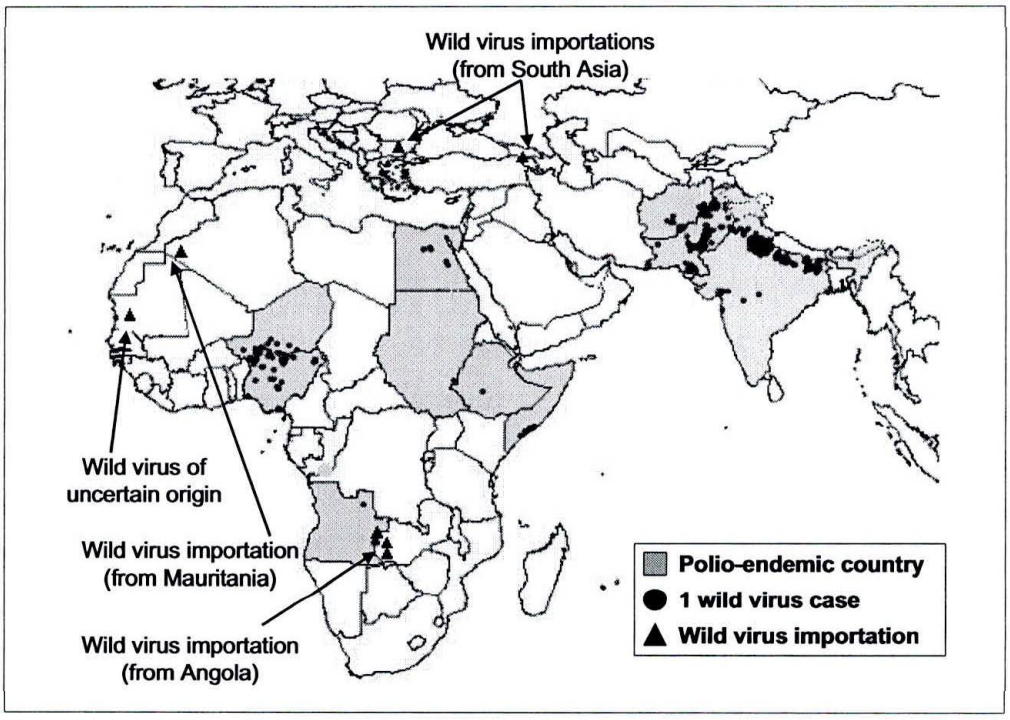
Recommendations:

- WHO and UNICEF should publish, by September 2002, revised estimates of the financial resource requirements for polio activities for the period 2003-2005. In addition to detailing the external financial resources required, this document should reflect, as much as possible, the contributions of the endemic countries themselves, as well as the financial implications of continued wild poliovirus transmission into 2003.
- The estimates of requirements for the post-certification period do not yet provide adequate information to the partnership. Based on various post-eradication scenarios outlined during the seventh TCG meeting, the estimates should be further refined by September 2003.

2.2 Endemic countries and strategic priorities for 2002

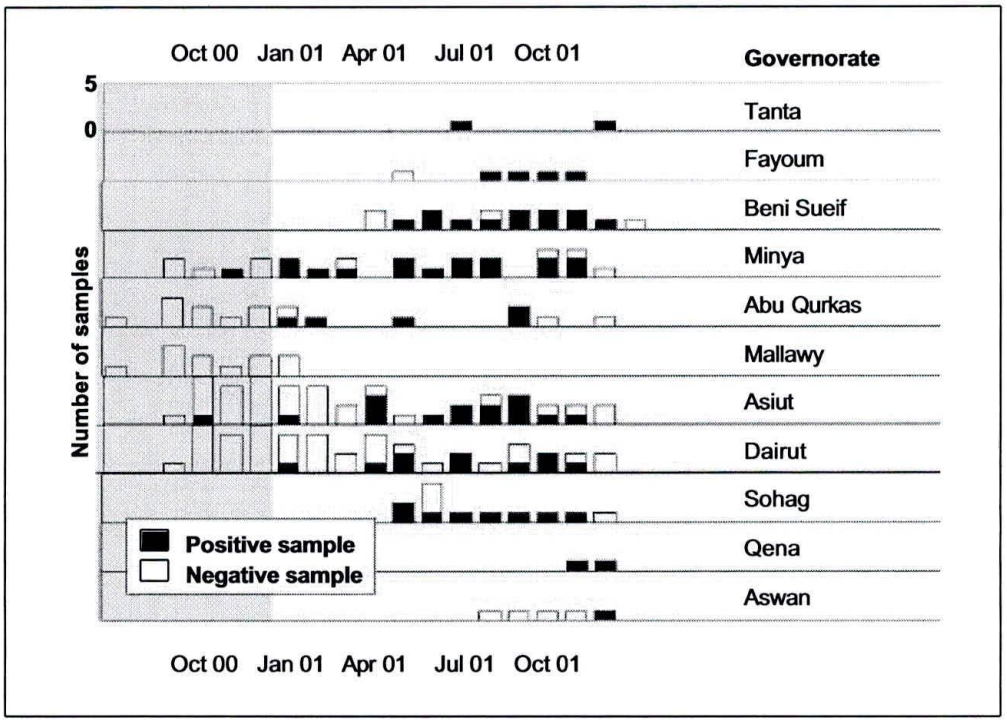
The TCG reviewed the current epidemiology in "high transmission" areas, noting the geographic and/or molecular evidence of ongoing progress in each of these areas. In summary, there has been a 50% reduction in the number of endemic districts in India, a 50% reduction in virus-confirmed cases in Pakistan/Afghanistan and recent localization of transmission in Nigeria to the north/north-west of the country (figure 3). In all "high transmission" countries, detailed programme guidance and strategic priorities for 2002-2003 have been defined by joint national-international technical advisory bodies (i.e. the Polio Expert Advisory Group in India and the Technical Advisory Group on Polio Eradication for Pakistan and Afghanistan) or an expert review (i.e. February 2002 National and International Review of Polio Eradication in Nigeria).

Figure 3: Polio-endemic countries and wild poliovirus, 2001



Of the five "low transmission" countries, only Somalia, Angola and Egypt have had wild poliovirus confirmed polio cases since 1 May 2001. However, surveillance is suboptimal in Ethiopia, and surveillance gaps remain in Angola and the Sudan. Of note, the recent wild poliovirus importation into western Zambia confirmed ongoing virus transmission in eastern Angola. In Egypt, environmental sampling confirmed that circulation of multiple lineages of wild poliovirus type 1 is widespread in Upper (possibly also in Lower) Egypt, indicating that problems in implementing AFP surveillance limit its sensitivity (figure 4). Joint national-international technical advisory groups (TAGs) have now been established for Egypt, the Sudan and Somalia.

Figure 4: Environmental surveillance for wild poliovirus, Egypt, 2000–2001



Despite clear progress in African countries west of Nigeria, a further focus of ongoing wild poliovirus transmission may exist in West Africa. Following the isolation of wild poliovirus type 1 during the first half of 2001 in Mauritania (of uncertain origin, possibly imported), wild poliovirus was recently found again in an area north of Mauritania. Comprehensive investigation, as well as complete surveillance and immunization response, are urgent.

Conclusions

Continued progress towards interruption of wild poliovirus transmission reaffirms that polio eradication is technically and operationally feasible. Insufficient financial resources continue to pose the greatest threat to the eradication initiative. At the country level, heightened attention needs to be paid to the high transmission areas, particularly India. Additionally, special attention is needed for Egypt, and Mauritania and its neighbouring countries.

Following a review of the recommendations made recently by country-level TAGs, the TCG endorsed the surveillance and immunization strategies outlined for each of the remaining endemic countries during this critical year for the global initiative. The TCG notes the significant efforts to improve social mobilization and information activities in most endemic countries. These efforts will have a positive impact on SIA quality and should be continued and further expanded.

The TCG agreed with the following proposal of the global polio eradication partnership as the priority order for resource allocation for country level activities:

a) sustaining the surveillance infrastructure worldwide;

b) ensuring sufficient supplies of oral polio vaccine;

c) ensuring high quality SIAs in endemic countries; and

d) promoting the quality of SIAs in recently endemic countries.

Given the progress in eradication in 2001 in the remaining endemic countries, areas affected by conflict are of increasing importance to global eradication. While governments and polio partner agencies have made further progress to access children in conflict-affected areas, additional well-organized efforts to identify and access critical areas will be needed in 2002.

Because of the rapidly evolving nature of poliovirus transmission worldwide, it would be premature to revise the target date for the cessation of transmission. The Global TCG does recognize, however, that the intensity of virus transmission in the "high transmission" areas, the security concerns in other endemic areas, and the necessary infrastructure work in Egypt, will make it necessary for the initiative to plan for a full programme of work through 2003.

Recommendations:

- The programme should continue to review and update specific contingency plans on a six-monthly basis to deal with potential resource gaps.
- Highest priority should be given to intensify and improve the quality of SIAs in known endemic areas, guided by reliable surveillance data. Results of systematic efforts to monitor and evaluate SIA quality should be used for immediate action to correct problems, and should be documented and provided to the respective country-level TAGs.
- Country-level TAGs or expert advisory groups (i.e. EAG in India) are performing an essential function in endemic countries. All countries endemic for polio in 2001 that do not have an advisory group should establish and convene such a group by September 2002. The terms of reference of country-level TAGs/EAGs should include:
  - critical review of the evolving epidemiology of polio in the country;
  - identification of the risks to achieving eradication, with respect to plans, strategies, and implementation of surveillance and supplementary immunization activities;
  - recommendations as to the appropriate strategies and activities to achieve eradication targets, particularly in the areas of supplementary immunization and surveillance.

- Country-level TAGs/EAGs should be convened by and report to the Minister of Health and meet at least annually. Meetings may need to be convened every six months in rapidly evolving programmes. Whenever possible, TAGs/EAGs should be joint national-international bodies with an appropriate mix of expertise in disease control and eradication. To facilitate collaboration with the Global TCG, country-level TAGs/EAGs should include a representative of the Global TCG, wherever possible. The outcome of country-level TAG/EAG meetings should be documented in brief reports, which should include a summary of key data upon which the strategic recommendations are based.
- During the course of the meetings of country-level TAGs or EAGs, or immediately thereafter, country programmes (i.e. the Ministry of Health (MOH), WHO, UNICEF and other relevant implementing agencies) should translate the recommendations into an operational programme of work. These work plans should define roles, responsibilities and timelines to guide the work of the partnership for the subsequent 6-12 months.
- Social mobilization activities have only recently been accelerated in many countries. All major endemic countries should have completed an evaluation of progress in addressing social mobilization needs by September 2002.
- Polio teams in endemic countries with conflict-affected areas should provide a detailed analysis by end-July 2002 to identify those areas where serious access problems persist and to indicate which potential mechanisms may exist to obtain access for immunization and surveillance activities.
- The TCG should convene again in late 2002 to review all available data, and to further comment on the probable timeline towards stopping wild poliovirus transmission in each of the remaining endemic countries. The partnership will be made aware of TCGs conclusions.

Country specific recommendations:

- **India**: SNIDs should be brought forward to the earliest possible time in the period recommended by the recent EAG (e.g. July and August 2002). Maximum use must be made of both surveillance and SIA quality data to assure the highest possible coverage of very young children, especially in minority groups. It is urgent to systematically evaluate the impact of efforts to improve SIA quality over the last six months and to utilize this valuable information to optimize coverage during the upcoming SIAs.
- **Mauritania/West Africa**: the possibility of a focus of previously undetected transmission in western Africa is of great concern. The WHO Secretariat should urgently clarify the situation by end-May 2002, so that all affected countries can plan and implement response activities as soon as possible.
- **Egypt**: the TCG is impressed by the frank assessment by the Egypt TAG of problems affecting the national polio eradication programme (see figure 4). The TCG urges the MOH Egypt to review the oversight of the programme at national level and requests partner agencies to provide the appropriate technical and financial support.

- **Angola**: an unprecedented opportunity currently exists to access children in all parts of Angola. All partners, especially the government of Angola, are urged to move quickly to achieve safe and effective access to all Angolan children during the planned mid-year NIDs.
- **Pakistan**: the TCG concurs with the strategy of targeting high-risk areas within the country, in addition to focusing on joint virus reservoir areas shared with Afghanistan.
- **Afghanistan**: the re-establishment of an effective programme in Afghanistan should be a global priority. All partners, including the Special Representative of the UN Secretary-General to Afghanistan, all UN agencies, and the provisional Government, are urged to give polio eradication efforts high priority and visibility, in order not to delay the interruption of transmission in Afghanistan, and not to threaten regional and global progress
- **Nigeria**: at this critical juncture of the programme, efforts to improve the quality of SIAs must be intensified, and results reported back to the regional Task Force for Immunization (TFI) and the global TCG. Specific efforts are needed to coordinate activities with Niger. Plans for the formation of an EAG for Nigeria should be carried through and the first meeting held no later than July 2002.
- **Niger**: coordination of surveillance and supplementary immunization efforts with Nigeria should be a priority until both countries are polio-free.
- **DR Congo**: continued efforts should be made to reduce the number of polio-compatible cases through timely and accurate case classification. A progress report on this work should be made to the next meeting of the regional TFI and global TCG.
- **Horn of Africa**: countries in the Horn of Africa (Ethiopia, Somalia, Sudan, and surrounding countries) should ensure appropriate coordination of surveillance and immunization activities, to ensure that no high-risk groups are missed.
- **Ethiopia**: improving the quality of surveillance should remain the focus of efforts over the next 12 months. An expert advisory group for Ethiopia should be formed by September 2002. Particular attention should be given to coordination of surveillance and supplementary immunization efforts between the Ethiopian region V and Somalia.
- **Somalia**: access to the remaining area of transmission in Mogadishu and Lower Shabelle is critical if polio is to be eradicated; all partners, especially UN agencies, are urged to advocate for access and to provide support in accessing these areas for polio eradication work.
- **Sudan**: continued attention should be paid to the quality of the national laboratory, with double-testing of specimens until quality indicators improve. All partners are urged to maintain the coordination between programmes covering northern and southern Sudan and to assure that access to all children is sustained.

3. Priorities in the pre-certification era

3.1 Certification-standard surveillance

The sensitivity of surveillance for wild poliovirus was evaluated by the TCG, beginning with a review of the key indicators (non-polio AFP rates, adequate specimen collection rates, laboratory accreditation) focusing on the Eastern Mediterranean Region (EMR), South-East Asia Region (SEAR) and African Region (AFR) (figures 5 and 6). There has been improvement in AFP surveillance in the priority countries of Nigeria, Angola and DR Congo. Considerable gaps remain however, particularly in Indonesia, southern Africa and the Horn of Africa.

Figure 5: Non-polio acute flaccid paralysis (AFP) rate, WHO African Region, Eastern Mediterranean Region and South-East Asia Region, 2001

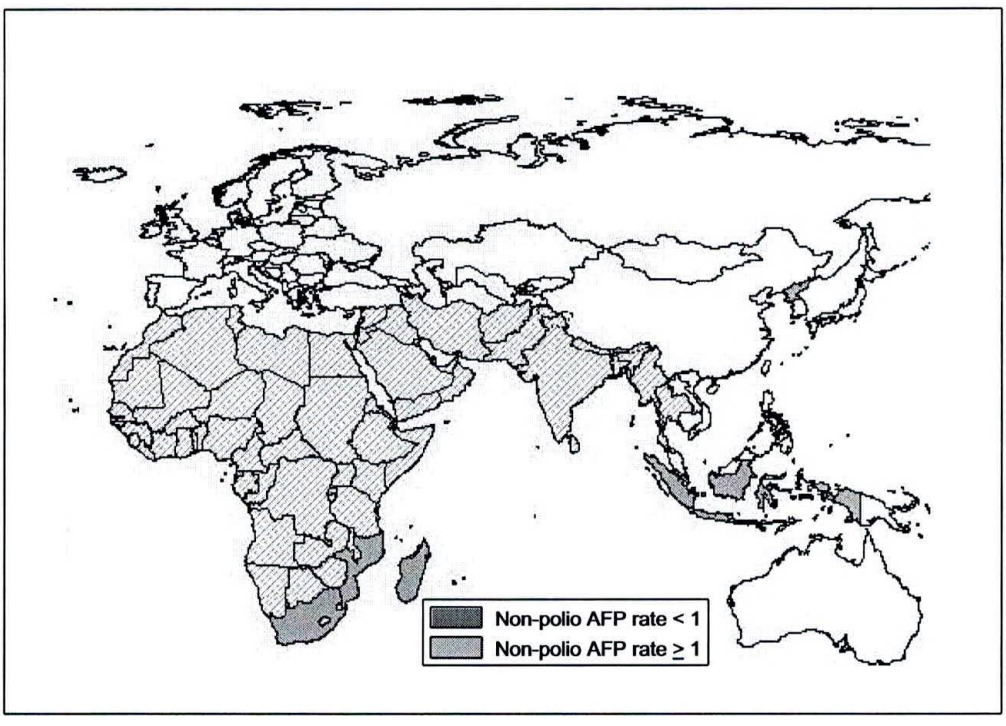
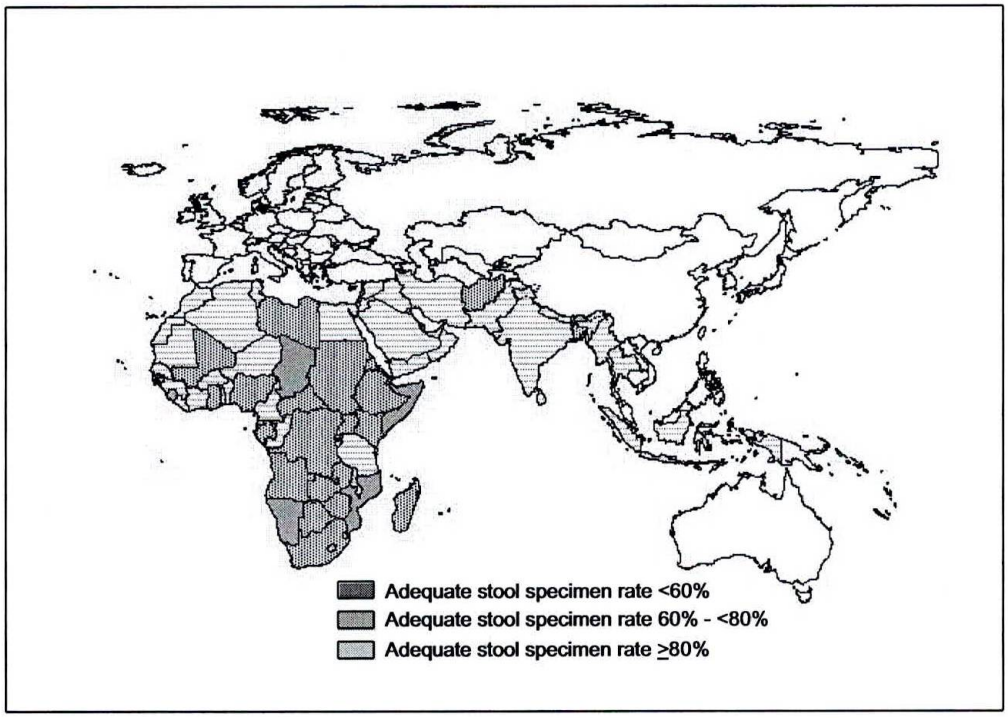


Figure 6: Percent of AFP cases with adequate stool specimens, WHO African, Eastern Mediterranean and South-East Asia regions, 2001



At its last meeting, the TCG made extensive recommendations on the use of AFP cases classified as "polio-compatible" to identify surveillance gaps and areas of potential risk of wild virus circulation. Supplementary information on surveillance sensitivity is now available from genetic sequencing data, environmental sampling and surveillance reviews.

Conclusions

While there have been recent improvements in the timeliness and accuracy of AFP case classification, there remain a large number of polio-compatible cases in many countries following adoption of the virological classification scheme during 2001, particularly in the African Region (table 1). This clearly indicates that the mechanisms for reviewing potential polio-compatible cases are not yet well enough developed. Large numbers of polio-compatible cases represent a failure of the surveillance system.

Table 1: Acute flaccid paralysis, stool specimen collection, confirmed-polio cases and polio-compatible cases, by WHO region, 2001

Region	AFP	Adequate Stool specimens	Confirmed polio	Compatibles (% of total AFP)
AFR	8 541	72%	68	946 (11.1%)
AMR	2 189	90%	10	9 (0.4%)
EMR	3 858	83%	140	77 (2.0%)
EUR	1 752	81%	3	5 (0.3%)
SEAR	10 646	83%	268	221 (2.1%)
WPR	6 527	88%	3	12 (0.2%)
Global	**33 513**	**81%**	**492***	**1 270 (3.8%)**

* Global total includes all wild-virus confirmed cases and 12 cases associated with vaccine-derived poliovirus, data as of 8 April 2002

The sequencing data presented to the TCG demonstrate high AFP surveillance sensitivity in India and Pakistan but reaffirm concerns as to the sensitivity in Egypt. Sequencing data on viruses detected in 2001 also confirms the need to further enhance sensitivity in Somalia, West Africa, the Sudan and Angola.

The TCG notes that AFP surveillance can be developed to certification-standard levels in countries affected by conflict. Despite concerns as to AFP sensitivity in conflict-affected areas, performance indicators and international surveillance reviews (e.g. DR Congo) demonstrate that AFP surveillance quality in these areas, supported where necessary by special surveillance activities such as "active search", can reliably identify wild poliovirus transmission.

The TCG recognizes the increased difficulty of international transport of laboratory reagents, supplies and samples in the period following 11 September 2001, and the increased demands that this is making on the laboratory network. Wherever possible, specific constraints to rapid transport should be identified so that they can be appropriately addressed.

Recommendations:

- The TCG notes the value of AFP surveillance reviews and recommends that:
  - all endemic countries that have not conducted a surveillance review within the last 12 months, or a review of polio activities that incorporated surveillance, should complete such a review by end-2002;
  - any polio-free country that has been unable to achieve or maintain certification-standard AFP surveillance and has not conducted a surveillance review within the last 12 months should complete such a review by end-2002, with particular priority given to the relevant countries of southern and eastern Africa;
  - the methodology of surveillance reviews should be comparable across countries. Standard tools should be developed drawing on the experience of previous reviews.
- Given the inter-regional nature of some geographic blocks (e.g. the Horn of Africa) WHO HQ should be coordinating the mapping of key surveillance indicators across regional boundaries, with the distribution of these maps and appropriate surveillance data to the concerned teams on a quarterly basis.
- Recognizing the high number of polio-compatible cases, the TCG reaffirms the importance of recommendations of previous meetings stating that all countries should:
  - maximize efforts to obtain two adequate specimens from every AFP case;
  - prioritize investigation and follow-up of cases with inadequate specimens;
  - ensure all potentially compatible cases are referred to an appropriately trained expert group for classification within 90 days of onset;
  - monitor and map polio-compatible cases at least monthly, and conduct field investigations of all compatible cases, including active case search, with particular attention to clusters of cases;
  - use data on polio-compatible cases to identify areas for improving surveillance quality and areas at risk of wild poliovirus circulation.
- At this stage of the Global Eradication Initiative, the careful analysis of data on polio- compatible cases is critical. The use of data on polio-compatible cases to identify surveillance gaps and high-risk areas should be strengthened by:
  - the augmentation, by June 2002, of guidelines for expert groups to include a standard format for the analysis of potential compatible cases;
  - re-briefing of expert groups in all countries with high proportions of polio-compatible cases;
  - close scrutiny of the classification and use of compatible cases during surveillance reviews, including the reasons for classification as polio-compatible.
- An interim report on surveillance quality in the African Region should be presented to the next meeting of the Regional TFI. The report should emphasize the mechanism for the assessment of potential polio-compatible cases, and contain an analysis of cases classified as polio compatible, and of the proportion of cases with inadequate specimens that have 60-day follow-up.

- Data on polio-compatible cases, and the trends in classification of these cases, is lacking at global level. The TCG requests a summary report to be included at the next TCG meeting, providing data on the trends in compatible cases over time, comparison of characteristics of polio-compatible cases with other non-polio AFP cases and polio-confirmed cases (e.g. age, vaccination status), and outcomes of the investigation of clusters of compatible cases.
- The TCG notes and supports the mechanism proposed by the Global Laboratory Network meeting (March 2002) for the distribution and updating of genetic sequencing data on polioviruses. The system should be brought into operation as soon as possible. The TCG should receive an update on the status of the system by end-2002 with full details by mid-2003.
- The TCG notes and supports the proposal of the Global Laboratory Network meeting (March 2002) to develop global guidelines for environmental surveillance by July 2002. These guidelines should incorporate previous WHO guidelines on the programme response (both immunization and surveillance) to wild poliovirus isolations from the environment.
- The TCG noted with concern the low percentage of stool specimens arriving at the laboratory within three days of collection, in almost all regions. Priority should be given to improving this indicator in all regions, with a report to the TCG in 2003 on the status of the indicator, the constraints to achieving it, and the potential implications, if any, for wild poliovirus isolation.

3.2 Containment of laboratory stocks of wild poliovirus

An overview of the progress with global laboratory containment was presented, and the TCG noted the progress in all WHO regions, especially in the European Region (EUR) Member States (table 2). The TCG was also updated on the major revisions to the global action plan for laboratory containment, resulting from WHO consultations in October 2001 and March 2002.

Table 2: Progress with global laboratory containment, status March 2002

	WHO region	Coordinator	Plan	Lab list	Survey	Inventory
Non- endemic	AMRO (48)	2	2	1	1	0
	EURO (51)	48	27	28	22	0
	WPRO (36)	36	36	36	36	9
Endemic	EMRO (23)	17	17	1	1	1
	SEARO (10)	3	3	0	0	0
	AFRO (48)	0	0	0	0	0
	Global (216)	106 (49%)	85 (40%)	66 (31%)	60 (28%)	10 (5%)

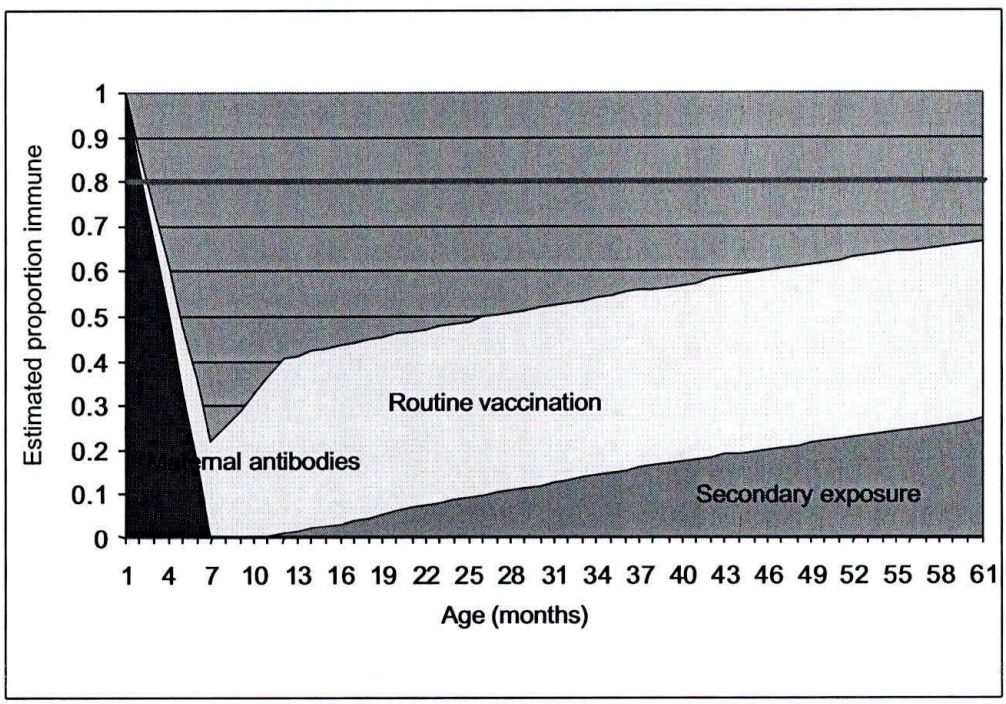
Recommendations:

- The second edition of the global action plan for laboratory containment should be completed by end-July 2002, and widely circulated.
- WHO should urge all non-endemic countries to appoint a national containment coordinator or task force and establish a national plan of action by end-2002, with particular emphasis on countries of the Americas, as well as appropriate polio-free countries of SEAR and EMR.
- Potential tools for the validation of the containment process at the national level should be developed, pilot tested and reported to the TCG by mid-2003.
- Further studies should be conducted, in at least two additional countries, to assess the risk of wild poliovirus in those materials identified as "potentially infectious" in the course of establishing national inventories in large industrialized countries. This experience should be reported to the TCG by mid-2003.

3.3 Supplementary immunization in polio-free areas

Given the risk of spread of imported wild polioviruses (Bulgaria, Georgia, Zambia) WHO has re-evaluated the role of supplementary immunization in polio-free areas. The analysis presented to the TCG (figure 7) demonstrates the importance of polio-free areas continuing to use periodic NIDs or extensive SNIDs to maintain population immunity. The occurrence of the recent vaccine-derived poliovirus outbreaks (Hispaniola, Philippines) in the presence of low population immunity provides further argument for achieving and sustaining high immunization coverage, ideally through routine immunization services.

Figure 7: Population immunity by age, assuming 50% OPV3 immunization coverage and 15% secondary exposure



Recommendations:

- In all countries, plans for SIAs should be integrated with broader multi-year national immunization plans, including those developed in conjunction with proposals for Global Alliance for Vaccines and Immunization (GAVI) support, where applicable.
- Polio-free countries that border endemic areas, or have very low immunization coverage, should continue to conduct national or subnational immunization days, as appropriate, on an annual basis.
- Countries that have been polio-free for at least three years, but have not achieved or maintained a level of 90% routine immunization of infants with three doses of OPV (OPV3 coverage), should continue to conduct NIDs at least every three years, to prevent the accumulation of susceptibles and protect against the importation of wild polioviruses. In larger countries, where appropriate, SNIDs should be conducted to cover those states or provinces with lower than 90% coverage.
- Where provision of resources for SIAs in polio-free countries is an issue, priority should be given to countries in high-risk situations and with the lowest routine coverage.
- The ongoing research on the frequency and risk factors for circulating vaccine-derived polioviruses (cVDPVs) should be used to evaluate the potential role of supplementary immunization activities following regional certification.

3.4 Post-certification immunization policy development

The TCG reviewed progress with the two-part agenda to enable an evidence-based decision on the most appropriate immunization option(s) in the post-certification era.

The first area of work, the research agenda, is proceeding well. Despite screening over 2100 Sabin-like isolates, no new episodes of cVDPV have been identified. Follow-up of the 12 long-term excretors identified during 40 years of OPV use has found that only two are known to continue to excrete, while data from the UK and USA suggest that persistent excretion occurs in at most 0.01-1% of persons with severe immunoglobulin-deficiency diseases. In the area of "new" vaccines, a review of the regulatory issues for monovalent OPV will be available by mid-2002 as well as initial estimates on the size of the stockpile required. The field component of the IPV study in Cuba to address immunogenicity and mucosal immunity in such settings has been completed. A study of the circulation of OPV-derived viruses before, during and after a switch to IPV in New Zealand has been designed to measure the effect of IPV on VDPV circulation.

Draft scenarios for IPV demand were discussed with manufacturers in March 2002, and UNICEF is preparing an exploratory request for proposals to determine the potential supply and public sector price. A proposal to prepare a clinical trial lot of Sabin-IPV is under consideration such that clinical trials could be implemented in 2003 with immunogenicity data available by 2004. To better understand the potential impact of OPV campaigns on the dynamics of VDPVs, systematic analyses of data on Sabin-like isolates after supplementary immunization activities will be completed by mid-2002.

The second area of work involves international consensus-building on policy for the post-eradication era, including evaluation of the economic, political, operational and financial implications of each option. Through advice from policy-makers, primarily from developing countries, the April 2002 meeting of the Global Health Forum on post-certification immunization policy development held in Annecy, France, just before the TCG, has generated critical information required to develop national policy for the post-certification era. This forum has also led to suggestions on appropriate mechanisms for discussing and generating policy consensus.

The TCG was presented with a detailed communications and public information plan to keep countries and interested parties abreast of the issues, and to work towards consensus on important issues related to post-certification immunization policy. The TCG also was briefed on the potential role of the International Health Regulations in the post-eradication era.

Conclusions

While acknowledging progress in implementing the programme of work related to the development of post-certification policy development, the TCG notes the following remaining gaps: (1) type of vaccines, size and operating procedures necessary for managing the vaccine stockpile needed for the post-immunization era; (2) the incidence and relevance of chronic excretion of polio vaccine virus; (3) the determinants of increased transmissibility of circulating vaccine-derived polioviruses; (4) operational and epidemiological issues surrounding the routine use of IPV; (5) assembling information in ways (i.e. decision models) that make it easier to arrive at actual policy decisions; and (6) the working relationship between the programme and vaccine manufacturers is not yet as close as is desirable.

Recommendations:

- The TCG makes the following recommendations to address the remaining major gaps in research and programmatic information needed for the development of post-certification immunization policy:
  - *Vaccine stockpile for the post-immunization era*: preliminary information on the potential size, type of vaccines and operating procedures for this stockpile should be available in 2003. The size of this stockpile should be guided by an understanding of how population susceptibility could evolve after immunization stops, the potential spread of poliovirus in various populations, and various sensitivities of surveillance to detect virus. A working group should be formed to accelerate work in this area.
  - *Long-term excretors of polio vaccine virus:* the work to evaluate the incidence and potential risk posed by severe immunodeficiency syndromes should be expanded in middle-income countries. Further work should be done to evaluate the potential transmissibility of viruses from such patients and the potential role of antiviral therapies in clearing the excretion.
  - *OPV production in the post-immunization era:* the programmatic work should be expanded to include an evaluation of the time, costs and other factors involved in restarting OPV production after immunization with OPV has been discontinued.

- *Transmissibility of VDPVs:* further work should be done to understand the markers of transmissibility of VDPVs, particularly the utility of recombination with non-polio enteroviruses as an indicator of the risk of VDPV circulation.
- *IPV in developing countries:* given the complexities (and uncertainties) with routine IPV use in developing countries, a multi-year pilot/ demonstration project of IPV routine use (combined with related operational research) should be explored in a tropical island setting.

- Recognizing the progress in the programmatic and scientific research agenda for development of post-certification immunization policy for polio, WHO should develop policy decision models over the next 12 months that reflect how the range of possible research outcomes would affect post-certification policy development. To better understand how differing risk perceptions might influence national or regional policy development, these decision models should be tested with a range of experts familiar with policy development in representative geopolitical areas. The outcomes of this work and its implications should be presented to the TCG in 2003.
- Experience gained from implementation of the communications plan should be used to review and revise that plan by June 2003. This should include further delineation of the goals, objectives and target audiences, the provision of communication tools for national programmes and how the communication plan will be evaluated. The results of this review should be presented to the TCG in 2003.
- The work being undertaken by different institutions, on the economic and financial implications of the possible post-certification immunization scenarios, should be consolidated by mid-2003 to provide a comprehensive view of the potential resource requirements.
- Recognizing the value of the March 2002 meeting with manufacturers on polio vaccine demand post-2005, WHO and UNICEF should plan regular meetings (at least annually, but more frequently if requested by manufacturers) to exchange information and provide a forum for discussion of the vaccine supply implications of policy options.
- WHO should, by September 2002, refine and make widely available the framework it is using for assessing and managing the risk of polio re-introduction or re-emergence once immunization against polio has been stopped.
- WHO should present to the TCG in 2003 an outline of the cross-cluster programme of work for the post-certification era, including biosafety, surveillance and response, and health systems strengthening.

3.5 Programme oversight, administration and human resources

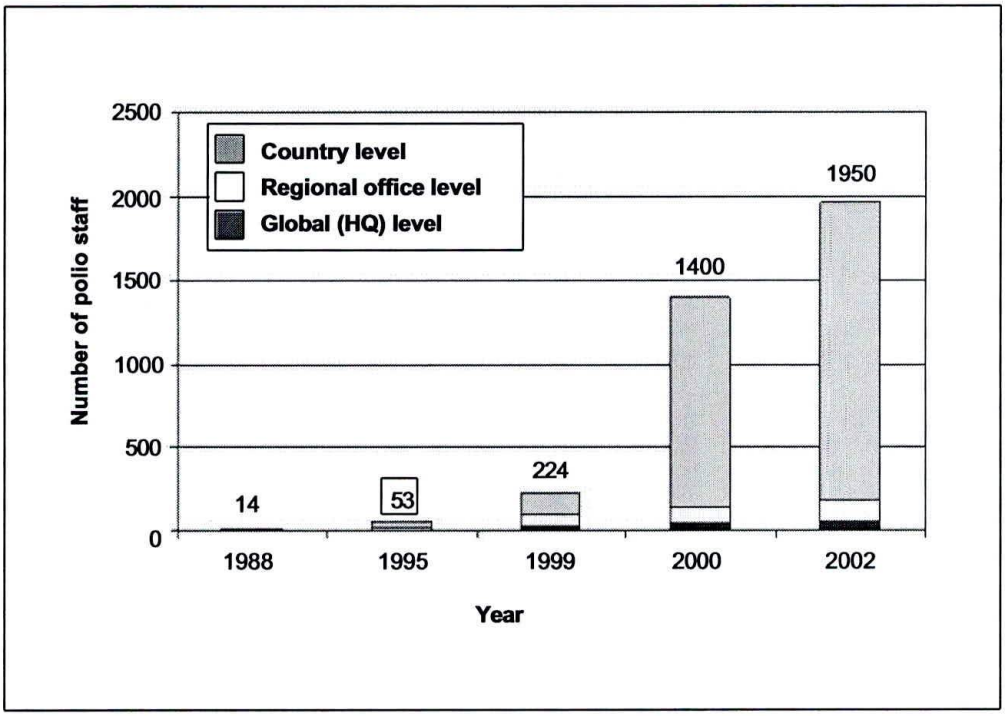
The TCG reviewed the findings of the two major evaluations of the polio initiative that had been conducted in 2001, with particular attention to the thematic evaluation commissioned by the WHO Director-General. The TCG examined the recommendations that the composition and operations of the global oversight body be revised to ensure it can fully and efficiently address all post-certification issues. In considering the optimum expertise and mechanisms for its future work, the TCG noted that its role had been changing with the advent of country-level oversight groups and the increasing attention already being given to laboratory containment and post-certification policy. The TCG also recognized that there are an increasing number of international and national fora for partners to review progress and stay abreast of evolving issues and challenges (e.g. Scientific Advisory Group of Experts (SAGE), regional TCGs and the TFI).

Since 1999 the TCG has commented on the need to enhance the WHO administrative support to polio eradication activities. The administrative challenges posed by the rapid increases in human and financial resources (see figure 8) have been compounded by the fact that most of this growth has been in countries with the weakest banking and security infrastructures. The TCG was impressed with how responsive WHO administration at all levels had been to prior TCG recommendations.

The administrative mechanisms developed to support polio eradication at global, regional and country level have enhanced the capacity of the programme to deal with rapidly evolving situations. The TCG is concerned, however, that this level of support must be maintained and where possible expanded in the period leading up to certification, particularly in the endemic regions and countries. In this critical stage it is vital to maintain the mechanisms developed to improve the speed and efficiency of administrative support. The TCG endorsed the plans to better monitor the performance of this support.

Further to the 2001 TCG recommendation to document the impact of the polio infrastructure on other health services, the results of an extensive survey on the work of WHO polio-funded personnel was presented. Initial analyses found that 91% of polio-funded personnel are regularly engaged in routine immunization activities, 65% had participated in measles or tetanus campaigns in 2001 and 68% conducted surveillance for other diseases. The TCG was impressed by the information documenting that polio eradication teams, consisting of well-trained cadres of motivated professionals, have played a major role in supporting broader immunization programmes and overall health systems. Polio eradication teams represent a very valuable national resource, which countries should plan to continue to take advantage of, even beyond certification of polio eradication.

Figure 8: Increase in the number of polio-funded staff working at global, regional and country level from 1988 to 2002



Recommendations:

- As future meetings of the Global TCG will increasingly focus on specific technical or policy issues for the post-certification era, WHO should ensure that the size of these meetings promotes and facilitates appropriate scientific presentation and discussion of the issues.
- Given the need to limit the size of future Global TCG meetings, WHO and the polio partnership should consider convening occasional public meetings, with invitation to all interested parties, to share information on the status of global polio eradication.
- Given the evolving role of the Global TCG, WHO should identify additional TCG members to strengthen expertise in the areas of international policy development, virology and biosafety. In expanding the TCG, efforts should be made to achieve a better gender balance.
- Recognizing that the move of the African Regional Office to Brazzaville will result in a transition period for support services, the TCG would like to be kept informed about progress in maintaining a high level of administrative support for poliomyelitis eradication activities in the Region.
- The analysis of the survey of WHO polio-funded personnel on their work in other immunization and surveillance activities should be completed and disseminated widely to all partners.
- The TCG reaffirms the need for human resources planning to ensure that all vital functions for achieving and maintaining polio-free status through global certification and beyond are maintained. This plan should be submitted to the next meeting of the TCG.

3.6 Milestones for the Global Polio Eradication Initiative 2002–2003

The TCG reviewed progress against the milestones outlined in each of the five major areas of the Global Polio Eradication Strategic Plan 2001-2005 (table 3). While the five major areas of work outlined in the Plan continue to be appropriate for the polio eradication partnership, however, on the basis of experience gained over the past 24 months there is a need to review and revise the scope of three of the areas (i.e. supplementary immunization, post-certification immunization policy, and impact of polio eradication on health systems), as well as the milestones for 2002-2003.

Recommendation:

- The TCG concurs with the revised scope of work and milestones of the Global Polio Eradication Initiative Strategic Plan 2001–2005, as detailed in table 1 below.

Table 3: Objectives and milestones for the Global Polio Eradication Initiative, 2002 and 2003

Objective	Milestones 2002	Milestones 2003
Interruption of poliovirus transmission	• Transmission of wild poliovirus will be stopped in all countries. • EUR will be certified polio-free.	• Maintenance of global polio-free status.
Supplementary immunization activities (SIAs)	**Endemic countries** • 3-4 NIDs/year and mop-up campaigns will continue in all countries that were endemic in 2000-2001, using a house-to-house strategy. **Polio-free countries** • Continued annual SIAs in all high-risk polio-free countries and long-term SIA plans established for all countries with OPV3 <90%.	**Endemic countries** • 3-4 NIDs/year and mop-up campaigns will continue in all countries that were endemic in 2001-2002, using a house-to-house strategy. **Polio-free countries** • Continued annual SIAs in all high-risk countries, and other polio-free countries with <90% OPV3 conducting SIAs at least every 3 years.
Certification-standard surveillance	**AFP surveillance** • Certification-standard surveillance will be achieved and maintained in all regions and in >90% of countries. **Certification** • National Certification Committees will be established in all countries including all endemic and recently endemic areas.	**AFP surveillance** • Certification-standard surveillance will be achieved in all countries of AFR, EMR and SEAR. **Certification** • Regional Certification Committees receive preliminary reports from National Certification Committees of all countries which have been polio-free for greater than 3 years.
Containment of wild poliovirus stocks	**Process** • National Task Force / Coordinator and National Plans of Action for laboratory containment are established in all non-endemic countries. **Outcomes** • National laboratory surveys are initiated in all non-endemic countries of AMR, EMR, EUR, SEAR with complete inventories in WPR.	**Process** • Regional plans of action are established for the "post wild poliovirus interruption" phase in AMR, EUR and WPR. **Outcomes** • National laboratory survey initiated in all countries with inventories complete in AMR, EUR and the non-endemic countries of EMR and SEAR.
Development of post-certification immunization policy	**Data generation** • All programmatic data required for policy development has been identified or collected. **Policy development** • A framework is developed for assessing and managing post-certification risks of polio re-introduction or re-emergence.	**Data generation** • All scientific research data required for policy development is being collected. **Policy development** • At least one forum is held with key policy-makers in each geopolitical block to receive comments on the risk framework and post-certification immunization policy options.
Strengthening health systems through routine immunization and surveillance	**Routine immunization** • Five of the countries with a large polio infrastructure will have explicit phased plans linking that infrastructure with the routine EPI goals. **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. **Partnership** • Lessons learned from the Interagency Coordinating Committees (ICCs) are documented, with best practices defined.	**Routine immunization** • Ten countries with a large polio infrastructure will have explicit phased plans for linking that infrastructure with the routine EPI goals. **Surveillance** • All countries using AFP surveillance will have included at least tetanus and measles in the system and established laboratory capacity to diagnose measles. **Partnership** • ICC best practices are disseminated and introduced, at least in the 74 countries receiving GAVI assistance.

Annex 1: Agenda

Tuesday, 9 April 2002

08:00–08:30	Registration
08:30–08:50	Opening statements
08:50–09:00	Introductions, election of officers and adoption of agenda
Day 1:	**Stopping polio transmission**
Session 1:	**Programme objectives and overview**
09:00–10:00	2001 eradication activities, milestones and TCG recommendations Special report: resource mobilization activities and outcomes **Discussion**
Session 2:	**Endemic countries – status, risks and priorities**
10:00–10:30	High intensity transmission areas – Northern India
10:30–11:00	*Coffee break*
11:00–13:00	– Pakistan and Afghanistan – Nigeria and Niger Low intensity transmission areas – Horn of Africa: Ethiopia/Somalia/Sudan – Egypt
13:00–14:00	*Lunch*
14:00 – 15:00	– Central Africa: Angola/Democratic Republic of the Congo
15:00–15:30	Stopping polio transmission: summary of 2002-2003 supplementary immunization activities and OPV supply
15:30–16:00	*Coffee break*
16:00–18:00	Closed session of the Global TCG: recommendations on sessions 1 and 2

Wednesday, 10 April 2002

Day 2:	**The polio endgame**
Session 3:	**Priorities in the pre-certification era**
09:00–12:30	Gaps in global AFP surveillance: – AFP performance indicators including compatible cases – Global Laboratory Network performance and sequencing data – Environmental sampling data – Conflict-affected countries and areas Laboratory containment: progress and proposed revisions to the global plan of action
10:30–11:00	*Coffee break*
	Role of supplementary immunization after interrupting polio transmission
12:30–14:00	*Lunch*
Session 4:	**Development of post-eradication polio immunization policy**
14:00–15:30	Status of programmatic and scientific research: – Frequency of VDPV circulation and chronic excretors – Monovalent OPV and Sabin-IPV – IPV efficacy in the developing country setting – Impact of pulse OPV on VDPV circulation Potential vaccine requirements for the post-eradication policy options
15:30–16:00	*Coffee break*
16:00–18:00	Closed session of the Global TCG: recommendations on session 3 and 4

Thursday, 11 April 2002

Day 3:	**The polio endgame (continued)**
Session 4:	**Development of post-eradication polio immunization policy (cont.)**
09:00–10:30	Factors influencing post-eradication policy – Report of the IGH Forum International Health Regulations and the post-eradication era Programme of work in endgame communications
10:30–11:00	*Coffee break*
Session 5:	**Programme administration and milestones**
11:00–12:30	Administration: management and capacity for the polio eradication initiative Human resources – current status, activities and future plans Polio eradication initiative milestones for 2002-2003
12:30–14:00	*Lunch*
Session 6:	**Closing**
14:00–15:30	TCG conclusions and recommendations
15:30–16:00	*Coffee*
Session 7:	**Closed session of the Global TCG**
16:00–17:00	Report finalization and other business

Annex 2: List of participants

Technical Consultative Group

*Dr I. Arita, Agency for Cooperation in International Health, 4-11-1 Higashi-machi, Kumamoto City 862, Japan

Dr R.N. Basu, A73 Yojna-Vihar, New Delhi 110092, India

Dr P. Figueroa, Department of Epidemiology, Ministry of Health, Kingston, Jamaica (Rapporteur)

Dr Mohammed Suleiman Ali Jaffer, Ministry of Health, PO Box 393, Muscat, Sultanate of Oman
(also serves as member of the Global Certification Commission (GCC) and Chair, Steering Committee on Research for the Development of Post Eradication Immunization Policy)

Professor F.K. Nkrumah, Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana, PO Box LG 581, Legon, Ghana
(also serves as member of the Global Certification Commission (GCC))

Dr W Orenstein, Centers for Disease Control and Prevention, National Immunization Program, 1600 Clifton Road, Atlanta, GA 30333, USA
(Chair)

Global Commission for the Certification of the Eradication of Poliomyelitis

Professor A. Adams, National Centre for Epidemiology and Population Health, Australian National University, Canberra ACT 0200, Australia

Dr A. Deria, 28 Claudia Place, Augustus Road, GB-London SW19 6ES, United Kingdom

Professor S.G. Drozdov, Institute of Poliomyelitis and Viral Encephalitis of the Academy of Medical Science of the Russian Federation, Moscow 142782, Russian Federation

*Professor Jan Kostrzewski, Department of Epidemiology, National Institute of Hygiene, 24 Chocimska Street, PL-00-791 Warsaw, Poland

Dr R. Leke, Department of Immunology and Microbiology, Faculty of Medicine, University of Yaoundé, Yaoundé, Cameroon

Dr C. de Macedo, SMDB Conjunto 01 Casa 05, Lago Sul, Brasilia, DF 71680-010, Brazil

* Unable to attend.

Professor Nath Bhamarapravati, Center for Vaccine Development, Institute of Sciences and Technology for Development, Mahidol University at Salaya, Nakhonchaisri, Nakhonpathom 73170, Thailand

* Dr F.C. Robbins, Department of Epidemiology and Biostatistics, School of Medicine, Case Western University, 10900 Euclid Avenue, Cleveland, OH 44106-4945, USA

Sir J. Smith, 95 Lofting Road, Islington, GB-London, N1 1JF, United Kingdom

Dr Wang Ke-An, Chinese Academy of Preventive Medicine (CAPM), 27 Nanwei Road, Beijing 100050, People's Republic of China

Technical advisers

Dr J.K. Andrus, Institute for Global Health, University of California, 74 New Montgomery Street, Suite 508, San Francisco, CA, USA

Dr E. Feinglass, Institute for Global Health, University of California, 74 New Montgomery Street, Suite 508, San Francisco, CA, USA

*Mrs Maureen Best, Office of Laboratory Security, Health Canada, HPB Building #7, Post Locator 0700A1, Tunney's Pasture, Ottawa, ON K1A OL2, Canada

*Dr N.K. Blackburn, National Institute for Virology, Private Bag X4, Sandringham 2132, Johannesburg, South Africa

Dr S. Cochi, Centers for Disease Control and Prevention, National Immunization Program, 1600 Clifton Road, Atlanta, Georgia 30333, USA

*Dr J. Deshpande, The Enterovirus Research Centre, Indian Council of Medical Research (ICMR), Haffkine Institute Compound, Acharya Donde Marg, Parel, Mumbai 400 012, India

Dr W. Dowdle, The Task Force for Child Survival and Development, 750 Commerce Drive, Suite 400, Decatur, Georgia GA 30030, USA

Dr T. Hovi, Head, Department of Microbiology, National Public Health Institute (KTL), Mannerheimintie 166, FIN-Helsinki 00300, Finland

Dr O. Kew, Centers for Disease Control and Prevention, 1600 Clifton Road, Atlanta, GA 30333, USA

Dr D. Salisbury, Department of Health, Room 607A, The Communicable Disease and Immunisation Team, Skipton House, 80 London Road, GB-London SE1 6LH, United Kingdom

Dr H. van der Avoort, Laboratory of Virology, RIVM, Antionie Van Leewenhoeklaan 9, Box 1, NL-3720 Bilthoven, The Netherlands

Dr W. Lim, Head Virus Unit, 9/F Public Health Laboratory Centre, 382 Nam Cheong Street, Kowloon, Hong Kong, People's Republic of China

* Unable to attend.

Steering Committee on Research for the Development of Post Eradication Immunization Policy

Dr J. Clemens, International Vaccine Institute, Kwanak PO Box 14, Kwanak-Ku, Seoul 151-600, Republic of Korea

Dr P. Fine, London School of Hygiene and Tropical Medicine, Keppel Street, GB-London, WC1E 7HT, United Kingdom

Professor Y. Ghendon, Frunzenskaya nab. 36, Flat 26, Moscow, 119146, Russian Federation

Dr P. Minor, Division of Virology, National Institute for Biological Standards and Control (NIBSC), Blanche Lane, South Mimms, GB-Potters Bar, EN6 3QG, United Kingdom

Dr N. Takeda, National Institute of Health (NIH), 4-7-1 Gakuen, Musashimurayama, Tokyo 208, Japan

Dr P. Wright, Department of Pediatrics, Division of Infectious Disease, Vanderbilt University Medical Center, 1161 21st Avenue South, Nashville, TN 37232 2581, USA

Country representatives

Dr A. Akhgar, Director of Primary Health Care, Afghanistan

Dr W.P. Kandolo, EPI Programme Manager, Democratic Republic of the Congo

Dr Tesfanesh Belay, Head of Family Health and Dr Yigzaw Asnakew, EPI Programme Manager, Ethiopia

Mr J.P. Sharma, Secretary of Family Welfare, Uttar Pradesh, India

Mr A. Amanullah, Secretary of Family Welfare, Bihar, India

Dr S. Sarkar, Assistant Commissioner Secretary of Family Welfare, New Delhi, India

Dr A. Barkire, EPI Programme Manager, Niger

Dr A. Awosika, Coordinator, National Programme on Immunization, Nigeria

Dr R. Hafiz, National EPI Manager, Pakistan

Dr A. El Sayed, EPI Director, Sudan

Polio Eradication Core Partner Organizations

Rotary International

Mr W. Sergeant
Mr P. Carpenter
Dr R. Scott

United Nations Children's Fund (UNICEF)

Mr C. Tinstman
Dr J.M. Okwo-Bele
Dr S. Mahendra
Dr A. Golaz
Dr V. Lara
Mr B. Isselnou
Dr K. Vanormelingen
Dr P. Salama
Dr M. Costales
Mr T. Sorensen
Dr R. Davis
Dr M. Babille
Dr R. Aziz
Dr Q. Al-Nahi
Mr M. Pecho
Ms T. De Bodt
Dr T.O. Kyaw-Myint
Ms J. Bailey
Ms S. Hall
Dr C. Dricot d'Ans
Ms L. Desomer
Dr M. Sheth

Centers for Disease Control and Prevention (CDC)

Dr R. Keegan (*Unable to attend*)
Ms D. Johnson
Dr V. Caceres
Dr M. Pallansch
Mr P. Zuber

Implementing Partners

Francois Bompart, Aventis Pasteur Limited, Connaught Laboratories Ltd, 1755 Steeles Avenue West, Toronto, Ontario M2R 3T4, Canada

Global Alliance for Vaccines and Immunization (GAVI)

Dr V. Pellegrini, International Federation of Pharmaceutical Manufacturers Associations (IFPMA)

*Developing Countries and Vaccine Manufacturers Network (DCVNM)

Dr B. Morinière, International Federation of Red Cross and Red Crescent Societies (IFRC), 17 Chemin des Crêts, 1211 Geneva 19, Switzerland

*International Committee of the Red Cross, Geneva, Switzerland

* Unable to attend.

Donors' and Partners' governments

Ms S. Barrow, Canadian International Development Association (CIDA)

*Gates Foundation

*Ireland

Dr Y. Chiba, Department of International Cooperation, National Medical Centre, Japan

Ms M. Middelhoff, Permanent Mission of the Kingdom of the Netherlands to the United Nations Office and International Organizations at Geneva, the Netherlands

Dr I. Orstavik, National Institute of Public Health, Norway

*Rockefeller Foundation

United Kingdom of Great Britain and Northern Ireland

Ms Andrea Gay, United Nations Foundation, 1301 Connecticut Avenue, NW, Suite 700, Washington, DC 20036, USA

Ms Ellyn Ogden, United States Agency for International Development (USAID)

*Wellcome Trust

World Bank, 1818 H Street, MSN 3-301, Washington, DC 20433, USA

WHO Secretariat - regional and country offices

Regional Office for Africa (AFRO), Harare, Zimbabwe

Dr O. Babaniyi
Ms Y. Kerr
Dr S. Okiror
Dr M. Otten
Dr O. Tomori
Dr K. Kapitaine
Dr A. Gasasira

EPI subregional offices, African Region

Dr R. Eggers, ICP Eastern Block, Kenya
Dr D. Nshimirimana, ICP Western Block, Côte d'Ivoire
Dr J. Rasoarimalala, ICP Central Block, Cameroon

AFRO country offices

Dr R. Gama-Vaz, Angola
Dr M. Kamwa, Democratic Republic of the Congo
Dr A.B. Gaye, Democratic Republic of the Congo
Dr F. Oyewole, Ethiopia
Dr A. Jack, Nigeria

* Unable to attend.

Regional Office for the Americas (AMRO), Washington, DC, USA

Mr P. Carrasco
Dr M. Landaverde

Regional Office for the Eastern Mediterranean (EMRO), Cairo, Egypt

Dr H. Wahdan
Dr T. Gaafar
Dr F. Kamel
Dr H. Ashgar, Laboratory Coordinator

EMRO country offices

Dr A. Mounts, Pakistan
Dr N. Sadozai, Afghanistan
Dr S. Haithami, Sudan

EPI subregional offices (EMRO)

Dr H. Jafari, PAK/AFG/IRN
Dr E. Durry, SOM/SUD

Regional Office for Europe (EURO), Copenhagen, Denmark

Dr S. Wassilak
Dr G. Oblapenko
Dr G. Lipskaya
Dr N. Emiroglu

Regional Office for South-East Asia (SEARO), New Delhi, India

Dr B. Burkholder
Mr J.-G. Tezier
Dr A. Thapa

SEARO country offices

Dr G Hlady, India

Regional Office for the Western Pacific (WPRO), Manila, Philippines

Dr Y. Baoping
Dr S. Roesel
Dr W. Antowiak

WHO headquarters, Geneva, Switzerland

Other clusters

Dr D. Nabarro, Executive Director, DGO
Dr A. Asamoa-Baah, EXD/EGB
Mr Maryan Baquerot, EXD/GMG
Dr D. Heymann, EXD/CDS
Dr Johanna Larusdottir, Director EHA
Ms H. Wild, Director, FNS

HTP cluster

Dr Y. Suzuki, EXD/HTP
Dr D. Tarantola, Director, V&B
Dr B. Aylward, V&B/Polio
Dr J. Bilous, Coordinator, EPI
Dr M. Birmingham, Coordinator, VAM
Mr F. Caillette
Dr E. de Gourville, VAM
Mr H. Everts, EPI
Dr D. Featherstone, VAM
Dr J. Fournier, ATT
Dr S. Lambert, QSB
Mr C. Maher, V&B/Polio
Ms M. Mailhot
Dr J. Milstien, Coordinator, ATT
Ms L. Muller, V&B/Polio
Dr B. Nkowane, EPI
Dr J.-M. Olivé, EPI
Dr R. Sutter, VAM
Dr R. Tangermann, EPI
Mr C. Wolff, VAM
Dr D. Wood, QSB

The Department of Vaccines and Biologicals was established by the World Health Organization in 1998 to operate within the Cluster of Health Technologies and Pharmaceuticals. The Department's major goal is the achievement of a world in which all people at risk are protected against vaccine-preventable diseases.

Five groups implement its strategy, which starts with the establishment and maintenance of norms and standards, focusing on major vaccine and technology issues, and ends with implementation and guidance for immunization services. The work of the groups is outlined below.

The *Quality Assurance and Safety of Biologicals team* team ensures the quality and safety of vaccines and other biological medicines through the development and establishment of global norms and standards.

The *Initiative for Vaccine Research* and its three teams involved in viral, bacterial and parasitic diseases coordinate and facilitate research and development of new vaccines and immunization-related technologies.

The *Vaccine Assessment and Monitoring team* assesses strategies and activities for reducing morbidity and mortality caused by vaccine-preventable diseases.

The *Access to Technologies team* endeavours to reduce financial and technical barriers to the introduction of new and established vaccines and immunization-related technologies.

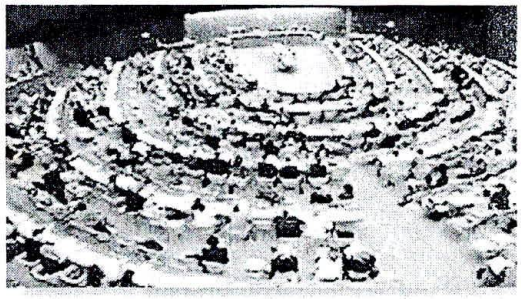
The *Expanded Programme on Immunization* develops policies and strategies for maximizing the use of vaccines of public health importance and their delivery. It supports the WHO regions and countries in acquiring the skills, competence and infrastructure needed for implementing these policies and strategies and for achieving disease control and/or elimination and eradication objectives.

Department of Vaccines and Biologicals

Health Technology and Pharmaceuticals
World Health Organization
CH-1211 Geneva 27
Switzerland
Fax: +41 22 791 4227
Email: vaccines@who.int
or visit our web site at: http://www.who.int/vaccines-documents

WHO

Global Polio Eradication Initiative



WHO/POLIO/02.03; updated January 2002

Certification of global polio eradication

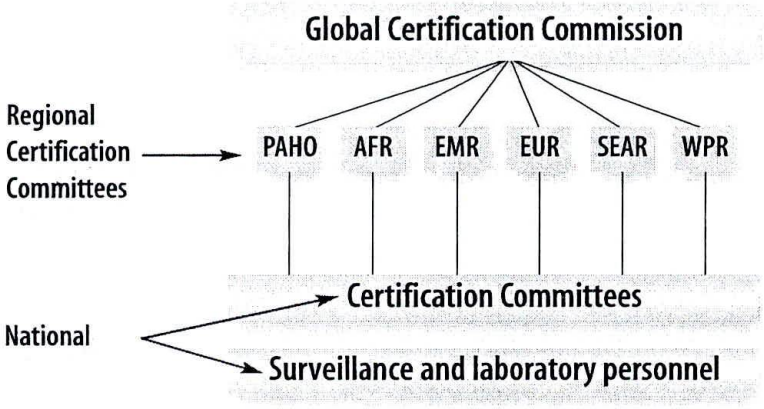
The purpose

"Certification" is the independent verification of wild poliovirus eradication. The Global Polio Eradication Initiative aims to certify the world polio-free by the end of 2005. Certification of global polio eradication will be possible only when all regions have been certified polio-free and all pre- and post-eradication wild poliovirus containment tasks have been completed (see fact sheet on *Containment of wild poliovirus stocks*). Global certification will be an important milestone in the development of post-eradication immunization policy for polio.

The process

The Global Certification Commission (GCC), established by the Director-General of WHO in 1995, is responsible for setting the process and criteria for certification and ultimately deciding whether to certify global polio eradication. This requires at least three years of zero polio cases due to wild poliovirus in the presence of certification-standard surveillance in all six regions. The GCC also requires all six regions to provide data demonstrating full implementation of the pre- and post-eradication containment activities outlined in the *WHO global action plan for the containment of wild polioviruses*[1] prior to global certification.

The process for certification of global polio eradication



In contrast to individual countries being certified free of smallpox, an entire WHO region must be certified polio-free. For this to happen, every country and area in a region must provide evidence consistent with there being no indigenous wild poliovirus cases for at least three years, under conditions of certification-standard surveillance for the virus. Surveillance for acute flaccid paralysis (AFP) is the gold standard for certification, though other surveillance strategies have been accepted for some countries that have long been polio-free and have high levels of sanitation and strong health systems. The capacity of a country to detect and investigate sufficient AFP cases in the absence of polio demonstrates that the poliovirus would be found if it were present.

This certification documentation is collected and verified by national certification committees (NCCs) and provided to a regional certification commission (RCC), which then decides on the basis of the data whether the region can be certified. The RCCs are independent panels of 8 – 10 internationally recognized experts in public health, epidemiology, virology and/or clinical medicine. The finalization of documentation is a multi-year, iterative process involving dialogue between the NCCs and the RCC. The documentation must also illustrate the capacity to detect, report and respond to "imported" polio cases.

Once a region is certified polio-free, and before global certification can be considered, all countries within the region must maintain certification-standard surveillance and implement post-eradication containment measures.

World Health Organization

1 *WHO global action plan for laboratory containment of wild polioviruses*, WHO/V&B/02.32

Poliovirus importations do not affect certification status if they are dealt with promptly and do not establish prolonged or extensive circulation of poliovirus (e.g. less than one year with limited geographic spread).

After global certification, stopping polio immunization will additionally require that vaccine-derived polioviruses do not continue to circulate and that a global stockpile of vaccine is available if needed (see fact sheet on *Post-eradication immunization policy for poliomyelitis*).

The GCC has highlighted the importance of three acute flaccid paralysis (AFP) performance indicators in particular for demonstrating the interruption of wild poliovirus circulation[2]. Even in the absence of wild poliovirus circulation, surveillance systems should:

- detect at least one case of non-polio AFP per 100 000 population aged less than 15 years annually;
- collect adequate stool specimens from at least 80% of AFP cases; and
- test all specimens at a WHO-accredited laboratory.

2 For certification-standard criteria, see *Report of the second meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis*, Geneva, 1 May 1997, WHO/EPI/GEN/98.03.

The progress

Meeting annually since 1995, the GCC has established the process and criteria for certification as outlined above. Polio-free status has been certified by RCCs in the WHO Region of the Americas in September 1994 and the WHO Western Pacific Region in October 2000. No indigenous wild poliovirus has been found in either region subsequently, validating the process and criteria for certification. As no indigenous wild poliovirus has been isolated under conditions of certification-standard surveillance in any Member State of the WHO European Region since November 1998, that Region is on track for certification in 2002.

The WHO African Region, Eastern Mediterranean Region and South-East Asia Region have made excellent progress toward the target of stopping wild poliovirus circulation by the end of 2002, with only four countries, five countries, and one country reporting confirmed indigenous wild poliovirus circulation, respectively, as of 20 January 2002.

All regions have established RCCs, which report and raise issues to the GCC annually.

The challenges

National certification committees – NCCs must be established in all countries, with UN-supported data collection and verification mechanisms for areas without recognized national governments.

Timely completion of the pre- and post-eradication phases of the *WHO global action plan for laboratory containment of wild polioviruses* – the laboratory containment programme must be accelerated, especially in industrialized countries, if global certification is to be achieved on time (see fact sheet on *Containment of wild poliovirus stocks*).

Surveillance in conflict-affected areas – achieving certification-standard surveillance in areas affected by conflict, particularly parts of Angola, remains a challenge. Certification cannot be achieved until there is confidence that circulation of wild poliovirus in these areas has been stopped.

Sustaining the surveillance infrastructure – this infrastructure will need to be sustained in all countries through global certification and beyond. Thus sufficient financial, human and technical resources will be needed for the foreseeable future to reap the full benefits of polio eradication.

Circulation of vaccine-derived poliovirus (VDPV) – prolonged or extensive VDPV circulation may postpone regional certification (in regions not yet certified) or require re-evaluation of regional certification status (in certified regions). Recognizing that VDPVs can rarely cause polio outbreaks, a process is being developed for verifying the absence of VDPV circulation in the post-eradication era.

Maintaining high polio immunization coverage – it is vital that all countries maintain childhood immunization coverage of more than 80% through routine immunization services, supplementary immunization activities or a combination of both.

Hai Glynis, zou je deze documenten voor mij willen zoeken?

For more information on certification, please contact Dr Rudi Tangermann (WHO/Geneva), Tel: +41 22 791 4358, email tangermannr@who.int

groet,
Nienke

Further reading

Report of the second meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis, Geneva, 1 May 1997, WHO/EPI/GEN/98.03.
Report of the sixth meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis, Washington DC, 28–29 March 2001, WHO/V&B/01.15.
Report of the sixth meeting of the Global Technical Consultative Group for Poliomyelitis Eradication, Geneva, 7–10 May 2001, WHO/V&B/01.32.
WHO global action plan for laboratory containment of wild polioviruses, WHO/V&B/99.32.

WHO/V&B/02.13
ORIGINAL: ENGLISH

Vaccines and Biologicals

Certification of the Global Eradication of Poliomyelitis

Report of the seventh meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis

Geneva, 12 April 2002

World Health Organization

WHO

WHO/V&B/02.13
ORIGINAL: ENGLISH

Vaccines and Biologicals

Certification of the Global Eradication of Poliomyelitis

Report of the seventh meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis

Geneva, 12 April 2002

World Health Organization

The Department of Vaccines and Biologicals thanks the donors whose unspecified financial support has made the production of this document possible.

This document was produced by the
Expanded Programme on Immunization
of the Department of Vaccines and Biologicals

Ordering code: WHO/V&B/02.13
Printed: October 2002

This document is available on the Internet at:
www.who.int/vaccines-documents/

Copies may be requested from:
World Health Organization
Department of Vaccines and Biologicals
CH-1211 Geneva 27, Switzerland
• *Fax:* + 41 22 791 4227 • *Email:* vaccines@who.int •

Contents

Abbreviations

AFP	acute flaccid paralysis
AFR	African Region
AMR	Region of the Americas
AMRO	WHO Regional Office of the Americas
ARCC	African Regional Certification Commission
EPI	Expanded Programme on Immunization
EMR	Eastern Mediterranean Region
EMRCC	Eastern Mediterranean Regional Certification Commission
EUR	European Region
EURCC	European Regional Certification Commission
GCC	Global Commission for the Certification of the Eradication of Poliomyelitis
ICCPE	International Commission for the Certification of Poliomyelitis Eradication from the Americas
ICCPES	International Commission for the Certification of Poliomyelitis Eradication in the South-East Asia Region
IPV	inactivated polio vaccine
NCC	National Certification Committee
PAHO	Pan America Health Organization
RCC	Regional Certification Commission
SEAR	South-East Asia Region
TCG	Technical Consultative Group on global polio eradication
cVDPV	circulating vaccine-derived poliovirus
WHO	World Health Organization
WPR	Western Pacific Region
WPRCC	Western Pacific Regional Certification Commission

1. Introduction

Sir Joseph Smith, the chairman of the Global Commission for the Certification of the Eradication of Poliomyelitis (GCC, the "Commission"), convened the seventh meeting of the GCC on 12 April 2002, in Geneva, Switzerland.

Welcoming members of the GCC on behalf of Dr Gro Harlem Brundtland, Director-General of the World Health Organization (WHO), Dr Daniel Tarantola, Director, Department of Vaccines and Biologicals, expressed his confidence that the GCC would again provide help and guidance to facilitate the successful continuation of the global and regional process towards eventual certification of the interruption of wild poliovirus transmission.

GCC members attending were:

- African Region: Dr Rose Leke, Chair, African Regional Certification Commission (ARCC), Professor F. Nkrumah, Member, African Regional Certification Commission (ARCC);
- Region of the Americas: Dr Carlyle de Macedo, Member, Western Pacific Regional Certification Commission (WPRCC);
- Eastern Mediterranean Region: Dr Mohammed Suleiman Ali Jaffer, Chair, Eastern Mediterranean Regional Certification Commission (EMRCC), Dr A. Deria, Member, Eastern Mediterranean Regional Certification Commission (EMRCC);
- European Region: Sir J. Smith, Chair, European Regional Certification Commission (EURCC) and Chair, Global Certification Commission (GCC); Dr. S. G. Drozdov, Member, European Regional Certification Commission (EURCC);
- South-East Asia Region: Professor Natth, Chair, International Certification Commission for Poliomyelitis Eradication, South-East Asia Region (ICCPES);
- Western Pacific Region: Dr A. Adams, Chair, Western Pacific Regional Certification, Commission (WPRCC), Dr Wang Ke An.

All GCC members had attended the preceding seventh meeting of the Technical Consultative Group (TCG) on global polio eradication from 9 to 11 April 2002. Presentations and discussions at the TCG meeting had provided GCC members with a comprehensive global and regional overview of the current status of the eradication initiative, including detailed country-specific information about programme components relevant for certification, such as the quality of acute flaccid paralysis (AFP) surveillance, accuracy of AFP case classification, progress in laboratory containment of wild poliovirus and status of the programme of work towards the development of a post-certification immunization policy. The GCC concurs with all TCG recommendations related to the improvement of surveillance.

Based on the detailed technical briefing at the TCG meeting, the Commission focused its agenda on the following certification-specific objectives:

- receive and discuss updates on certification activities in each WHO region, with special emphasis on the European and African regions;
- discuss the increasing importance of laboratory containment activities, especially the emerging need for validating containment, and to align certification and containment efforts more closely;
- consider the possible implications of new information on circulating vaccine-derived polioviruses for the certification process; and
- discuss issues related to GCC membership.

2. Region of the Americas

The GCC notes that progress is being made with respect to several March 2001 GCC decisions related to the Region of the Americas (AMR). Surveillance quality overall seems to have been maintained during 2001 compared to 2000; however, both AFP rates and stool collection completeness still show considerable variation by country, and within large countries (e.g. Brazil). Haiti – where the last known cVDPV case had onset of paralysis in July 2001 – did not to reach certification-standard AFP surveillance quality in 2001.

During its 2001 meeting, the GCC had urged all WHO regions to assure that, prior to global certification, updated country level data be examined and verified by an independent regional mechanism, preferably regional commissions for the certification of polio eradication (RCCs). The GCC had recommended that regions should consider maintaining regional and national certification bodies beyond regional certification; both the Western Pacific and European Region are following this recommendation. Neither the Regional Certification Commission nor country-level national certification committees (NCCs) were maintained in the Americas following regional certification in 1994. While the WHO Regional Office for the Americas (AMRO) Secretariat reported on plans to identify and appoint an independent group for verifying regional certification status, such a body has not yet been identified and designated.

Laboratory containment of wild poliovirus had not yet been introduced as a requirement for regional certification of the Americas in 1994. The GCC had requested (March 2001) that a regional plan of action for laboratory containment, based on the global containment plan, be prepared for the Americas, and notes that efforts to implement containment have begun in the Region. The AMRO Secretariat plans to form country-level containment committees and to appoint national containment coordinators in AMR countries; these activities are in an early phase.

Establishment of national containment groups provides an opportunity to have a body at the national level that could also perform duties similar to a National Certification Committee, which were disbanded in AMRO after certification. Therefore, the AMRO Secretariat considers to use these national groups working on laboratory containment, to assess and verify national polio-free status, and relay this information to the regional level, though consideration needs to be given to potential conflict of interest and whether or not these groups will have the relevant expertise to fulfil the certification role. National containment groups are implementing bodies typically composed of members from the laboratory/biosafety community and may not have relevant epidemiological and clinical expertise to re-evaluate the country's polio free status.

GCC decisions:

1. The quality of AFP surveillance in several countries of the Americas (i.e. Haiti, Brazil) is of concern and efforts are needed to assist countries to reach and maintain satisfactory AFP surveillance performance.
2. The GCC continues to be concerned about the limited progress in re-establishing independent regional capacity to verify the maintenance of polio-free status before global certification and reiterates the need to establish such a body.
3. The GCC concurs with the AMRO plan to establish national committees for laboratory containment and to expand the committee's terms of reference, and if necessary membership, to also perform a function similar to national certification committees. However, the exact terms of reference of these groups, in particular their capacity to deal with certification issues and mode of interaction with the regional level, need to be clarified once an independent regional body to verify polio-free status has been formed.
4. The GCC requests the AMRO Secretariat to provide a detailed progress report on the above issues at the next GCC meeting planned for early 2003.

3. European and Western Pacific Regions

European Region (EUR). The European Region is likely to become the third WHO region to be certified as free of indigenous wild poliovirus transmission during the second half of 2002. The 51 EUR Member States had submitted final update documentation on their polio-free status to the RCC/EUR. At its most recent meeting in March 2002 in Copenhagen, the RCC reviewed all available evidence on polio-free status, including the final written country reports, presentations from 16 countries, and a comprehensive data analysis of each of the European Region's six epidemiological zones. The RCC focused on several main issues:

- the evidence for the absence of transmission of indigenous wild poliovirus, including the interval since wild poliovirus was last identified in the country;
- the capacity of the country to identify re-established transmission of wild virus following an importation, and to effectively respond to importations to prevent indigenous transmission;
- progress in laboratory containment, and
- the capacity of countries to sustain polio-free status after certification.

In addition to AFP and virological surveillance data, polio immunization coverage rates, and reported polio cases by year, the RCC also took account of a range of supplementary evidence, including national morbidity and mortality data, and also the status of the national health care system. The RCC requested NCCs to endorse a statement of their rationale for concluding that no transmission of indigenous wild poliovirus had occurred in their countries for the past three years. Following their March 2002 review, the RCC concluded that:

- indigenous wild poliovirus transmission had not been detected in the European Region for more than three years,
- satisfactory progress had been made in laboratory containment,
- spread of wild poliovirus following an importation into polio-free areas of the Region would quickly be detected and responded to, and that
- EUR countries were likely to be able to sustain polio-free status following regional certification.

The RCC/EUR specifically noted that the results of surveillance and immunization response activities conducted in Georgia following the wild poliovirus importation identified during the fourth quarter of 2001 had not yet been fully documented. The RCC expects, however, that Georgia will submit satisfactory evidence to prove that the imported virus had not re-established transmission, and that this evidence will be available in time to allow regional certification to occur in the third quarter of 2002.

The RCC/EUR proposes to follow the practice adopted in the Western Pacific Region of meeting annually after regional certification in order to monitor NCC's reports on their evidence for continued freedom from wild virus transmission, and their further progress in laboratory containment.

Western Pacific Region (WPR). Following certification of the absence of indigenous wild poliovirus in October 2000, the RCC/WPR conducted (in October 2001) the first meeting of an RCC following regional polio-free certification. The RCC/WPR noted the high quality of continued cooperation of countries and NCCs, which continue to function and work effectively in all WPR countries to assure that polio-free status post-regional certification is sustained. Most countries were able to report on continued high-quality surveillance, immunization and laboratory containment activities. The RCC/WPR endorsed several specific recommendations made by the regional technical advisory group on immunization and polio eradication (TAG) towards maintaining high-quality surveillance, following polio-free certification, and specifically on stool specimen transport.

In view of the emergence of a circulating vaccine-derived poliovirus (cVDPV) in the Philippines in 2001, the WPR RCC requested that the potential implications of VDPV circulation for polio-free certification be addressed at the global level.

The GCC notes that, while further progress towards containment occurred in the Western Pacific Region, Australia, China, Japan, Malaysia and the Philippines have not yet completed phase 1 containment activities (national inventory of laboratories holding infectious or potentially infectious material).

GCC decisions:

1. The GCC recognized that activities at country and regional level towards regional certification of the absence of indigenous wild poliovirus transmission in the European Region have been of sufficiently high quality to allow regional certification to occur later this year. The GCC requests, however, that the RCC closely scrutinize final country data from Georgia in their June meeting to assure that the documented importation did not result in re-established indigenous transmission.
2. The GCC commends countries of the Western Pacific Region for their successful efforts to sustain and document polio-free status following regional polio-free certification, and urges all WPR countries that have not yet completed phase 1 laboratory containment activities to reach this important milestone by the end of 2002.

4. Eastern Mediterranean and South-East Asia Regions

Both the Eastern Mediterranean and South-East Asia regions (EMR and SEAR respectively) are still engaged in interrupting transmission in two of the three global "high intensity transmission areas" – the Pakistan/Afghanistan epidemiological block and northern India, as well as in three countries with low intensity transmission, most notably Egypt. The GCC appreciates that international technical advisory groups at global (TCG) and country level (country TAGs) are now regularly reviewing progress and making specific recommendations to accelerate progress towards interrupting transmission, including the strengthening of surveillance.

Certification activities have progressed as planned in both EMR and SEAR, where AFP surveillance quality in 2001 had reached levels commensurate with certification. In most countries this was achieved at both the national and first subnational levels. Designated and functioning National Certification Committees and expert groups for case classification in all countries provide the necessary structure on which formal certification activities can be conducted.

Eastern Mediterranean Region (EMR). Five of the remaining 10 endemic countries are in EMR; however, there is good overall progress towards interrupting transmission in the Region. Increasingly reliable surveillance documents that only few foci of "low intensity transmission" remain in Sudan (South Sudan) and Somalia (Mogadishu area), despite ongoing conflict and complex emergency situations in both countries. Continued improvements of strategy implementation in the Afghanistan/Pakistan epidemiological block further reduced the extent of transmission in these countries during 2001. Events in Afghanistan following the 11 September terrorist attack did not have a significant negative impact on eradication activities in Afghanistan, though it has compromised surveillance quality in some key areas. The situation in Egypt, where the extent of virus transmission was severely underestimated until recently, will require urgent improvements in the quality of surveillance and supplementary immunization.

To date, the RCC/EMR has received and favourably reviewed preliminary national reports from 15 of 23 countries, with preliminary reports pending from 8 countries (including Pakistan). The RCC/EMR has prepared a special abbreviated format for annual update reports from NCCs to the RCC; this format was used for annual update reports submitted from eight countries of which three (Oman, Saudi Arabia and Tunisia) included a preliminary report on laboratory containment. In March 2002, a meeting was conducted to update and brief chairs of EMR national certification committees and national expert review groups on the current status of polio eradication, focusing on issues relevant for certification, surveillance and accuracy of AFP case classification.

South-East Asia Region (SEAR). India is the only remaining endemic country in the Region. With certification-quality AFP surveillance during 2001 in all other SEAR countries, transmission is likely to be interrupted in these areas, most notably in Bangladesh (last wild virus in mid-2000).

Even though the total number of cases reported from India did not decrease between 2000 and 2001, there was a marked reduction in both the geographic extent of transmission (50% reduction in the number of endemic districts) and the biodiversity of circulating virus lineages (from 8 to 3). Only parts of the northern Indian states of Uttar Pradesh and Bihar were endemic in 2001.

Of particular relevance for certification, the timeliness and accuracy of AFP case classification through the Indian national expert review committee has met international standards. Through appropriate application of the virological case classification and specifically the polio-compatible concept, the India programme identifies and collects additional information on polio-compatible cases within three months of paralysis onset. High-quality clinical follow-up data is collected for virtually all cases with inadequate specimens. As India moves toward a wild-virus free status, the practice of thorough follow-up and scrutiny of polio-compatible cases will lead to more accurate final case classification and allow increased confidence in having interrupted wild virus transmission in all parts of the country.

The RCC/SEAR has met most recently in March 2002 and reviewed preliminary national reports from eight countries and update reports from two (Sri Lanka and Thailand) of 10 countries in the Region. NCCs in all SEAR countries have now collected basic data on polio activities, largely based on the draft format proposed by WHO. However, there is still more work needed to ensure the completeness of the required data and to further develop the database of essential national documentation. The SEAR/RCC noted that the highest priority must currently be afforded to achieving the objective of eradicating all foci of wild poliovirus transmission in India. This priority far outweighed all other activities related to polio eradication and its certification in SEAR. The SEAR/RCC will meet again in September 2003.

GCC decisions:

1. The GCC concurs with recent recommendations made by the global TCG and country TAGs that accelerated efforts towards interrupting wild poliovirus transmission in the remaining endemic countries of EMR and in India should receive the highest priority.
2. The GCC encourages both RCCs and the WHO Secretariat to increasingly coordinate certification activities between EMR and SEAR, through cross-attendance at meetings and the ongoing informal exchange of information.

5. African Region

Compared to other WHO regions, eradication and certification activities commenced most recently in the African Region (AFR). However, significant progress towards interrupting wild virus transmission and establishing reliable surveillance is being made in the remaining endemic countries of the Region, notably in the Democratic Republic of Congo, Ethiopia, Nigeria, and in large parts of West Africa. The GCC specifically commends the continued high level of political support for polio eradication in a number of African countries.

However, the implementation of eradication strategies, particularly high-quality AFP surveillance and accurate AFP case classification, and the certification process, face a number of specific challenges in AFR.

The GCC noted the AFR/RCCs substantial concern about:

- the challenges to interrupting transmission in Nigeria;
- continued low performance of routine immunization systems;
- weak cross-border coordination, especially of supplementary immunization activities;
- the need to urgently improve surveillance in several countries of the southern block (i.e. Madagascar, Mozambique, South Africa); and
- recent evidence suggesting that an important focus of ongoing virus transmission may have been missed in Western Africa (Mauritania and surrounding countries) through suboptimal surveillance and response.

Since the March 2001 meeting of the GCC, national certification committees and national expert committees (NECs) for case classification have been appointed in 41 of 46 AFR countries. At three intercountry meetings attended by members of the AFR/RCC, NCC and NEC chairs of 37 of 41 countries were oriented to polio eradication and the process of RCC review of country documentation. The meeting was held with assistance from WHO/HQ, WHO/EUR and WHO/WPR.

Progress in certification in the African Region has been more difficult than anticipated. Challenges include:

- several countries (Algeria, Equatorial Guinea, Mauritania and Sierra Leone) have not yet nominated NCCs and a NEC;
- in more than half of the 37 countries where the NCC chairs had participated in regional orientation meetings, other NCC members have not yet been briefed in turn;

- other difficulties to make designated committees fully functional, such as insufficient support for NCCs locally (inadequate administrative support, problems in making meeting per diems available);
- limited administrative and technical staff support at AFRO to conduct the required multicountry meetings.

The RCC/AFR is concerned that the importance of certification is not yet fully acknowledged by a number of countries, negatively affecting implementation of the certification process.

GCC decisions:

1. The GCC requests WHO to urgently strengthen the managerial and administrative support necessary for efficient implementation of the certification process in member states of the African Region.
2. Recognizing the large number of recently endemic countries in the Region, certification activities in Africa should continue to be the first priority for receiving technical support from WHO staff with certification experience (e.g. PAHO, WPRO, WHO/HQ).
3. The RCC/AFR should request AFRO to assure that, by the end of 2002, NCCs are designated and made functional in all countries, with completion of the orientation of all NCC chairs and members.
4. The GCC is concerned about the lack of progress towards revitalizing AFP surveillance in Madagascar and other countries of southern Africa, and fully endorses the global TCG's recommendations in this regard.

6. Laboratory containment

The GCC notes that progress is being made in all regions towards laboratory containment, particularly in the European and Western Pacific regions. As part of the pre-certification phase of containment, more than 80 000 laboratories worldwide (in all regions except AFR) are now listed in national registers of bio-medical laboratories to be surveyed, and more than 50% of these laboratories have already responded to the survey. To date, 450 laboratories worldwide have been identified as having wild poliovirus infectious material. Guidelines for containment in inactived polio vaccine (IPV) production facilities have been drafted, and will be published during the first half of 2002.

RCCs reported progress in many countries towards closer aligning and coordinating certification and containment activities at the national level. However, progress in several regions (AMR) was not as fast as had been expected (see regional sections above). The GCC is concerned that, although regional and national certification groups are now expected to coordinate certification and containment efforts more closely, the actual reporting requirements on containment are not clear.

The GCC appreciates that the second edition of the global action plan for laboratory containment will better define several key issues relevant for effective laboratory containment, and therefore for certification, most notably:

- the biosafety requirements for wild poliovirus infectious and potentially infectious materials, depending on risk assessments,
- the need for containment of vaccine-derived polioviruses, and
- better definition of storage conditions.

The second draft of the global plan also highlights the fact that specific recommendations on containment for the post-certification era can only be made following decisions on post-certification policy.

The GCC encourages the ongoing efforts to develop methods to confirm and validate laboratory containment achievements and notes that consideration is given to form technical groups to facilitate national validation efforts.

GCC decisions:

1. The updated version of the global plan for laboratory containment of wild polioviruses should be finalized, published and made available to the GCC and RCCs as soon as possible.
2. The GCC urges the Secretariat to review containment documentation needs at national and regional level, and to continue efforts to develop methods for national authorities to validate reported containment achievements. The GCC requests the Secretariat to report on the proposed validation methods, including the development of relevant guidelines, during the next GCC meeting.
3. Regional certification commissions, in consultation with WHO regional secretariats, should consider the potential value of RCC subcommittees on laboratory containment to work more closely with biosafety oversight groups active in large countries and at the regional level.

7. The GCC mandate and circulating vaccine-derived poliovirus (cVPDV)

Noting the additional information and data on cVDPV presented during the April 2002 meeting of the global TCG, the GCC acknowledges that further progress was made in understanding cVDPV and the possible implications of cVDPV for the global eradication effort. The global polio laboratory network has agreed on standard nomenclature to categorize VDPVs and has established special screening methods to improve the sensitivity of existing laboratory surveillance to assure the timely detection and characterization of VDPV. Of note, all cVDPVs found to date showed recombinations with non-polio enteroviruses in the non-structural region of the virus, a possible marker to facilitate the detection of cVDPV.

The GCC further notes progress in other research to better define the epidemiology and duration of shedding of Sabin viruses following immunization campaigns. In addition to ongoing research studies in Cuba, the programme has begun to analyse data derived from AFP surveillance to study patterns of Sabin virus isolation in relation to supplemental immunization activities (SIAs). Preliminary results using data from India suggest that Sabin virus is not shed for more than four weeks following campaigns. Final results of this work will become available within a year.

Prospective screening and retrospective analysis of more than 3400 SABIN isolates from AFP cases reported since 1999 from all WHO regions is consistent with the assumption that the circulation of neurovirulent VDPV is a very rare event. Despite the considerable increase in surveillance sensitivity, cVPDV has not been found again since the detection of cVDPV in 3 children in the Philippines between March and September 2001. Sensitive AFP surveillance in Haiti, the Dominican Republic and the Philippines indicates that cVPDV transmission in all three countries was interrupted through well-implemented supplementary immunization campaigns with oral polio vaccine (OPV).

The GCC, during its 2001 meeting, reaffirmed that the objective of its activities, as outlined in the report of the first meeting of the GCC in May 1995, is to certify the global interruption of the transmission of wild polioviruses. An additional prerequisite for global certification – the need to complete the laboratory containment process – was added in 1997. The GCC had noted in 2001 that the full benefits of eradication will only be realized in the absence of cVDPV, and that the potential implications of cVDPV for the certification process must remain under review. The GCC had urged WHO to continue its research on cVDPV, taking account of the need for methods to verify the absence of VDPV.

GCC decisions:

1. The GCC reaffirms its 2001 decision to encourage WHO to continue its work to understand cVDPV, to improve surveillance sensitivity for cVDPV, and to create a mechanism to verify cVDPV absence after the certification of wild poliovirus eradication.
2. While acknowledging the need to verify the absence of cVDPV once the eradication of wild poliovirus has been certified globally, the GCC re-emphasizes that the main objective of its work remains the certification, when and if appropriate, of the interruption of wild poliovirus transmission globally.
3. In view of currently available data on cVDPV and the probable rarity of cVDPV emergence, the GCC considers it premature to discuss an expansion of its own mandate to also include verification of the absence of cVDPV following certification of wild poliovirus eradication. This verification task may well be accomplished through another mechanism and by another group.

8. GCC membership and operating procedures

The GCC noted the importance of the independence of all experts serving on WHO technical advisory groups and oversight bodies. The GCC has previously discussed the issue of potential conflicts of interest among its members and in one of its 2001 decisions, stressed the need for independence of certification bodies at global and regional level. Specifically, GCC and RCC members should remain separate from the implementation of polio eradication activities, but can participate in activities such as country visits to review the status of polio eradication and to promote certification activities.

The GCC noted that the overlap of membership between regional and global commissions (all RCC chairmen are also GCC members) had proved very useful for its work. The only potential conflict of interest that may arise from this cross-membership would be in relation to the certification of a region. However, several GCC members also serve on other polio eradication-related technical advisory groups at global, regional and national level, with direct influence on programmatic activities. These groups include the global TCG, WHO's global steering committee on polio research, as well as regional and national TAGs, with differing terms of reference.

Cross-membership of GCC (or RCC) members on technical consultative Groups (global or regional level) or technical advisory groups (TAGs) may be perceived as incompatible with the strict assessment function of a certification group. Although TCGs and TAGs are not actually implementing the programme, both exert a direct influence on programme implementation as their advice and guidance is directly translated into programmatic action.

The GCC also noted that the Commission has not been able to work with the full number of members (13) originally designated by the Director-General of WHO, as two members had been unable to attend meetings for several years. At the same time, the GCC believes it could benefit from enhanced expertise for some technical areas of the GCC's work (i.e. laboratory containment, emergence of cVDPV). The group discussed the value of appointing additional members with expertise in enterovirology, molecular biology and biosafety in particular.

In discussing the issue of reporting needs from RCCs to the GCC, the Commission noted that such reporting requirements had not yet been standardized, for either certified regions or those yet to be certified. RCCs are also requesting more detailed guidelines on the reporting of progress in laboratory containment, in particular from country level (NCCs or containment task forces).

GCC decisions:

1. The WHO Secretariat should review for the GCC the cross-appointments of GCC members in polio eradication technical oversight bodies to identify potential conflicts of interest. The Secretariat should develop a matrix listing names, structure, roles and objectives of all relevant polio eradication committees and groups to facilitate future GCC deliberations on this issue. Any new GCC members should not be members of technical oversight groups.
2. Dual membership in a regional and the global certification commission does not constitute a conflict of interest, provided that GCC members from a particular region abstain from voting on issues related to polio-free certification of their own region.
3. Recognizing that only 10 of the original GCC members are currently fully active in the work of the Commission, the GCC reiterated the importance of ensuring a full complement of at least 13 active members representing all WHO regions. The GCC concurred that the Commission should continue to have two representatives from each WHO region (ideally including the RCC chairperson), with the origin of the 13th member at the discretion of the Director-General of WHO. Given that some members may not be able to fully carry out their duties, the GCC Chair should use a set of "attendance rules" to discuss future participation with any member who should miss three consecutive meetings.
4. In appointing new members, the GCC requests that the Director-General of WHO give consideration to the geographic knowledge and/or specific technical expertise of a candidate for GCC membership. Areas of expertise to consider are virology (especially enterovirology), molecular biology and biosafety. Also, as much as possible, the gender balance of the Commission should be addressed. GCC members are able to provide names of potential candidate GCC members for the consideration of DG/WHO.
5. The GCC further recognizes the need to summarize, in a single document, the GCC Terms of Reference, membership issues, role of the WHO Secretariat, and operating principles (including relationship to RCCs), with a special focus on standardizing annual reporting requirements from RCCs to the GCC before and after regional certification. It is suggested that this document be compiled by the Secretariat, then reviewed and updated by the Commission as a standing agenda item at future meetings. The updated document could then serve as an Annex to all future reports of the Commission, superseding any previous documents.
6. Annual GCC meetings should be convened as dedicated 2-day meetings, potentially at WHO regional offices, to provide appropriate support to regional and national certification efforts. The next meeting of the GCC should be conducted in early 2003 in the African Region. GCC members should also continue to have the opportunity to follow the deliberations of the global TCG on polio eradication.

Annex 1: Agenda

08:45–09:00	Opening Administrative remarks	
09:00–10:30	Status of 2001 GCC decisions and issues arising from the WHO meeting of certification focal points (Dec 2001)	WHO/HQ
	Discussion points: • GCC mandate with respect to VDPVs • GCC cross-membership in technical oversight bodies • Selection of new GCC members	
10:30–11:00	*Coffee break*	
11:00–12:30	RCC reports – EUR, SEAR, EMR, WPR and AMR	RCC Chairpersons
12:30–14:00	*Lunch*	
14:00–14:30	RCC report: AFR, with special focus on the certification process in the WHO Region for Africa	RCC Chairperson
14:30–15:30	Issues arising from the seventh TCG meeting	GCC Members
	Discussion points: • GCC capacity to validate laboratory containment • Proposed GCC and RCC activities through mid-2003	
15:30–16:00	*Coffee break*	
16:00–17:00	Finalization of decisions of the seventh GCC meeting	GCC Chairperson
17:00	**Closing**	

Annex 2: List of participants

Global Commission for the Certification of the Eradication of Poliomyelitis

Professor A Adams, National Centre for Epidemiology and Population Health, Australian National University, Canberra, ACT 0200, Australia

Dr A Deria, 28 Claudia Place, Augustus Road, London, GB-SW19 6ES, UK

Professor SG Drozdov, Institute of Poliomyelitis and Viral Encephalitis of the Academy of Medical Science of the Russian Federation, Moscow 142782, Russian Federation

* Professor Jan Kostrzewski, Department of Epidemiology, National Institute of Hygiene, 24 Chocimska Street, PL-00-791 Warsaw, Poland

Dr R Leke, Department of Immunology and Microbiology, Faculty of Medicine, University of Yaoundé, Yaoundé, Cameroon

Dr C de Macedo, SMDB Conjunto 01 Casa 05, Lago Sul, Brasilia, DF 71680-010, Brazil

Professor Nath Bhamarapravati, Center for Vaccine Development, Institute of Sciences & Technology for Development, Mahidol University at Salaya, Nakhonchaisri, Nakhonpathom 73170, Thailand

Professor FK Nkrumah, Noguchi Memorial Institute for Medical Research (NMIMR), University of Ghana, PO Box LG 581, Legon, Ghana

* Dr FC Robbins, Department of Epidemiology and Biostatistics, School of Medicine, Case Western University, 10900 Euclid Avenue, Cleveland, OH 44106-4945, USA

Sir J Smith, 95 Lofting Road, Islington, London, GB-N1 1JF, UK

Dr Wang Ke-An, Chinese Academy of Preventive Medicine (CAPM), 27 Nanwei Road, Beijing 100050, People's Republic of China

Dr Mohammed Suleiman Ali Jaffer, Ministry of Health, PO Box 393, Muscat, Sultanate of Oman

* Unable to attend.

WHO Secretariat

Regional offices

Regional Office for Africa (AFRO)
Dr S Okiror

Regional Office for the Americas (AMRO)
Dr M Landaverde

Regional Office for the Eastern Mediterranean (EMRO)
Dr MH Wahdan

Regional Office for Europe (EURO)
Dr G Oblapenko

Regional Office for South East Asia (SEARO)
Dr Arun Thapa

Regional Office for the Western Pacific (WPRO)
Dr S Roesel

WHO headquarters
Geneva, Switzerland

Dr D Tarantola, Director, Department of Vaccines and Biologicals (V&B)
Dr B Aylward, Polio Eradication Group (PEG), V&B
Dr Esther de Gourville, Vaccine Assessment and Monitoring (VAM), V&B
Dr R Tangermann, PEG/V&B
Dr C Wolff, VAM/V&B

The Department of Vaccines and Biologicals was established by the World Health Organization in 1998 to operate within the Cluster of Health Technologies and Pharmaceuticals. The Department's major goal is the achievement of a world in which all people at risk are protected against vaccine-preventable diseases.

Five groups implement its strategy, which starts with the establishment and maintenance of norms and standards, focusing on major vaccine and technology issues, and ends with implementation and guidance for immunization services. The work of the groups is outlined below.

The *Quality Assurance and Safety of Biologicals team* team ensures the quality and safety of vaccines and other biological medicines through the development and establishment of global norms and standards.

The *Initiative for Vaccine Research* and its three teams involved in viral, bacterial and parasitic diseases coordinate and facilitate research and development of new vaccines and immunization-related technologies.

The *Vaccine Assessment and Monitoring team* assesses strategies and activities for reducing morbidity and mortality caused by vaccine-preventable diseases.

The *Access to Technologies team* endeavours to reduce financial and technical barriers to the introduction of new and established vaccines and immunization-related technologies.

The *Expanded Programme on Immunization* develops policies and strategies for maximizing the use of vaccines of public health importance and their delivery. It supports the WHO regions and countries in acquiring the skills, competence and infrastructure needed for implementing these policies and strategies and for achieving disease control and/or elimination and eradication objectives.

Department of Vaccines and Biologicals

Health Technology and Pharmaceuticals
World Health Organization
CH-1211 Geneva 27
Switzerland
Fax: +41 22 791 4227
Email: vaccines@who.int
or visit our web site at: http://www.who.int/vaccines-documents

WHO

WHO/Polio/00.05
Distr.: General

Global Polio Eradication Initiative

Strategic Plan 2001 – 2005

Department of Vaccines & Biologicals

World Health Organization
2000

Table of contents

3. **Acute flaccid paralysis (AFP) surveillance and laboratory investigation:** AFP surveillance is established in all polio-endemic or recently endemic countries to ensure that all cases of poliomyelitis are detected. The goal of AFP surveillance is to report and investigate "any case of acute flaccid (floppy) paralysis, including Guillain-Barré Syndrome, in a child aged less than 15 years and any case of suspected polio in persons of any age". A number of indicators have been established to monitor the performance of AFP surveillance systems. Most importantly, even in the absence of wild poliovirus circulation, surveillance systems should be capable of (1) detecting at least one case of AFP per 100 000 population aged less than 15 years; (2) collecting adequate stool specimens from at least 80% of AFP cases, and (3) testing all specimens at a WHO-accredited laboratory.

   An international laboratory network has now been established under the auspices of WHO, consisting of national laboratories which undertake virus isolation and identification, regional reference laboratories which differentiate wild and vaccine viruses, and specialized reference laboratories which support the network and conduct genetic sequencing studies on wild viruses to assist the identification of routes of transmission. All network laboratories must successfully complete an accreditation process and use established indicators to monitor their performance.

4. **Mop-up campaigns:** AFP surveillance data are used to identify the final chains of wild poliovirus transmission in each geographical area. In these areas, two doses of OPV are administered to all children aged less than five years, regardless of their prior immunization status, by immunization teams that go house-to-house. These intensive immunization campaigns improve coverage and ensure that the most difficult-to-reach children are immunized, thereby interrupting the last chains of wild poliovirus transmission. In addition to delivering supplemental OPV doses, mop-up activities often include an active search for AFP cases.

4. Implementation of the Strategic Plan: challenges and solutions

Full implementation of the five main components outlined in the Strategic Plan 2001–2005 will be a challenge. Key challenges to implementation and possible solutions that partners in the eradication initiative can bring to bear are summarized below. In particular, advocacy for polio eradication is required at the global and country level to surmount challenges, ensure sufficient resources are available to all countries, maintain political support, and secure societal support.

4.1 Major challenges

Securing access to all children, especially those in conflict-affected countries

The success of the UN Secretary-General and other global and national-level authorities in establishing access, cease-fires, and "Days of Tranquillity" for NIDs in Afghanistan, Democratic Republic of the Congo, Peru and elsewhere has demonstrated the feasibility of working successfully in conflict-affected areas. These efforts must be expanded, drawing upon the strengths of the UN Secretary-General's office, many UN agencies, the International Red Cross and Red Crescent movement, and other new and existing partners who can operate in countries affected by conflict.

Ensuring adequate financial resources from the public and private sectors

Necessary financial resources must be secured to purchase OPV, plan and implement NIDs, SNIDs and mop-up campaigns (e.g. hiring and deploying all necessary national and international staff, transportation, social mobilization, communications), and cover surveillance and laboratory costs. To ensure sufficient resources, advocacy for the Global Polio Eradication Initiative is required at the global and country levels. Thus far, the Global Polio Eradication Initiative has been mainly dependent on multilateral funding mechanisms and Rotary International, and, more recently, on foundation funding. From 2001 to 2005, stronger efforts will be undertaken to increase public and private sector support for the eradication activities of polio-endemic countries. In particular, bilateral support for the eradication activities of the ten global priority countries (Afghanistan, Angola, Bangladesh, Democratic Republic of the Congo, Ethiopia, India, Nigeria, Pakistan, Somalia and Sudan) will be critical to success.

Maintaining political commitment in all countries

Sustaining political commitment from the highest levels of government is particularly challenging in the face of a disappearing disease, but remains key to ensuring high-quality activities in both polio-endemic and polio-free countries. Some polio-endemic countries plan to stop NIDs despite having surveillance below certification standard. Experience has conclusively demonstrated that such actions jeopardize progress because low-level poliovirus transmission can continue undetected for years in areas with suboptimal surveillance. Political commitment, particularly monitoring by the head of state of the progress towards eradication, is key to:

- Improve the quality of NIDs and other SIAs so that house-to-house immunization activities reach all children by, for example, enlisting multisectoral support.
- Implement early and aggressive use of extensive mop-up campaigns.
- Improve or maintain the quality of AFP surveillance.
- Improve or maintain routine immunization coverage.

Improving social mobilization

Markedly enhanced social mobilization efforts will be essential to improving NIDs/SNIDs/mop-up quality. Social mobilization efforts will enlist key community networks and leaders – such as religious organizations and women's groups – to ensure that appropriate messages are developed and delivered to the target population. Multifaceted mechanisms will be enlisted to transmit messages, including use of the media (print, radio and television), banners, posters, and megaphones. Additional staff will be enlisted to support these activities.

Communicating the progress of the Global Polio Eradication Initiative

Effective communication is an essential element for all of the components of this Strategic Plan. Communication issues include meetings to ensure exchange of experience and information (e.g. between EPI programme managers and laboratory directors); technical policy meetings held annually to review progress and further develop policies within the global initiative; media coverage for public awareness and advocacy, and newsletters for feedback to all health staff. ❐

Eradication Initiative at the global level. Financial donors at the global level of the initiative include:

- **Foundations:**
  - Rotary Foundation
  - Bill & Melinda Gates Foundation
  - United Nations Foundation
  - Organization of the Petroleum Exporting Countries (OPEC) Foundation
- **Corporations:**
  - Aventis Pasteur
  - De Beers
  - International Federation of Pharmaceutical Manufacturers Association (IFPMA), representing Pasteur Mérieux Connaught (now Aventis Pasteur), Chiron, Smith-Kline Beecham, and Wyeth-Lederle.
- **Multilateral agencies:**
  - European Union
  - World Bank

Nongovernmental organizations (NGOs), and humanitarian organizations such as the International Red Cross and Red Crescent movement, Médecins San Frontières (MSF), Save the Children Fund, World Vision, CARE, and the umbrella-organization CORE, are also key partners, particularly through assisting with microplanning, training, transport, surveillance and administration of supplementary immunization. Many NGOs play a unique role in accessing children in hard-to-reach areas, such as in conflict-affected countries.

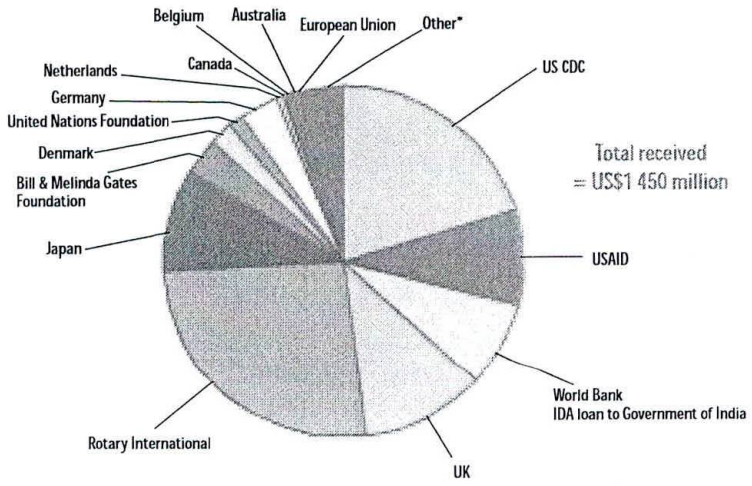
Additional partner organizations play critical roles at the regional and country levels to support polio eradication. Of particular note is the Micronutrient Initiative of Canada whose support includes ensuring administration of vitamin A capsules during NIDs and development of training materials. UN funds, agencies, and programmes such as the World Food Programme, United Nations High Commissioner for Refugees, United Nations Office for the Coordination of Humanitarian Affairs and Operation Lifeline Sudan, have been key to implementing SIAs. Specific activities of these partner organizations include:

- Participation in ICCs at country, regional, and global levels.
- Provision of financial and human resources.
- Technical support.
- Strategy implementation at country level through, for example, volunteers for social mobilization and NIDs, transportation, and communications.

Civil society advocates and special ambassadors: leading celebrities from the arts, sciences, entertainment, and sports fields provide their personal talents to increase the profile of the eradication initiative. Key advocates for the polio eradication initiative include UNICEF Special Representatives Ms Mia Farrow, Ms Claudia Schiffer, WHO Goodwill Ambassador Ms Martina Hingis, basketball star Mr Dikembe Mutombo, renowned photographer Lord Snowdon and the Federation Internationale de Football Association (FIFA).

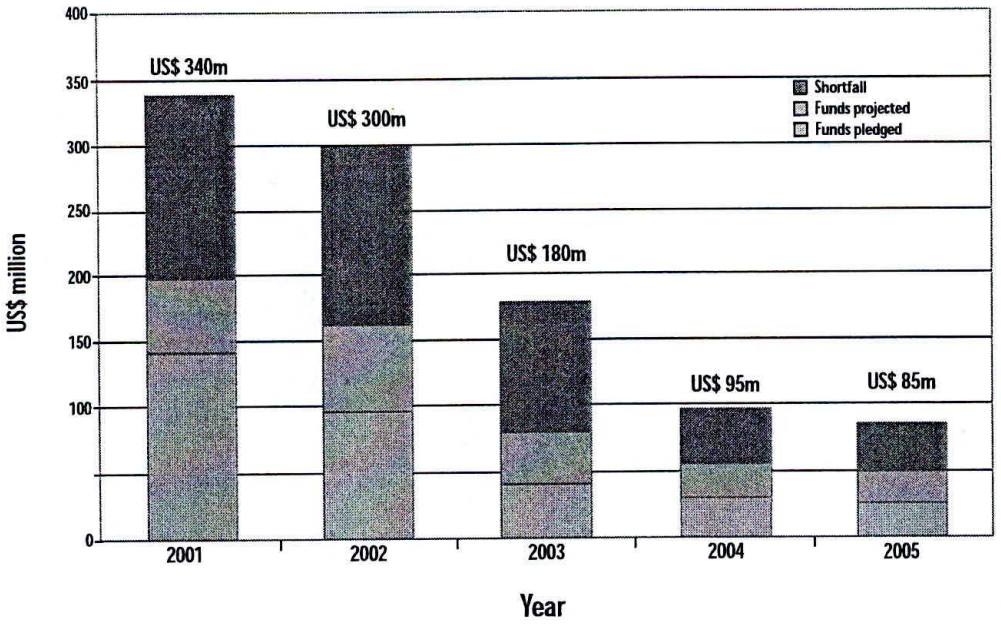
Financial resources provided have supported all aspects of the initiative, including planning of national polio eradication activities, social mobilization and training; strengthening of laboratory capacity; and review meetings and evaluations. ❐

Figure 4: **Past contributions received, 1985-2000**



* Other includes past contributions from the Agency for Cooperation in International Health (Japan); American Association for World Health (USA); Aventis Pasteur; Custom Monoclonals International (USA); De Beers; Finland; Institut Mérieux; Ms Martina Hingis; Italy; Japanese Committee for "Vaccines for the World's Children"; Malaysia; Millennium Fund; Norway; Portugal; Republic of Korea; Smith-Kline Biologicals; Switzerland; United Arab Emirates; WHO Casual Income; WHO and UNICEF Regular Budget.

Figure 6: **Status of financial resource requirements by year**

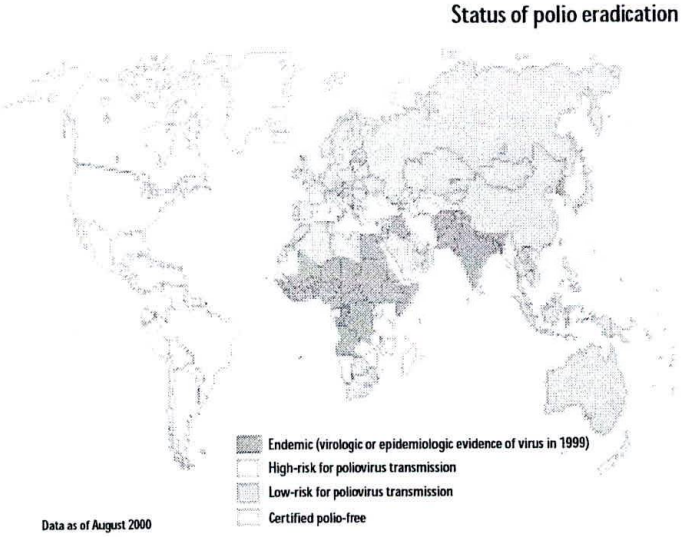


Annex 1: Priority actions by countries according to status of polio eradication

Endemic countries (30 countries at end of year 1999)

Definition: countries with virological and/or epidemiological evidence of endemic poliovirus circulation during the past 12 months.

Priorities:
- Intensify NIDs and conduct mop-up campaigns every year until poliovirus transmission is interrupted.
- Improve surveillance to accurately target NIDs and mop-up campaigns.
- Strengthen routine immunization activities.



Recently endemic/high-risk countries (25 countries at end of year 1999)

Definition: countries with no polio detected for > 1 year, but at high risk of ongoing low-level indigenous virus or sustained transmission of imported virus due to: (1) geographic proximity to an endemic country, (2) low routine immunization coverage, and/or (3) inadequate surveillance.

Priorities:
- Maintain NIDs (or SNIDs if low routine coverage is limited to specific areas).
- Establish certification-standard surveillance.
- Conduct inventory of laboratory stocks for containment purposes.
- Strengthen routine immunization services.

Low-risk countries (101 countries at end of year 1999)

Definition: countries with no polio detected for > 1 year and at low risk of indigenous virus or sustained transmission of imported virus due to (1) high routine immunization coverage; (2) lack of proximity to endemic countries; and/or (3) maintenance of high-quality surveillance.

Priorities:
- Achieve/maintain certification-standard surveillance.
- Inventory laboratory stocks for containment purposes.
- Strengthen routine immunization services.
- Conduct polio supplementary immunization activities in areas of low coverage.

Countries certified polio-free (36 countries at end of year 1999)

Definition: countries certified polio-free by a regional certification commission (only AMR as of 15 August 2000).

Priorities:
- Contain laboratory stocks of polioviruses.
- Maintain certification-standard surveillance.
- Strengthen routine immunization services.
- Consider polio supplementary immunization activities in areas of low coverage.

Section 2: **Recently endemic/high-risk countries:* number of NIDs rounds (unless SNIDs specified)**

	2000	2001	2002	2003	2004	2005
AFR						
Burundi	2	2	SNIDs	SNIDs	-	-
Eq. Guinea	2	2	2	SNIDs	-	-
Gabon	2	2	2	2	2	2
Gambia	2	2	SNIDs	-	-	-
Kenya	2	2	SNIDs	SNIDs	-	-
Madagascar	-	2	SNIDs	-	-	-
Malawi	-	2	SNIDs	-	-	-
Mauritania	2	2	SNIDs	-	-	-
Mozambique	-	2	2	2	-	-
Namibia	2	2	2	-	-	-
Rwanda	-	2	SNIDs	SNIDs	-	-
Senegal	2	2	SNIDs	-	-	-
Tanzania	SNIDs	2	SNIDs	SNIDs	-	-
Uganda	SNIDs	2	SNIDs	SNIDs	-	-
Zambia	-	2	SNIDs	SNIDs	-	-
Zimbabwe	-	2	SNIDs	-	-	-
EMR						
Djibouti	2	2	2	-	-	-
Iran	SNIDs	SNIDs	SNIDs	SNIDs	-	-
Yemen	2	2	SNIDs	-	-	-
EUR						
Tajikistan	2	2	2	-	-	-
Turkey	2	SNIDs	SNIDs	SNIDs-	-	-
Turkmenistan	2	2	2			
Uzbekistan	2	2	2	-	-	-
SEAR						
Myanmar	2+SNIDs	2	2	SNIDs	SNIDs	SNIDs
Sri Lanka	2	2	SNIDs	SNIDs		

Section 3: **Low-risk and certified countries***

Many low-risk and certified countries must continue to guard against polio importations by conducting SIAs, either full NIDs or SNIDs. For example, virtually all certified countries of AMR are planning to continue full NIDs through 2005, the target date for global certification. Similarly, the Global TCG stated that NIDs must be continued in all countries recently endemic for polio. Discontinuation of NIDs should only be considered in countries with OPV coverage > 80%, no documented wild poliovirus for the last three years, and certification-standard surveillance for at least one year. Global vaccine forecasts take these recommendations into account.

*as of end 1999

Table 2: Milestones to be achieved by end of year 2001

▼ Objectives	▼ Milestones 2001
Interrupt transmission of wild poliovirus	◆ Wild poliovirus transmission will be stopped in all countries except five to ten countries in Asia and Africa.
Intensification of NIDs and mop-up campaigns	◆ All endemic countries will conduct either at least four rounds of intensified NIDs or three consecutive NIDs (with SNIDs in high risk areas) as well as mop-up campaigns (except India that will conduct two rounds of NIDs and two SNIDs.)
Certification-standard surveillance	◆ All countries in AFR will achieve certification-standard surveillance. ◆ The South-East Asia and Eastern Mediterranean regional certification commissions will have established national certification committees in all countries.
Containment of wild poliovirus stocks	◆ National inventories will be completed and all wild polivirus infectious and potentially infectious materials will be contained under BioSafetyLevel(BSL)-2/polio conditions in AMR, EUR, WPR and 14 countries of EMR. ◆ Regional guidelines for implementation will be created in AFR and SEAR. ◆ National plans of action, task force, and inventory process will start in remaining EMR countries where polio transmission has been stopped. ◆ Interim wild poliovirus repositories will be examined and validated in AMR, EUR and WPR.
Consensus strategy for stopping immunization	◆ All research studies to determine the strategy for stopping vaccination will be at least at the data collection phase.
Strengthening routine immunization services	◆ The lessons learned from polio eradication will be applied for use in strengthening routine immunization programmes, including use of the checklist to optimize the impact of polio eradication on immunization systems. ◆ Immunization management training modules will begin to be updated to incorporate lessons learned from polio eradication.

Table 3: Milestones to be achieved by end of year 2002

▼ Objectives	▼ Milestones 2002
Interrupt transmission of wild poliovirus	◆ Wild poliovirus transmission will be stopped in all countries.
Intensification of NIDs and mop-up campaigns	◆ Intensified NIDs will continue in Angola, DR Congo and Nigeria. ◆ NIDs or SNIDs, and mop-up campaigns will continue in all countries that were endemic or high-risk in 2000 or 2001.
Certification-standard surveillance	◆ EUR will be certified as polio-free. ◆ Certification-standard surveillance will be maintained. ◆ National certification committees will be established in all AFR countries. ◆ The role of environmental surveillance will be defined.
Containment of wild poliovirus stocks	◆ Global certification containment requirements will be implemented in AMR and EUR (upgrade to BSL-3/polio). ◆ Global certification containment conditions will be completed in WPR (completion of upgrade to BSL-3/polio) ◆ Interim wild poliovirus repositories will be examined and validated in AFR and SEAR.
Consensus strategy for stopping immunization	◆ Multiagency meeting will be held to assess the status and findings of research studies.
Strengthening routine immunization services	◆ ICCs will monitor routine immunization services in all recently endemic countries. ◆ Updated immunization management guidelines will be completed.

Table 6: Milestones to be achieved by end of year 2005

▼ Objectives	▼ Milestones 2005
Intensification of NIDs and mop-up campaigns	◆ Conduct NIDs and/or SNIDs in any remaining high-risk countries at least until global certification is achieved.
Certification-standard surveillance	◆ All regions will be certified polio-free and global certification will be achieved. ◆ Supplemental surveillance will be completed as recommended by the Global Certification Commission.
Containment of wild poliovirus stocks	◆ Containment requirements for certification will be attained globally. ◆ Final global wild poliovirus repository(ies) will be operational. ◆ The draft global plan of action for post-OPV era containment procedures will be developed.
Consensus strategy for stopping immunization	◆ Specific recommendations for stopping polio immunization will be presented to the World Health Assembly for endorsement.
Strengthening routine immunization services	◆ National polio-funded staff will be assimilated into routine immunization programmes, and will continue to work toward the GAVI goal of reaching routine EPI coverage of 80% in 80% of districts globally. ◆ All countries that included vitamin A in NIDs have integrated vitamin A into routine immunization programmes, as appropriate.

PDF of this article
Email this article to a friend
Respond to this article
Read responses to this article
PubMed citation
Related articles in PubMed
Download to Citation Manager
See Correction for this article
This article has been cited by other articles
Search Medline for articles by:
Yamey, G.
Alert me when:
New articles cite this article

Collections under which this article appears:
International health

BMJ 2002;325:1236-1240 (23 November)

Education and debate

WHO in 2002

Faltering steps towards partnerships

Gavin Yamey, *deputy physician editor, Best Treatments.*

BMJ Unified, London WC1H 9JR

gyamey@bmj.com

Public-private partnerships for health have been a defining feature of Gro Brundtland's term as director general of WHO. How is WHO performing in its role as a partner?

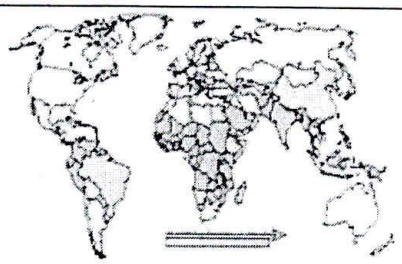
WHO must "reach out to others," said Gro Brundtland in her first speech after her election as director general of the organisation.[1] This statement heralded a new era of partnerships between WHO and other health agencies, the private sector, and civil society (box 1).[2] In this article, I examine how WHO is performing in these alliances, with a particular focus on Roll Back Malaria.

Summary points

- Gro Brundtland's election as director general heralded a new era of partnerships between WHO and other heal agencies, the private sector, and civil society
- WHO has found it hard to let go of its traditional role as being "in charge" of global health activities
- The Roll Back Malaria partnership has been plagued by a lack of clear governance and ineffectiveness at coun
- WHO could play an important role in helping countries coordinate new global health initiatives with health syste strengthening
- The organisation needs to articulate a clear policy on working in partnerships, including proper safeguards in its interactions with the private sector

Defining partnerships

Malaria causes about 3000 deaths a day, over 90% of which are in sub-Saharan Africa.[3] It is both a disease of poverty and a cause of poverty (fig 1), slowing economic growth by 1.3% per year in endemic areas.[3] Roll Back Malaria (RBM) was launched in 1998 as Brundtland's "pathfinder" project,[4] bringing together the biggest players in health with the aim of halving the malaria death rate by 2010.



(Credit: WHO)

Fig 1. Global burden of malaria

View larger version (47K):
[in this window]
[in a new window]

It has had two major successes. Firstly, it brought together more than 90 multilateral, bilateral, non-governmental, and private organisations. Secondly, it has raised the profile of malaria, particularly through its April 2000 summit in Nigeria.[5]

Box 1: Public-private partnerships involving WHO[2]

European Partnership Project on Tobacco Dependence
Global Alliance for TB Drug Development
Global Alliance to Eliminate Lymphatic Filariasis
Global Alliance to Eliminate Leprosy
Global Alliance for Vaccines and Immunization
Global Elimination of Blinding Trachoma
Global Fire Fighting Partnership
Global Partnerships for Healthy Aging
Global Polio Eradication Initiative
Global School Health Initiative
Multilateral Initiative on Malaria
Medicines for Malaria Venture
Partnership for Parasite Control
Roll Back Malaria
Stop TB
UNAIDS/Industry Drug Access Initiative

David Alnwick, Roll Back Malaria's project manager, said that "when RBM was formed, a very deliberate, very considered position was taken to try to avoid a burdensome, cumbersome, formal governance structure." But Roll Back Malaria recently commissioned Richard Feachem, executive director of the Global Fund, to lead a team in evaluating the alliance, and the team found that the project's loose governance structure made the very concept of partnership unclear. The roles of each partner were undefined, and this "looseness and uncertainty is confusing to the partners themselves; it allows the partners to avoid responsibility and to put blame on others; and it is also confusing to clients at the country level."[6]

One damaging aspect of this looseness is that it encouraged WHO to "go it alone" and make decisions without adequate consultation with partners. Rather than being a true alliance, Roll Back Malaria was "a WHO programme with friends."[6] A recurring theme in my interviews with WHO's partners was their fear that WHO was using its new alliances to get back in the driver's seat in international health policy making. "WHO speaks a language of partnership," said one senior member of a global health agency, "but the reality is of insecurity and control-freakery."

Brundtland rejected this accusation. WHO cannot be criticised in this way, she said, "because we are

not just anyone, we are not just any non-governmental organisation, we have a responsibility to all the governments of the world, and not every partner has that." Alnwick believes that Roll Back Malaria "was WHO plus friends because a lot of the energy and leadership came out of the WHO." The evaluation concedes that it is easy for WHO to become the whipping boy partly because of this leadership role. "In practice," it says, "partners yield most of the responsibility for RBM to WHO, and then blame WHO for what goes wrong."

A new role for WHO

As global health cooperation fragments into many different partnerships, WHO is being asked to play a new kind of role—to show strong leadership but also give greater voice to its partners. The role could be described as leading from the middle, rather than the front.

It is not just within Roll Back Malaria that WHO must give more room to its partners, but also in the joint UN programme on HIV and AIDS (UNAIDS), an alliance of UN agencies and the World Bank aimed at alleviating the global impact of the epidemic (table).

View this table:
[in this window]
[in a new window]

Number of adults and children (age <15 years) living with HIV infection or AIDS, end of 2

From 1986, WHO took the lead on HIV control activities through its Global Programme on AIDS, funded largely by voluntary contributions from donors.[7] But in the mid-90s donors cut their funding and used it to form UNAIDS. This was partly a protest against the leadership of the former director general, Hiroshi Nakajima. Donors also hoped that UNAIDS would take a more multisectoral approach than WHO. The vote of no confidence from donors had a profound effect on WHO. Instead of asking itself what it could still contribute on HIV and AIDS, it battled with its partners to regain its primacy in this area. Peter Piot, executive director of UNAIDS, says that the spilt was "like a really bad divorce. There was a fantasy of bringing UNAIDS back into WHO."

But WHO, he said, now needs to redefine itself given that the architecture of global health has changed. "An incredible amount of energy was spent fighting each other, particularly WHO, Unicef, the World Bank, and UNDP [the United Nations Development Programme]. [The fighting] was on territory and policies, with WHO claiming it was the controller, that they were in charge. The world is changed in the meantime. That's why I'm saying that WHO still has to look for its place in the world."

Brundtland has reinvigorated WHO's AIDS programme, which is providing technical expertise to UNAIDS and giving guidance to countries on drug treatment of HIV, including prices.[8] Piot believes that WHO should concentrate on this kind of guidance, and not try to become the leader of the world's global efforts to control HIV. Joep Lange, president of the International AIDS Society, agreed: "We need a global plan with all partners."

Governance

The external evaluation is blunt about Roll Back Malaria's governance: "RBM has no governance structure." Alnwick rejected this assessment, arguing that the partnership, whose secretariat is housed by WHO, is accountable to WHO's member states via the World Health Assembly. While this is true, it means that there is no mechanism for all partners to share decision making. Kent Buse, assistant professor of international health at Yale University, said that "WHO has not been willing or able to establish such shared governing arrangements and this begs the question of how WHO defines the `public-private' in these partnerships."

Buse believes that the best model for achieving shared governance is the one used by legally independent partnerships, such as the Medicines for Malaria Venture and the Global Alliance for TB Drug Development. "These have established boards," he said, "with explicit fiduciary and oversight responsibilities, and to whom the senior management is responsible, with representation from both public and private sectors."

Partnerships housed by UN agencies could adopt this kind of model. One partnership that has done so is the Global Alliance for Vaccines and Immunization (GAVI).[9] It is housed within Unicef, but—in contrast to most partnerships housed within WHO—it has a governing board that represents public and private partners. The board has 11 members, three of whom are representatives from developing countries.

Box 2: A framework for good governance of partnerships involving WHO[10]

Partnerships should:

- Establish clear goals, roles, responsibilities, and decision making structures
- Consider the means of monitoring and enforcing decisions

- Establish systems of communicating information about decision making structures, funding, resourc allocation, and results to all concerned
- Document and publicise details of the process and outcomes of the partnership

Governing bodies should:

- Be widely representative
- Give WHO adequate decision making power, reflecting its position as the premier health agency with universal representation
- Have mechanisms ensuring the participation of constituencies that might otherwise lack the material resources needed to participate

There is a clear need to establish best practice in the governance of public-private partnerships for health. Buse and Waxman have proposed a framework that WHO could use in ensuring good governance (box 2).[10]

Country support

Willem van de Put is director of HealthNet International, a non-governmental organisation that collaborates with WHO in post-conflict zones, where malaria is often rife. He had high expectations of Roll Back Malaria. "But we're disappointed," he said, "that something so widely advertised, with so much attention, turns out to be no more than the sum of its parts. If we want to do malaria work, we're still trying to work out how we can work with RBM. We know there is an initiative, but what is it? Money? Expertise? It's all in the air."

At country level, Roll Back Malaria's presence and activities are often criticised as ephemeral. There has been "no push," said Fred Binka, who used to work with Roll Back Malaria and who is now at the University of Ghana, "to try to get something done on the ground." WHO's regional offices are important to Roll Back Malaria's success. "Some regions have done well," said Binka, "but the African region was understaffed and couldn't deliver." The region gets blamed for underperforming, he said, yet "headquarters gave no support, no capacity strengthening" (box 3).

Box 3: Malaria in the African region

Roll Back Malaria faces its greatest challenge in sub-Saharan Africa. Malaria is Africa's leading cause of mortality in children under 5. It accounts for 40% of public health expenditure, and up to half of all inpatient admissions and outpatient visits in areas where transmission of malaria is high.[3] The cheapest antimalarial drug, chloroquine, is rapidly losing its effectiveness in almost all countries where malaria is endemic.

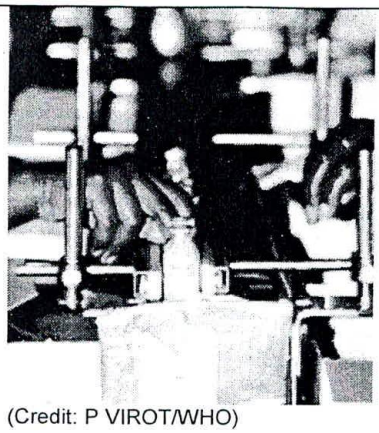
WHO's regional office for Africa (AFRO) has an important role to play in Roll Back Malaria's malaria control activities. It is currently located in Harare, but at least part of the office is moving to Brazzaville, a move that is likely to make it more isolated. Unfortunately, a "politicized and inflexible bureaucracy impedes the ability of AFRO staff to provide effective support to their client countries."[6] Staff are stretched to capacity and lack the resources needed to provide intensive support to countries.

Fred Binka is an African malaria expert who has experienced firsthand the problems facing Roll Back Malaria "At country level in Ghana," he said, "there has been more frustration than joy. To get this off the ground, there is a need to get countries the necessary human and financial resources. Most countries are helpless—they don't have the tools."

Malaria is endemic in 42 African countries, said Binka, yet the partnership created only three malaria posts in Harare, which was "woefully inadequate." It attempted, he said, to develop country teams to support country level activities, but these teams were weak. In many cases, the WHO country representatives were not technically equipped to deal with malaria control issues. "I will say that, at least in the African region, on balan not much has changed. This isn't a new era, a new dawn for WHO."

Roll Back Malaria partners have agreed that an important immediate step will be to create "inter-agency, inter country teams." These teams will involve Unicef, WHO, and regional malaria advisers from donor-supported initiatives such as the Malaria Consortium and Malaria Action Coalition. These agencies will work together to provide coordinated and continuous support to a small group of countries.

The external evaluation found that Roll Back Malaria's global and regional processes have made little impact on national malaria control programmes. The evaluation also found scant evidence that Brundtland's vision of "one WHO" was becoming a reality. Instead, an "uneasy relationship" between WHO's headquarters and its regional offices was hindering the partnership's effectiveness, particularly in Africa. The evaluation team's suggestion was to focus on a few "spotlight countries" that can show measurable success in malaria control within a few years. In recognition of these concerns, Roll Back Malaria foresees the establishment of three subregional offices in Africa plus a strengthening of its focus at country level. If Roll Back Malaria cannot show results soon, its credibility and future will surely be in doubt.



Drug production in Addis Abada, Ethiopia

(Credit: P VIROT/WHO)

View larger version (103K):
[in this window]
[in a new window]

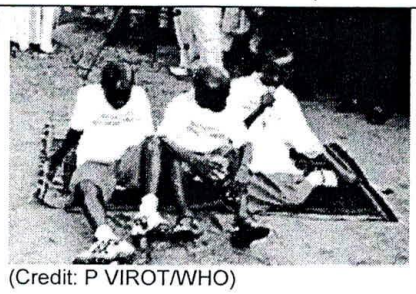
Short term, high profile goals

One of the obstacles facing the new public-private initiatives is that they are being rolled out in countries with weak health systems. For example, an assessment of GAVI's impact on four African countries raised concerns about whether these countries were sufficiently prepared and resourced to roll out the new vaccine initiative.[9] There is a tension between a donor-driven global partnership aiming for short term, high profile goals and the need for countries to broadly develop their health systems. Partnerships tend to "pick the low hanging fruit"—they concentrate their efforts on getting quick results rather than building up the wider systems needed to address the broader burden of disease.

Another related problem is that partnerships rarely synchronise their activities with emerging processes within countries aimed at developing their health systems. The evaluation of Roll Back Malaria found that the initiative was not linked up to sector-wide approaches, where donors contribute to a single pot of funds that support a country's whole health sector rather than individual disease programmes.[11] Nor was it linked to the World Bank's poverty reduction strategies[12] or its programme of debt relief for heavily indebted poor countries.[13]

Are partnerships undermining WHO's core activities?

Poor countries do not have the resources to coordinate the bewildering array of new public-private partnerships with programmes aimed at health systems support. WHO arguably has the mandate, though not the budget, to help governments with this coordination. Public-private partnerships could inadvertently undermine WHO's core activities, including country support, by diverting resources away from such activities. If the donor community concentrates its spending on these partnerships, which are mostly single disease programmes, and if WHO also diverts its resources towards them, there will be fewer resources at WHO's disposal for its core activities.



Children talk about malaria during Gro Brundtland's visit to Nigeria, 2001

(Credit: P VIROT/WHO)

View larger version (92K):
[in this window]
[in a new window]

Brundtland denies that this will happen. The increase in voluntary donations to WHO during her term, she said, shows that more funds are flowing to the organisation. But donors are still earmarking these for specific vertical programmes, and so a question remains over how WHO's less glamorous but increasingly important country support work will be funded.

Private partners

Some academics worry about the private sector's involvement in partnerships for health. [14] [15] Could the private sector, they wonder, distort the public health goals of the UN agencies? Carol Bellamy, chair of the board of the Global Alliance for Vaccines and Immunization and executive director of Unicef, has warned that "it is dangerous to assume that the goals of the private sector are somehow synonymous with those of the United Nations, because they most emphatically are not."[16]

But the private sector has a vital role to play in improving global health, and WHO must engage with it. The difficult question is how close this engagement should be. Roll Back Malaria's recent partnership with the company Novartis, for example, has caused alarm among some malaria experts (box 4).

Box 4: WHO's partnership with Novartis: cause for concern?

Roll Back Malaria is seeking alternatives to chloroquine for treating malaria in resistant areas. There is partici interest in combinations of drugs that include derivatives of artemisinin. Paul Garner, professor at the Liverpo School of Tropical Medicine, said that "there are good strategic and scientific reasons to use artemisinin drug combination with other drugs, as these slow the development of resistance, but there should be good evidenc that the particular combinations are at least as effective as other regimens to cure patients."

In areas where multidrug resistant malaria is emerging, Roll Back Malaria is advising governments to use artemisinin based combination drugs to treat the disease. The only combination drug ready for use is one tha produced solely by Novartis: artemether-lumefantrine (Coartem). It is expensive, and the company has agree provide it for use in malaria endemic countries at what it states is the cost of production. Recently a systemat review of the drug found that it was more effective than chloroquine in chloroquine resistant areas, but less effective than some cheaper alternatives.[19] The authors, of whom Garner is one, found insufficient research evidence to compare it adequately with sulfadoxine-pyrimethamine, one of the main drugs in use in Africa.

Given this lack of proved effectiveness, said Garner, why did Roll Back Malaria not insist that the company conduct proper studies comparing its effectiveness against existing antimalarial regimens? Why is the projec particularly promoting Novartis' drug as first line treatment for malaria?

When I interviewed David Alnwick, Roll Back Malaria's project manager, boxes of Coartem were on display ir office. "Should I take the boxes of Coartem down," he asked, "when the press or TV come? No. Why have I g them up there? Because at the moment this is the best single drug around for treating malaria in countries tha have got multidrug resistant malaria. Should I be ashamed of the fact that we've worked with Novartis to impr access to developing countries to the drug? Absolutely not. Why not? Because I think we're entirely open, an have been open, in saying that it is a real pity that Novartis is the only group in town making this drug. While t may own the intellectual property on this particular drug, there are four or five similar drugs out there waiting t developed."

Hans Hogerzeil, a member of WHO's essential drugs and medicines policy group, said that "there are different ways for WHO to be in contact with commercial companies" and each requires different rules of engagement. WHO's tropical diseases programme, for example, must work closely with industry to develop new drugs. But WHO's essential drugs department should be "totally fire-walled off, because we, through the expert committee, have to finally decide, independently, is this a good drug or not—is it recommendable, is it safe?"

WHO knows it must tread carefully in its interactions with industry and has formulated guidelines for its staff to govern these.[17] It is unclear, however, how closely the guidelines are being followed across the organisation, and they are vague about important issues such as screening potential corporate partners. Until WHO addresses this vagueness, it will continue to stumble into situations in which it seems to be too close to the private sector. Many WHO staff, for example, were amazed that the official lobbyist of the pharmaceutical industry was asked to write a policy paper on generic drugs for WHO's Commission on Macroeconomics and Health.[18] One senior WHO insider said that the episode showed a "fatal error of judgment" on Brundtland's part.

Taking stock

Daniel Tarantola, one of Brundtland's senior policy advisers, said: "We are now in a phase of taking stock—looking at the good and the bad in these alliances, and recreating and refocusing what we do." He believes that the lessons from partnerships to date point to a few important questions. What sort of composition should they have? What should their relationships to governments be? When should they and should they not involve the UN system?

This kind of appraisal is desperately needed. WHO has not articulated a clear and consistent policy on working in partnerships, and yet it is increasingly entering into them. Not all staff embrace the new direction that WHO is taking, and yet this diversity of opinion is rarely heard. The organisation needs a sound policy that has come from a process of open discussion and debate.

Conclusion

WHO has yet to find its feet as a partner in a global health landscape that is becoming dominated by partnerships. An analysis of Roll Back Malaria shows that WHO could fulfil an important new role, helping to define the governance of partnerships and the responsibilities of each partner. It is well placed to support countries in the local implementation of new global health initiatives, and in coordinating these initiatives with strengthening of health systems, but it is unclear how it will get the funds to do so. Proper safeguards in its interactions with the private sector will go a long way towards inspiring confidence that these initiatives are truly serving public health.

Acknowledgments

Competing interests: The *BMJ* receives submissions and commissions papers from many WHO authors, but GY is no longer involved in this process. GY now works for BMJ Unified, a joint venture between the BMJ Publishing Group and United HealthCare Services Inc (www.besttreatments.org).

Footnotes

This is the third of five articles

References

1. World Health Organization. *Dr Gro Harlem Brundtland, director-general elect, The World Health Organizatio to the fifty-first World Health Assembly, Geneva, 13 May, 1998.* Geneva: WHO, 1998. www.who.int/director-general/speeches/1998/index.html (accessed 5 Nov 2002).
2. Reich MR. Public-private partnerships for public health. In: *Public-private partnerships for public health.* Can Harvard University Press, 2002:1-18. www.hsph.harvard.edu/hcpds/partnerbook/chap1.PDF (accessed 15 N
3. World Health Organization. *Fact sheet No 203. Roll Back Malaria.* Geneva: WHO, 2002. www.who.int/inf-fs/en/fact203.html (accessed 15 Nov 2002).
4. World Health Organization. *Launch of Roll Back Malaria.* Geneva: WHO, 1998. www.who.int/director-general/speeches/1998/english/19981030_un.html (accessed 15 Nov 2002).
5. Yamey G. African heads of state promise action against malaria. *BMJ* 2000; 320: 228.
6. Feachem R, Medlin C, Daniels D, Dunlop D, Mshinda H, Petko J, et al. Achieving impact: Roll Back Malaria phase. Final report of the external evaluation of Roll Back Malaria. August 29 2002. http://mosquito.who.int/cmc_upload/0/000/015/905/ee.pdf (accessed 15 Nov 2002).
7. Godlee F. The World Health Organisation: WHO's special programmes: undermining from above. *BMJ* 199 182[Free Full Text].
8. World Health Organization. *Sources and prices of selected drugs and diagnostics for people living with HIV/* Geneva: WHO, 2002. www.who.int/medicines/library/par/hivrelateddocs/prices-eng.pdf (accessed 15 Nov 2(
9. Brugha R, Starling M, Walt G. GAVI, the first steps: lessons for the Global Fund. *Lancet* 2002; 359: 435-438[ISI][Medline].
10. Buse K, Waxman A. Public-private health partnerships: a strategy for WHO. *Bull World Health Organ* 2001; 754[ISI][Medline].
11. Garner P, Flores W, Tang S. Sector-wide approaches in developing countries. *BMJ* 2000; 21: 129-130.
12. Verheul E, Rowson M. Poverty reduction strategy papers. *BMJ* 2001; 323: 120-121[Free Full Text].
13. World Bank. The HIPC Initiative. www.worldbank.org/hipc/about/hipcbr/hipcbr.htm (accessed 15 Nov 2002).
14. Yamey G. Global vaccine initiative creates inequity, analysis concludes. *BMJ* 2001; 322: 754[Free Full Text].
15. Richter R. `Partnerships' between UN agencies and transnational companies: a critical perspective. In: Heal International. *Public-private `partnerships'.* Amsterdam: Health Action International, 2000. www.haiweb.org/campaign/PPI/seminar200011.html#item3 (accessed 15 Nov 2002).
16. Bellamy C. Public, private and civil society. Statement of Unicef executive director to Harvard international d conference on "sharing responsibilities: public, private and civil society," Harvard University, Cambridge, MA 1999. www.un.org/partners/business/unicef14.htm (accessed 15 Nov 2002).
17. World Health Organization. *Guidelines on working with the private sector to achieve health outcomes.* Gene 2000. www.who.int/gb/EB_WHA/PDF/EB107/ee20.pdf (accessed 5 Nov 2002).
18. Bale EH. Consumption and trade in off-patented medicines. Commission on Macroeconomics and Health w paper series, Paper No WG 4:3. www.cmhealth.org/docs/wg4_paper3.pdf (accessed 15 Nov 2002).
19. Omari AA, Preston C, Garner P. Artemether-lumefantrine for treating uncomplicated falciparum malaria. *Co Database Syst Rev* 2002;(3):CD003125.
20. UNAIDS. UNAIDS at Barcelona. Global estimates of HIV/AIDS epidemic as of end 2001. www.unaids.org/barcelona/presskit/barcelona%20report/Global_estimate.pdf (accessed 13 Nov 2002)

This article has been cited by other articles:

D. Aitken
WHO responds
BMJ, January 25, 2003; 326(7382): 217 - 218.
[Full Text] [PDF]

Rapid responses:

Read all Rapid responses

Co-artemether versus sulphadoxine-pyrimethamine: is a comparative study necessary?
Stephen Toovey, et al.
bmj.com, 28 Nov 2002 [Full text]

WHO's policies on public-private partnership: the need for reform
Kent Buse
bmj.com, 29 Nov 2002 [Full text]

Public/Private Partnership Between Novartis and Co-artemether r
Phil M Rush, et al.
bmj.com, 6 Dec 2002 [Full text]

2002, 77, 97–108

No. 13

Weekly epidemiological record
Relevé épidémiologique hebdomadaire

29 MARCH 2002, 77th YEAR / 29 MARS 2002, 77e ANNÉE
No. 13, 2002, 77, 97–108
http://www.who.int/wer

Contents

Sommaire

WORLD HEALTH ORGANIZATION
Geneva

ORGANISATION MONDIALE DE LA SANTÉ
Genève

Annual subscription / Abonnement annuel
Sw. fr. / Fr. s. 230.–

6.500 1.2002
ISSN 0049-8114
Printed in Switzerland

OUTBREAK NEWS

Dengue/dengue haemorrhagic fever, Brazil. As of 19 March, the health authorities had reported 104 469 cases of dengue and 40 deaths in Rio de Janeiro state. In the city of Rio de Janeiro, the municipal health authority reported a total of 49 149 cases and 435 cases of dengue haemorrhagic fever, with a total of 29 deaths.

The dengue outbreak is the largest in the state's history, and the authorities have implemented an intensive ongoing campaign to control the epidemic. Included are social mobilization activities to involve the community in eliminating breeding sites of mosquitoes and in taking measures to avoid being bitten by mosquitoes, as well as state and municipal vector control programmes.

Ebola, Gabon (update).[1] On 20 March, the Ministry of Health reported 60 confirmed cases, including 50 deaths. Suspect cases continue to be investigated.

Ebola, Congo (update).[2] As of 22 March, 32 confirmed cases, including 19 deaths, had been reported in villages in Cuvette region; 18 contacts are being followed. Ebola haemorrhagic fever has now been laboratory-confirmed in the Kelle area.

Meningococcal disease, Burkina Faso (update).[1] As of 20 March, 3 579 cases had been reported, including 544 deaths (case-fatality rate, 15%), from all parts of the country. The epidemic threshold has been reached in 12 out of 15 districts, and 13 districts are on alert for reaching the threshold. Vaccination campaigns were carried out in 2001 and recently in 2002 .

[1] See No. 11, 2002, p. 81.
[2] See No. 7, 2002, p. 49.

LE POINT SUR LES ÉPIDÉMIES

Dengue/dengue hémorragique, Brésil. Au 19 mars, les autorités sanitaires avaient signalé 104 469 cas de dengue et 40 décès dans l'état de Rio de Janeiro. Dans la ville de Rio de Janeiro, les autorités sanitaires municipales ont signalé au total 49 149 cas et 435 cas de dengue hémorragique, avec au total 29 décès.

La flambée de dengue est la plus sérieuse dans l'histoire de cet état, et les autorités effectuent une campagne intensive pour lutter contre l'épidémie. Cette dernière comprend des activités de mobilisation sociale pour impliquer la communauté dans l'élimination des sites de reproduction des moustiques et dans la prise de mesures pour éviter de se faire piquer par les moustiques, ainsi que des programmes de lutte contre les vecteurs au niveau de l'état et de la municipalité.

Ebola, Gabon (mise à jour).[1] Le 20 mars, le Ministère de la santé a signalé 60 cas confirmés, dont 50 décès. Les enquêtes se poursuivent quant aux cas présumés.

Ebola, Congo (mise à jour).[2] Au 22 mars, on avait signalé 32 cas confirmés, dont 19 décès, dans des villages de la région de Cuvette; 18 contacts sont suivis. La présence de la fièvre hémorragique Ebola dans la zone de Kelle a été confirmée en laboratoire.

Méningococcie, Burkina Faso (mise à jour).[1] Au 20 mars, 3 579 cas avaient été signalés, dont 544 décès (taux de létalité, 15%), dans tout le pays. Le seuil épidémique a été atteint dans 12 des 15 districts, et 13 districts restent en alerte au cas où le seuil serait franchi. Des campagnes de vaccination ont été effectuées en 2001 et récemment en 2002.

[1] Voir N° 11, 2002, p. 81.
[2] Voir N° 7, 2002, p. 49.

Neisseria meningitidis serogroup W135 has been laboratory-confirmed in cases from 5 districts by the WHO Collaborating Centre for Reference and Research on Meningococci, Oslo, Norway. A crisis committee has been set up by the Ministry of Health. A WHO team is working with the committee to consider the most appropriate strategy to control the outbreak, given the presence of the W135 strain. Measures include epidemiological surveillance, collection and testing of samples, social mobilization, training and coordination.

Neisseria meningitidis sérogroupe W135 a été confirmé en laboratoire chez des cas provenant de 5 districts par le Centre collaborateur OMS de référence et de recherche sur les méningocoques, Oslo, Norvège. Une cellule de crise a été établie par le Ministère de la santé. Une équipe de l'OMS collabore au travail de cette cellule afin de définir la meilleure stratégie de lutte contre la flambée, vu la présence de la souche W135. Les mesures comprennent la surveillance épidémiologique, la collecte et l'analyse des échantillons, la mobilisation sociale, la formation et la coordination.

Progress towards the global eradication of poliomyelitis, 2001

The global polio eradication initiative, launched following the 1988 World Health Assembly resolution to eradicate poliomyelitis worldwide, has made remarkable progress. From 1988 through the end of 2001, the number of countries where polio was endemic decreased from > 125 to 10. The number of polio cases decreased from an estimated 350 000 in 1988 to < 1 000 cases in 2001 (as of 10 March 2002), a percentage decrease of > 99%. Wild-type 2 poliovirus has not been detected worldwide since October 1999, despite improving surveillance. Two WHO regions – the Americas and the Western Pacific – have been certified free of indigenous wild poliovirus. The European Region has been free of indigenous wild poliovirus since 1998 and is likely to be certified polio-free in 2002.

However, considerable remaining challenges to the global polio eradication effort include the "high-transmission" areas of northern India, Afghanistan/Pakistan, and Niger/Nigeria, as well as a deterioration in security and/or suboptimal strategy selection and implementation in the "low-transmission" countries in the Horn of Africa – Ethiopia, Somalia, Sudan – and Angola and Egypt. Challenges have also included continued importations of wild poliovirus into polio-free areas, and the detection of circulating vaccine-derived poliovirus in the Philippines.

This article reviews global progress achieved during 2001, and summarizes the current status of the initiative.

Implementation of polio eradication strategies

The global polio eradication initiative relies on high-quality implementation of 4 main strategies: routine infant immunization with OPV; supplementary immunization activities during national immunization days (NIDs), surveillance for wild poliovirus through reporting and virological testing of all cases of acute flaccid paralysis (AFP) among children aged < 15 years, and targeted mop-up immunization campaigns once virus transmission has become focal.

Routine immunization coverage with 3 doses of oral poliovirus vaccine (OPV3), reported globally among children aged < 12 months, remained relatively unchanged between 1999 and 2000 at 81% and 82%, respectively. Substantial differences in coverage exist between WHO regions, with the African Region reporting the lowest OPV3 coverage rates (51% in 1999 and 55% in 2000). Routine immuniza-

Progrès vers l'éradication mondiale de la poliomyélite, 2001

L'initiative mondiale d'éradication de la poliomyélite, lancée suite à la résolution prise par l'Assemblée mondiale de la Santé en 1988 d'éradiquer la poliomyélite partout dans le monde, a progressé de façon remarquable. Entre 1988 et la fin 2001, le nombre de pays où la poliomyélite était endémique est passé de > 125 à 10. Le nombre de cas de poliomyélite estimé à 350 000 en 1988 est passé à < 1 000 cas en 2001 (au 10 mars 2002), soit une chute de > 99%. Le poliovirus sauvage de type 2 n'a pas été détecté dans le monde depuis octobre 1999, malgré une surveillance toujours plus efficace. Deux régions de l'OMS – les Amériques et le Pacifique occidental – ont été certifiées exemptes de poliovirus sauvage autochtone. La Région européenne est exempte de poliovirus autochtone depuis 1998 et devrait être certifiée exempte de poliomyélite en 2002.

Cependant, les problèmes considérables que rencontre encore l'effort d'éradication mondiale de la poliomyélite sont, d'une part, des régions de transmission élevée au nord de l'Inde, les zones frontières séparant le Pakistan de l'Afghanistan et le Nigéria du Niger, et, de l'autre, une détérioration de la sécurité et/ou un choix et une mise en œuvre sub-optimales de la stratégie dans les pays de faible transmission de la Corne de l'Afrique – Ethiopie, Somalie, Soudan – ainsi qu'en Angola et en Egypte. Les importations continues de poliovirus sauvage dans des régions exemptes de poliomyélite posent également des problèmes, ainsi que la détection de poliovirus circulant dérivés de la souche vaccinale aux Philippines.

Le présent article examine les progrès obtenus dans le monde en 2001 et fait le point sur cette initiative.

Mise en œuvre des stratégies d'éradication de la poliomyélite

L'initiative mondiale d'éradication de la poliomyélite repose sur une mise en œuvre de qualité de ses quatre stratégies principales: vaccination systématique des nourrissons par le VPO; activités de vaccination supplémentaire au cours des journées nationales de vaccination (JNV); surveillance du poliovirus sauvage par le biais de la notification et de l'analyse virologique de tous les cas de paralysie flasque aiguë (PFA) survenus chez les enfants de < 15 ans; et campagnes ciblées de vaccination de ratissage une fois la transmission du virus cantonnée à certains foyers.

La couverture de la vaccination systématique au moyen de 3 doses de vaccin antipoliomyélitique buccal (VPO3), signalée dans le monde chez les enfants âgés de < 12 mois est restée relativement la même entre 1999 et 2000, à 81% et 82% respectivement. Il existe des différences de couverture importantes entre les différentes régions de l'OMS, la Région africaine rapportant le taux de couverture par le VPO3 le plus faible (51% en 1999 et 55% en 2000). La couverture

tion coverage continues to be low in the 10 countries (except Egypt) endemic in 2001 (*Map 1*), including the remaining endemic states of Bihar and Uttar Pradesh in India. In the absence of good routine OPV coverage, the only means for countries to reach the immunity levels necessary to interrupt wild poliovirus transmission is to increase the frequency and quality of supplementary immunization campaigns.

All endemic and most recently endemic countries continued to conduct supplementary immunization activities during 2001. An estimated 575 million children in 94 countries received nearly 2 billion doses of OPV during 300 rounds of NIDs, sub-NIDs or mopping-up activities. All countries used well-supervised house-to-house immunization in part or all of the target area for supplementary immunization activities as the primary means to further increase their quality in order to reach the highest possible coverage of children aged < 5 years.

The quality of AFP surveillance to indicate reliably the presence or absence of wild poliovirus has further improved in all WHO regions and endemic countries (*Table 1*). In 2001, all regions and endemic countries reached levels of AFP reporting sufficiently sensitive for polio-free certification and often far exceeding the required annual non-polio AFP rate of at least 1 AFP case per 100 000 population aged < 15. Progress in AFP reporting between 2000 and 2001 was particularly notable in the African Region, especially in Angola, Ethiopia and Nigeria. Similar progress is seen in improving the reliability of virological surveillance through the collection of adequate stool specimens. In 2001, all WHO regions, except for the African Region, reached and surpassed the certification requirement of collecting 2 adequate stool specimens from at least 80% of AFP cases. This indicator also came close to certification quality in the African Region, where it increased from 50% in 2000 to 71% in 2001.

The 147 laboratories collaborating in the WHO-accredited global polio laboratory network continued to provide consistent quality support to the programme. Improvements in AFP reporting and specimen collection considerably increased the workload for most laboratories, especially in the African laboratory network, where the number of stool specimens increased by 56%, from 11 891 in 2000 to 18 515 in 2001. Globally, 64 443 stool samples were tested from 32 041 AFP cases in 2001, with results for 92% of cases reported within 28 days after receiving specimens in the national laboratory. Improvements in the efficiency and logistics of stool specimen handling and transport between collaborating laboratories in many countries allowed further reductions of the unavoidable reporting delay between the onset of paralysis and the reception of final laboratory results. For example, in the Indian laboratory network, this interval has been reduced to 40 days or less on average.

Impact on wild poliovirus transmission

The initiative's progress towards global interruption of wild poliovirus transmission from 2000 to 2001 is characterized by the following main achievements:

de la vaccination systématique reste faible dans les 10 pays d'endémie (à l'exception de l'Egypte) recensés en 2001 (*carte 1*), et notamment en Inde, dans les états du Bihar et de l'Uttar Pradesh. En l'absence d'une bonne couverture systématique par le VPO, le seul moyen pour ces pays d'atteindre le degré d'immunité nécessaire pour interrompre la transmission du poliovirus sauvage consiste à accroître la fréquence et la qualité des campagnes de vaccination supplémentaire.

En 2001, tous les pays d'endémie et d'endémie très récente ont poursuivi leurs activités de vaccination supplémentaire. On estime à 575 millions le nombre d'enfants qui, dans 94 pays, ont reçu près de 2 milliards de doses de VPO à l'occasion de 300 JNV, sous-JNV, ou opérations de ratissage. Dans tous ces pays, la vaccination porte-à-porte, dûment supervisée dans certaines parties ou dans l'ensemble des zones cibles des activités de vaccination supplémentaire, a été le principal moyen utilisé pour accroître la qualité des services et parvenir à la couverture la plus élevée possible chez les enfants de < 5 ans.

La qualité de la surveillance de la PFA s'est encore améliorée dans toutes les régions de l'OMS et dans tous les pays d'endémie, indiquant de manière fiable la présence ou l'absence de poliovirus sauvage (*Tableau 1*). En 2001, toutes les régions et tous les pays d'endémie ont atteint des niveaux de notification des cas de PFA suffisamment sensibles pour pouvoir certifier l'absence de la poliomyélite, niveaux dépassant souvent de loin le taux annuel de PFA non poliomyélitique exigé, qui est d'au moins 1 cas de PFA pour 100 000 habitants de < 15 ans. Entre 2000 et 2001, les progrès de la notification des cas de PFA ont été particulièrement visibles dans la Région africaine, surtout en Angola, en Ethiopie et au Nigéria. Des progrès similaires sont observés dans l'amélioration de la fiabilité de la surveillance virologique, grâce à la collecte adéquate d'échantillons coprologiques. En 2001, toutes les régions OMS sauf la Région africaine ont atteint ou dépassé la norme exigée pour la certification, qui est de recueillir 2 échantillons coprologiques conformes pour au moins 80% des cas de PFA. Cet indicateur s'est également rapproché de la qualité exigée pour la certification dans la Région africaine, où il est passé de 50% en 2000 à 71% en 2001.

Les 147 laboratoires collaborant au réseau mondial des laboratoires de la poliomyélite agréés par l'OMS ont continué à fournir un soutien régulier et de qualité au programme. Les améliorations apportées à la notification des cas de PFA et à la collecte des échantillons ont considérablement accru la charge de travail de la plupart des laboratoires, surtout dans le réseau des laboratoires africains, où le nombre d'échantillons coprologiques a progressé de 56%, passant de 11 891 en 2000 à 18 515 en 2001. Dans le monde, 64 443 échantillons coprologiques ont été testés pour 32 041 cas de PFA déclarés en 2001, les résultats de 92% d'entre eux ayant été rapportés dans les 28 jours suivant la réception des échantillons au laboratoire national. Les améliorations apportées sur le plan de l'efficacité et de la logistique du traitement et du transport des échantillons coprologiques entre les laboratoires collaborateurs dans de nombreux pays ont permis de réduire encore les inévitables retards de notification dus au temps écoulé entre l'apparition de la paralysie et la réception des résultats de laboratoire finaux. Par exemple, dans le réseau des laboratoires indiens, ce délai a été réduit en moyenne à 40 jours au plus.

Effets sur la transmission du poliovirus sauvage

Dans le cadre de cette initiative, les progrès réalisés en vue de l'interruption mondiale de la transmission du poliovirus sauvage entre 2000 et 2001 se caractérisent par le bilan suivant:

- the decrease in the number of countries with endemic transmission from 20 to 10, reducing the number of wild-virus confirmed polio cases reported globally from 719 (2000) to 473 (2001 provisional total as of 10 March 2002);
- the decreasing geographical spread of virus transmission within each country, often within affected provinces or states (e.g. Afghanistan, India, Nigeria, Pakistan);
- the reduced biodiversity of circulating virus, indicated by fewer numbers of virus substrains circulating separately in endemic countries;
- the decrease in the number of circulating virus types: of the 3 wild poliovirus types, type 2 has not been isolated since October 1999, and type 3 was isolated only in Afghanistan, India, Nigeria, Pakistan and Somalia in 2001.

- la réduction de 20 à 10 du nombre de pays dans lesquels la transmission est endémique, réduisant ainsi le nombre de cas de poliomyélite confirmés dus au virus sauvage notifiés dans le monde, nombre qui est passé de 719 (2000) à 473 (2001, total provisoire au 10 mars 2002);
- le rétrécissement géographique de la transmission du virus dans chaque pays, souvent au sein des provinces ou des Etats touchés (par ex., Afghanistan, Inde, Nigéria, Pakistan);
- la biodiversité réduite des virus circulants, révélée par le nombre plus réduit de sous-souches virales circulant séparément dans les pays d'endémie;
- la diminution des types de virus circulants: sur les 3 types de poliovirus sauvages, le type 2 n'a pas été isolé depuis octobre 1999, et le type 3 n'a été isolé qu'en Afghanistan, en Inde, au Nigéria, au Pakistan et en Somalie en 2001.

Table 1 **AFP surveillance quality and confirmed polio cases by WHO region, 2000 and 2001 and in countries endemic during 2001[a]**

Tableau 1 **Qualité de la surveillance de la PFA et cas de poliomyélite confirmés par Région OMS, 2000 et 2001 et par pays d'endémie en 2001[a]**

	AFP cases reported Cas déclarés de PFA		Annualized non-polio AFP rate[b] Taux de PFA non poliomyélitique annualisé[b]		AFP cases with adequate specimens[c] Cas de PFA avec échantillons conformes[c] (%)		Total confirmed (clinical + virological) Total des cas confirmés (cliniques + virologiques)		Virus-confirmed cases Cas confirmés virologiquement	
Region/Country[e] – Région/pays[e]	2000	2001	2000	2001	2000	2001	2000	2001	2000	2001
Africa – Afrique	5 936	8 444	1.50	2.96	50%	71%	1 863[d]	113	160	63
Angola	213	149	1.60	2.40	55%	66%	115	1	55	1
Ethiopia – Ethiopie	345	552	0.70	1.90	45%	47%	152	1	3	1
Niger	93	229	1.20	4.40	37%	80%	33	6	2	6
Nigeria	979	1 931	0.70	3.80	36%	67%	638	51	28	51
Americas – Amériques	2 076	2 186	1.21	1.13	80%	89%	12	10[f]	0	0
Eastern Mediterranean – Méditerranée orientale	3 253	3 852	1.41	1.89	70%	83%	505	140	287	140
Afghanistan	252	213	1.08	1.69	50%	74%	120	11	27	11
Egypt – Egypte	275	257	1.28	1.19	90%	91%	4	5	4	5
Pakistan	1 152	1 562	1.53	2.32	71%	84%	199	116	199	116
Somalia – Somalie	161	129	2.16	4.09	50%	59%	96	7	46	7
Sudan – Soudan	269	303	1.35	2.15	49%	74%	79	1	4	1
Europe	1 645	1 818	1.12	1.23	80%	81%	0	3	0	2
South-East Asia – Asie du Sud-Est	10 758	10 658	1.82	1.79	78%	83%	591	268	272	268
India – Inde	8 103	7 510	2.03	1.86	82%	83%	265	268	265	268
Western Pacific – Pacifique occidental	6 894	6 552	1.49	1.40	90%	88%	0	3[f]	0	0
Global – Monde	**30 562**	**33 510**	**1.57**	**1.61**	**75%**	**84%**	**2 971**	**537**	**719**	**473**

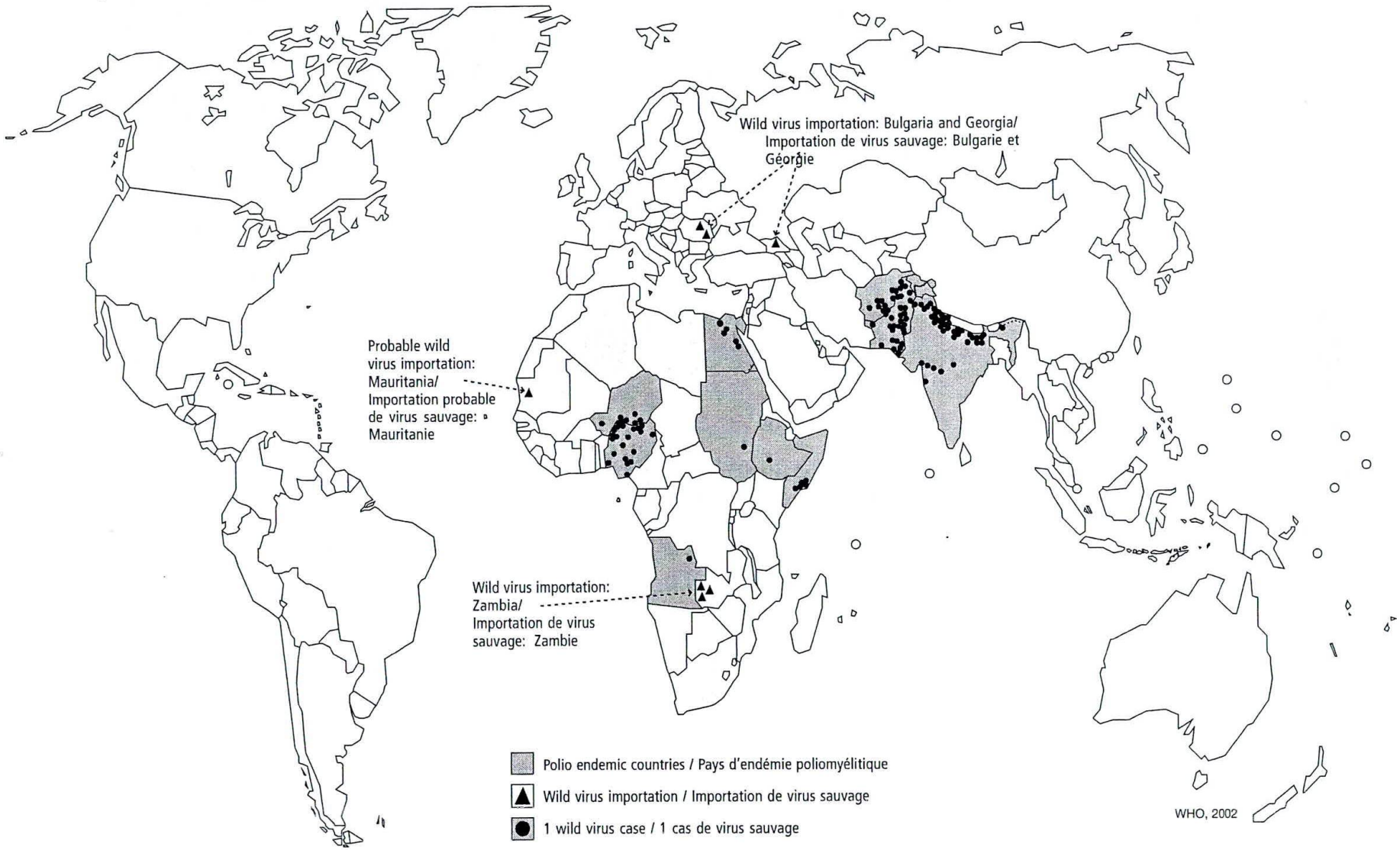
[a] Data for 2001 as of 10 March 2002. – Données pour 2001 en date du 10 mars 2002.
[b] Annualized non-poliomyelitis AFP rate for 100 000 persons aged < 15. – Taux de PFA non poliomyélitique annualisé pour 100 000 personnes de < 15 ans.
[c] Two stool specimens collected within 14 days of onset of paralysis, 24-48 hours apart. – Deux échantillons de selles recueillis à 24-48 heures d'intervalle dans les 14 jours suivant le début de la paralysie.
[d] Decrease in total confirmed cases from 2000 to 2001 through switch from clinical to virological case classification criteria in most countries. – Diminution du nombre total de cas confirmés entre 2000 et 2001 du fait du passage des critères de classification cliniques des cas aux critères virologiques dans la plupart des pays.
[e] Country totals reflect endemic countries and do not add up to regional and global totals. – Les totaux par pays font apparaître les pays d'endémie et ne s'ajoutent pas aux totaux régionaux et mondiaux.
[f] Vaccine-derived poliovirus. – Poliovirus dérivé de la souche vaccinale.

During 2001, only 10 countries documented indigenous transmission of wild poliovirus, decreasing from 20 endemic countries by the end of 2000. A number of central and western African countries were endemic in 2000, but found no virus in 2001 despite sensitive AFP surveillance approaching certification quality: Bangladesh, Benin, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of Congo, Ghana, Iraq and Nepal also isolated virus in 2000 but were no longer endemic in 2001.

En 2001, seuls 10 pays ont documenté une transmission autochtone de poliovirus sauvage, alors qu'ils étaient 20 à la fin de l'année 2000. Un certain nombre de pays d'Afrique centrale et occidentale étaient des pays d'endémie en 2000, mais n'ont isolé aucun virus en 2001 malgré une surveillance sensible de la PFA, proche de la qualité nécessaire à la certification; ce sont: le Bangladesh, le Bénin, le Congo, la Côte d'Ivoire, le Ghana, l'Iraq, le Népal, la République centrafricaine, la République démocratique du Congo et le Tchad.

Map 1 **Wild poliovirus cases, 2001 (10 endemic countries)**

Carte 1 **Cas de poliovirus sauvage, 2001 (10 pays endémiques)**



The designations employed and the presentation of material 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.

Les désignations utilisées sur cette carte et la présentation des données qui y figurent n'impliquent, de la part de l'Organisation mondiale de la Santé, aucune prise de position quant au statut juridique de tel ou tel pays, territoire, ville ou zone, ou de ses autorités, ni quant au tracé de ses frontières.

While AFP surveillance quality improved from 2000 to 2001 in all WHO regions and endemic countries, the number of reported polio cases decreased further, with only 537 total confirmed polio cases reported in 2001 (as of 10 March 2002), of which 473 are wild-virus confirmed. There were 2 971 total confirmed cases in 2000, of which 719 were wild-virus confirmed. Since there are still AFP cases with onset of paralysis in 2001 pending final classification in all regions, the total number of confirmed cases for 2001 will increase, but is expected to remain below 1 000.

Five of the 10 remaining endemic countries constitute the high-transmission areas of Afghanistan, northern India, Niger, Nigeria and Pakistan. Due to their large, dense populations, India, Nigeria and Pakistan have traditionally been major poliovirus reservoirs. Virus transmission in endemic areas of these countries, as well as bordering areas of Afghanistan and Niger, is still intense, although the extent of transmission is rapidly decreasing. Following a rapid decrease in the extent of wild virus transmission in India between 1997 and 2000,[1] wild poliovirus types 1 and 3 continued to be transmitted during 2001, mainly in the northern Indian states of Bihar and Uttar Pradesh. The total number of wild-virus confirmed cases reported from India did not decrease from 2000 (265 cases) to 2001 (268 cases, as of 10 March 2002). However, closer epidemiological analysis indicates that only 3 poliovirus type 1 lineages circulated in India in 2001, reduced from 8 in 2000. Fewer districts reported wild-virus confirmed polio cases during 2001 as compared to 2000 (63 vs. 87 of 530 total districts in India). Most of the virus found during 2001 in Indian districts outside the states of Bihar and Uttar Pradesh was not found to be indigenous to these districts, but originated in one of the few remaining northern Indian foci which remained endemic throughout the whole year. Thus, virus found in 42 of 63 infected districts during 2001 was considered indigenous to these districts, while virus found in the remaining 21 districts in 2001 could be traced to an importation from the known endemic areas of Bihar and Uttar Pradesh.

The intensity and geographical spread of virus transmission in the Afghanistan-Pakistan epidemiological block has further decreased from 2000 to 2001, particularly in the 2 virus reservoirs shared between these countries (North-West Frontier province with adjoining provinces of Eastern Afghanistan; and Northern Balochistan with South-West Afghanistan around Kandahar). Progress is evident in Pakistan, where large population centres in Punjab and Sindh provinces became virus-free, along with molecular evidence indicating decreasing virus biodiversity. However, multiple virus foci did remain in 2001 in all provinces of Pakistan, with particularly intense transmission in North-West Frontier province, a localized outbreak of type 3 virus during the second half of 2001 in south-western Punjab province, and remaining foci in northern and southern Sindh. Progress from 2000 to 2001 was remarkable in Afghanistan, where wild poliovirus transmission appears to have ceased outside the 2 joint reservoirs, including in northern and north-western Afghanistan, which both had endemic transmission in 2000.

[1] See No. 34, 2001, pp. 258-262.

Tandis que la qualité de la surveillance de la PFA s'améliorait entre 2000 et 2001 dans toutes les régions OMS et dans les pays d'endémie, le nombre de cas de poliomyélite notifiés a continué à diminuer avec au total seulement 537 cas de poliomyélite confirmés notifiés en 2001 (au 10 mars 2002), dont 473 étaient dus à des virus sauvages. Il y avait eu en 2000 un total de 2 971 cas confirmés, dont 719 étaient dus à des virus sauvages. Comme il y a encore dans toutes les régions des cas de PFA qui se sont déclarés en 2001 et dont on attend la classification définitive, le nombre total de cas confirmés pour 2001 va augmenter, mais devrait rester inférieur à 1 000.

Cinq des 10 pays d'endémie restants représentent des zones de forte transmission: Afghanistan, nord de l'Inde, Niger, Nigéria et Pakistan. En raison de l'importance et de la densité de leur population, l'Inde, le Nigéria et le Pakistan ont de tout temps constitué d'importants réservoirs de poliovirus. La transmission du virus dans les régions d'endémie de ces pays, ainsi que dans les régions frontalières de l'Afghanistan et du Niger, est toujours intense, même si son extension décroît rapidement. Après une diminution rapide de l'extension géographique de la transmission du virus sauvage en Inde, observée entre 1997 et 2000,[1] les poliovirus sauvages de types 1 et 3 ont continué à être transmis en 2001, principalement dans les états du nord que sont le Bihar et l'Uttar Pradesh. Le nombre total de cas confirmés à poliovirus sauvage notifiés en Inde n'a pas baissé entre 2000 (265 cas) et 2001 (268 cas au 10 mars 2002). Cependant, une analyse épidémiologique plus fine indique que seules 3 lignées de poliovirus de type 1 ont circulé en Inde en 2001, contre 8 en 2000. Moins de districts ont notifié des cas confirmés de poliomyélite à poliovirus sauvage en 2001 qu'en 2000 (63 contre 87 sur les 530 districts indiens). La plupart des virus trouvés en 2001 dans les districts indiens autres que ceux du Bihar et de l'Uttar Pradesh n'étaient pas autochtones, mais provenaient de l'un des quelques foyers qui subsistent dans le nord de l'Inde, où la maladie reste endémique tout au long de l'année. Ainsi, les virus trouvés dans 42 des 63 districts infectés en 2001 ont été considérés comme autochtones, alors qu'on a pu déterminer que ceux trouvés dans les 21 autres provenaient des régions d'endémie connues du Bihar et de l'Uttar Pradesh.

L'intensité et l'extension géographique de la transmission du virus poliomyélitique dans le bloc épidémiologique Afghanistan/Pakistan ont encore diminué entre 2000 et 2001, en particulier dans les 2 réservoirs de virus que se partagent ces pays (province frontalière du nord-ouest du Pakistan et provinces adjacentes de l'est de l'Afghanistan; nord du Baloutchistan et sud-ouest de l'Afghanistan, autour de Kandahar). Les progrès sont évidents au Pakistan, où de grandes agglomérations se sont retrouvées exemptes de virus dans les provinces du Pendjab et du Sind, et où des données moléculaires indiquent une diminution de la biodiversité virale. Toutefois, en 2001, de nombreux foyers viraux sont restés actifs dans l'ensemble des provinces pakistanaises, avec une transmission particulièrement intense dans la province frontalière du nord-ouest, une flambée localisée de virus de type 3 au cours du deuxième semestre 2001 dans la province du Pendjab et des foyers toujours actifs dans le nord et le sud du Sind. Les progrès réalisés entre 2000 et 2001 ont été remarquables en Afghanistan, où la transmission du poliovirus sauvage semble avoir cessé en dehors de ces 2 réservoirs, notamment dans le nord et le nord-ouest de l'Afghanistan, où la transmission était endémique en 2000.

[1] Voir N° 34, 2001, pp. 258-262.

While endemic transmission was found throughout Nigeria in 2000, transmission during 2001 seems to have become more focal to the northern states of Nigeria, and adjoining parts of Niger.

Ethiopia, Somalia and Sudan in the Horn of Africa, as well as Angola and Egypt, are considered to be low-transmission countries. The intensity and geographical spread of virus transmission decreased in Angola between 2000 and 2001, despite marked surveillance improvements; however, transmission may still be missed in areas with conflict-related access problems, as shown by the importation of poliovirus to Zambia from eastern Angola in 2001. Documented through both AFP and environmental surveillance, several lineages of wild poliovirus continue to circulate in Egypt despite many years of implementing eradication strategies. Virus transmission in Sudan is clearly focal, with only 1 virus-confirmed case reported during 2001 in the presence of close to certification-quality AFP surveillance. Improvements in AFP surveillance quality, as well as high-quality supplementary rounds, increasingly suggest that virus transmission in Ethiopia is also limited. Few virus-confirmed cases (all wild-virus type 3) were found in Somalia in 2001, despite improved surveillance following a wild poliovirus type 1 outbreak in 2000 in the area around Mogadishu.

During 2001, 3 polio-free countries detected importations of wild poliovirus: Bulgaria and Georgia in the European Region, and Zambia in the African Region. It is not clear whether wild virus detected in Mauritania in 2001 represents indigenous transmission or an importation. Virus importations were rapidly reported and triggered large-scale surveillance and immunization response activities, thereby containing further spread.

Circulating vaccine-derived poliovirus (cVDPV), 2000-2001

After immunization with OPV, vaccinees excrete Sabin-strain virus for a limited time. However, very rarely, vaccine-derived polioviruses (VDPV) may acquire the neurovirulence and transmission characteristics of wild-type poliovirus. Polio cases due to circulating type 1 VDPV (cVDPV) were found in Haiti and the Dominican Republic (Hispaniola island) during 2000 and 2001 (21 virus-confirmed cases), and in the Philippines during 2001 (3 virus-confirmed cases). Type 1 cVDPVs in both the Hispaniola and Philippines episodes showed more than 2% difference from Sabin virus (VP1 region of genome), and may have circulated for 2 years before paralytic cases were detected. Low immunization coverage may be a risk factor for VDPVs to assume wild-type characteristics.

The programme's response to cVDPV included mass campaigns with OPV, which interrupted cVDPV circulation on Hispaniola island. Campaigns have been conducted with the same objective in the Philippines in early 2002. The global polio laboratory network has established additional procedures to identify suspect Sabin isolates, i.e. isolates showing more than 1% difference to original Sabin virus in the VP1 region of the genome. Suspect isolates are immedi-

Tandis que la transmission était endémique dans l'ensemble du Nigéria en 2000, en 2001 elle semble s'être cantonnée aux états du nord et aux régions voisines du Niger.

L'Ethiopie, la Somalie et le Soudan dans la Corne de l'Afrique, ainsi que l'Angola et l'Egypte sont considérés comme des pays de faible transmission. L'intensité et l'extension géographique de la transmission virale ont diminué en Angola entre 2000 et 2001, malgré une amélioration marquée de la surveillance; toutefois, cette transmission peut encore passer inaperçue dans des régions où il y a des problèmes d'accès liés à des conflits, comme l'a montré l'importation en Zambie d'un poliovirus venu de l'est de l'Angola en 2001. Plusieurs lignées de poliovirus sauvages, documentées par le biais tant de la surveillance de la PFA que de la surveillance de l'environnement, continuent de circuler en Egypte malgré la mise en œuvre de stratégies d'éradication depuis de nombreuses années. La transmission du virus au Soudan est nettement limitée à des foyers, avec seulement 1 cas confirmé rapporté en 2001 en présence d'une surveillance de la PFA ayant la qualité requise pour une presque certification. Les améliorations apportées à la qualité de la surveillance de la PFA, ainsi que des tournées de vaccination supplémentaire de qualité, laissent de plus en plus à penser que la transmission du virus est également limitée en Ethiopie. On a trouvé peu de cas confirmés en Somalie en 2001 (tous dus au poliovirus sauvage de type 3), malgré une surveillance améliorée à la suite d'une flambée de poliovirus sauvage de type 1 survenue en 2000 dans la région de Mogadiscio.

En 2001, 3 pays exempts de poliomyélite ont détecté des importations de poliovirus sauvage: la Bulgarie et la Géorgie dans la Région européenne et la Zambie dans la Région africaine. On ne sait pas si le virus sauvage détecté en Mauritanie en 2001 représente une transmission autochtone ou une importation. Ces virus importés ont été rapidement signalés et ont déclenché une surveillance à grande échelle ainsi que des activités de vaccination, qui ont permis d'endiguer leur propagation.

Poliovirus circulants dérivés de la souche vaccinale (2000-2001)

Après une vaccination par le VPO, les sujets vaccinés excrètent du virus de la souche Sabin pendant une durée limitée. Toutefois, et ce très rarement, il arrive que des poliovirus dérivés de la souche vaccinale acquièrent la neurovirulence et les caractéristiques de transmission du poliovirus sauvage. Des cas de poliomyélite dus à un tel virus vaccinal circulant de type 1 ont été trouvés en Haïti et en République dominicaine (île d'Hispaniola) en 2000 et en 2001 (21 cas confirmés), ainsi qu'aux Philippines en 2001 (3 cas confirmés). Les virus vaccinaux de type 1 incriminés lors des épisodes survenus à Hispaniola et aux Philippines ont montré une différence par rapport au virus Sabin supérieure à 2% (région VP1 du génome) et ont peut-être circulé pendant 2 ans avant qu'on ne détecte des cas de paralysie. La faible couverture vaccinale peut constituer un facteur de risque pour que le virus dérivé de la souche vaccinale prenne les caractéristiques du type sauvage.

La réponse du programme devant l'apparition de ces poliovirus dérivés de la souche vaccinale a été d'organiser des campagnes de vaccination de masse par le VPO, qui ont permis d'interrompre la circulation du virus vaccinal virulent dans l'île d'Hispaniola. Des campagnes ont été menées aux Philippines dans la même intention. Le réseau mondial des laboratoires de la poliomyélite a mis en place des procédures supplémentaires permettant d'identifier les isolements de virus Sabin suspects, c'est-à-dire les isolements

ately referred for genetic sequencing studies. More than 2 100 Sabin strain isolates from AFP cases, primarily from 2000 and 2001 cases, have now been screened and no additional cVDPVs were detected, except for the Philippines.

Polio endgame considerations

Progress in 3 key activities will constitute the global polio endgame: certification of the absence of indigenous wild poliovirus; containment of wild poliovirus laboratory stocks; and the development of a post-eradication immunization policy for polio.

Certification of the absence of indigenous wild poliovirus occurs on a regional basis, requiring that, with high-quality surveillance in place in all countries in a WHO region, a wild-virus free period of at least 3 years has passed. Experience in 2 WHO regions (Americas and the Western Pacific, certified polio-free in 1994 and 2000, respectively) has shown that the process and criteria for certifying the eradication of indigenous wild poliovirus are sound. WHO's European Region is likely to be certified in mid-2002.

Certification is closely linked to containment. Once transmission of wild poliovirus is interrupted globally, diagnostic and research laboratories and vaccine production facilities will represent the only remaining reservoirs of wild poliovirus. The goal of containment is to minimize the risk of inadvertent or intentional reintroduction of wild poliovirus from a laboratory or vaccine production site into human circulation. Countries need to identify all laboratories storing wild poliovirus or potentially wild-virus infectious materials to ensure proper handling or disposal of such materials under appropriate biosafety conditions. In keeping with the Global Plan of Action for Laboratory Containment of Wild Polioviruses, 120 of 216 non endemic countries (56%) have already started implementing these pre-eradication phase activities. Ninety-eight countries (45%) are currently conducting a national survey of biomedical laboratories and 34 (16%) of these have finalized a national inventory of laboratories confirmed to be storing wild poliovirus materials. Most of these countries are in the Western Pacific or European regions, although in every WHO region there are now some countries that are beginning activities. In contrast to regional certification, certification of global polio eradication will be possible only when all WHO regions have been certified polio-free and all pre- and post-eradication phase tasks have been completed.

Given the rapid progress made towards interrupting wild poliovirus transmission, the programme of work to develop post-eradication immunization policy has been accelerated. WHO and its partners are coordinating an agenda of research to broaden the knowledge base towards building a global consensus on the safest and most effective polio immunization strategy for the post-eradication era.

montrant une différence supérieure à 1% par rapport au virus Sabin original dans la région VP1 du génome. Ces isolements suspects sont immédiatement soumis à des études de séquençage génétique. A ce jour, plus de 2 100 isolements de souche Sabin provenant de cas de PFA, survenus principalement en 2000 et en 2001, ont été analysés et aucun poliovirus dérivé de la souche vaccinale n'a été détecté, sauf aux Philippines.

Aspects relatifs à la dernière phase de la lutte contre la poliomyélite

Des progrès réalisés dans 3 types d'activités importantes constitueront la dernière phase de la lutte contre la poliomyélite: la certification de l'absence de poliovirus sauvage autochtone; le confinement des stocks de poliovirus sauvages de laboratoire; et l'élaboration d'une politique «post-éradication» de vaccination contre la poliomyélite.

La certification de l'absence de poliovirus sauvage autochtone s'opère au niveau régional et exige que, disposant d'une surveillance de qualité dans tous les pays d'une région OMS, une période exempte de poliovirus sauvage d'au moins 3 ans se soit écoulée. L'expérience que l'on a des 2 régions OMS certifiées exemptes de poliomyélite (Amériques et Pacifique occidental, respectivement en 1994 et 2000) a montré que le processus et les critères de certification de l'éradication du poliovirus sauvage autochtone sont solides. La Région européenne de l'OMS devrait être certifiée exempte au milieu de l'année 2002.

La certification est étroitement associée au confinement. Une fois la transmission du poliovirus sauvage interrompue dans le monde, les laboratoires de diagnostic et de recherche et les établissements de production de vaccin représenteront les seuls réservoirs restants de poliovirus sauvage. L'objectif du confinement est de réduire au maximum le risque de réintroduction accidentelle ou intentionnelle des virus des laboratoires ou d'un site de production de vaccin dans la population humaine. Les pays doivent recenser tous les laboratoires qui conservent du poliovirus sauvage ou des matériels potentiellement infectieux, afin de faire en sorte que ces derniers soient manipulés ou éliminés dans des conditions de sécurité biologique appropriées. Conformément au Plan d'action mondial pour le confinement des poliovirus sauvages en laboratoire, 120 des 216 pays de non-endémie (56%) ont déjà commencé à mettre en œuvre ces activités de la phase «pré-éradication». Quatre-vingt-dix-huit pays (45%) mènent actuellement une enquête nationale sur les laboratoires biomédicaux et 34 (16%) d'entre eux ont finalisé un inventaire national des laboratoires dont il est confirmé qu'ils conservent du poliovirus sauvage. La plupart de ces pays sont situés dans les régions du Pacifique occidental ou de l'Europe, bien que dans chacune des régions de l'OMS il y ait désormais des pays qui démarrent ce type d'activités. Contrairement à la certification régionale, la certification de l'éradication mondiale de la poliomyélite ne sera possible que lorsque toutes les régions de l'OMS auront été certifiées exemptes de poliomyélite et que les tâches des phases pré et post-éradication auront été menées à bien.

Etant donné les progrès rapides réalisés pour interrompre la transmission du poliovirus sauvage, le programme de travail visant à élaborer une politique de vaccination post-éradication a été accéléré. L'OMS et ses partenaires coordonnent actuellement un programme de recherche visant à élargir le corpus des connaissances afin de parvenir à un consensus mondial sur la stratégie de vaccination antipoliomyélitique la plus sûre et la plus efficace pour la période qui suivra l'éradication.

Editorial note. Strongly supported by the global polio eradication partnership,[2] the world moved closer than ever before to interrupting wild poliovirus transmission globally during 2001, through continued intense polio eradication activities in the remaining endemic countries, accelerated in countries affected by conflict. Main achievements for 2001 include the reduction to 10 endemic countries globally, and further reductions of both the extent of transmission and the diversity of virus lineages within these countries.

Eradication activities continued in conflict-affected countries. Thirty-five million children received vaccine in Afghanistan and Pakistan at the height of the crisis in late 2001. Both Angola and the Democratic Republic of the Congo successfully participated in the synchronization of central African NIDs. 2001 saw unprecedented political commitment supporting national polio eradication efforts, with heads of state launching NIDs in central and western Africa and India. Two traditional large poliovirus reservoir countries, Bangladesh and the Democratic Republic of the Congo, did not isolate wild poliovirus, despite high-quality surveillance. The European Region is likely to become the third WHO region to be certified polio-free, in 2002.

However, a number of serious challenges remain to reaching the global polio eradication goal. The combination of large, dense populations, poor sanitation and low routine immunization coverage in Niger/Nigeria, Afghanistan/Pakistan and northern India may cause transmission in these countries to continue into 2003, unless eradication activities during 2002 are even more targeted and of higher quality. Delays in interrupting transmission could also occur in conflict-affected endemic countries if conflicts should intensify, security deteriorate, or access to children not be sustained. National polio eradication efforts cannot be successfully implemented by the health sector alone and will fail unless supported by strong political commitment and multisectoral mobilization at all administrative levels. The current global funding gap of US$ 400 million for activities from 2002 to 2005 needs to be closed urgently.

The programme has identified and defined the key risks to eradication in each country and is implementing country-specific response plans. Following a successful example in India, technical advisory groups of experts have been formed for most remaining endemic countries, with support from the global polio eradication partnership. These groups regularly review a country's programme status and advise on optimal strategy implementation. Genetic se-

Note de la rédaction. Grâce au soutien sans faille du partenariat pour l'éradication mondiale de la poliomyélite,[2] en 2001 le monde a été plus proche que jamais auparavant de l'interruption totale de la transmission du poliovirus sauvage, du fait de la poursuite d'activités intenses d'éradication de la poliomyélite dans les pays d'endémie restants, activités qui ont été accélérées dans les pays en proie à des conflits. Les principales réalisations de 2001 sont la réduction à 10 du nombre de pays d'endémie dans le monde, accompagnée de la réduction de l'extension géographique de la transmission et de la diversité des lignées virales dans ces pays.

Les activités d'éradication se sont poursuivies dans les pays en proie à des conflits. Trente-cinq millions d'enfants ont reçu le vaccin en Afghanistan et au Pakistan au plus fort de la crise, fin 2001. L'Angola et la République démocratique du Congo ont participé avec succès à la synchronisation des JNV en Afrique centrale. L'année 2001 a vu un engagement politique sans précédent en faveur des efforts nationaux d'éradication de la poliomyélite, des chefs d'Etat ayant lancé les JNV dans le centre et l'ouest de l'Afrique et en Inde. Deux grands réservoirs de poliovirus traditionnels, à savoir le Bangladesh et la République démocratique du Congo, n'ont pas isolé de poliovirus sauvage, malgré une surveillance de qualité. La Région européenne devrait devenir la troisième Région OMS à être certifiée exempte de poliomyélite, en 2002.

Toutefois, un certain nombre de problèmes sérieux doivent être résolus avant de pouvoir atteindre l'objectif d'éradication mondiale de la poliomyélite. L'association entre des populations importantes et denses, des services d'assainissement médiocres et une faible couverture vaccinale systématique en Afghanistan/Pakistan, au Niger/Nigéria et dans le nord de l'Inde, pourraient faire que la transmission se poursuive dans ces pays en 2003, à moins qu'en 2002 les activités d'éradication soient encore plus ciblées et de meilleure qualité. Des retards concernant l'interruption de la transmission pourraient également se produire dans les pays d'endémie en proie à des conflits si ces derniers devaient s'intensifier, et la sécurité se détériorer ou l'accès aux enfants ne pas être maintenu. Les efforts nationaux d'éradication de la poliomyélite ne peuvent être mis en œuvre avec succès par le seul secteur de la santé et échoueront s'ils ne sont pas appuyés par un engagement politique fort et une mobilisation multisectorielle à tous les échelons administratifs. Il convient de combler d'urgence l'actuel déficit de US$ 400 millions qui existe pour le financement des activités dans le monde entre 2002 et 2005.

Le programme a recensé et précisé les obstacles importants à l'éradication dans chaque pays et est en train de mettre en œuvre des plans permettant de les surmonter. Suivant un exemple qui a réussi en Inde, pour la plupart des pays d'endémie restants, et avec l'aide du partenariat pour l'éradication mondiale de la poliomyélite, des groupes consultatifs techniques d'experts ont été constitués. Ces groupes examinent régulièrement l'état du programme d'un pays et le conseillent sur la meilleure façon de mettre en œuvre la stra-

[2] The Global Poliomyelitis Eradication Initiative is spearheaded by WHO, Rotary International, the Centers for Disease Control and Prevention (United States) and UNICEF. The poliomyelitis eradication coalition also includes: the governments of countries affected by poliomyelitis; private foundations (e.g. United Nations Foundation, Bill & Melinda Gates Foundation); development banks (e.g. World Bank); donor governments (e.g. Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, United Kingdom and United States); the European Commission; humanitarian organizations (e.g. the International Federation of Red Cross and Red Crescent Societies) and corporate partners (e.g. Aventis Pasteur and De Beers). Volunteers in developing countries also play a key role: 10 million have participated in mass immunization campaigns.

[2] L'Initiative mondiale d'éradication de la poliomyélite est menée par l'OMS, le Rotary International, les *Centers for Disease Control and Prevention* (Etats-Unis d'Amérique) et l'UNICEF. La coalition en vue de l'éradication de la poliomyélite comprend également: les autorités des pays touchés par la poliomyélite; des fondations privées (par ex. Fondation des Nations Unies, Fondation Bill & Melinda Gates); des banques de développement (par ex. la Banque mondiale); des pays donateurs (par ex. l'Allemagne, l'Australie, l'Autriche, la Belgique, le Canada, le Danemark, les Etats-Unis d'Amérique, la Finlande, l'Irlande, l'Italie, le Japon, le Luxembourg, la Norvège, les Pays-Bas et le Royaume-Uni); la Commission européenne; des organisations humanitaires (par ex. la Fédération internationale des Sociétés de la Croix-Rouge et du Croissant-Rouge) et des partenaires des entreprises (par ex. Aventis Pasteur et De Beers). Les bénévoles des pays en développement ont également joué un rôle important: 10 millions d'entre eux ont participé aux campagnes de vaccination de masse.

quencing data are now being used more systematically to identify and target the main poliovirus reservoir areas. The quality of supplementary immunization activities to reach every child has further improved through better supervised house-to-house immunization. Better social mobilization and information activities are addressing campaign fatigue and the decreasing motivation and even non-compliance of both parents and vaccinators in some areas.

Through placement of international and national polio eradication staff at country (often also province) level, AFP surveillance systems everywhere have dramatically improved, even in countries severely affected by conflict such as Angola. Surveillance quality in most countries is approaching or has reached certification quality, allowing the programme to confidently confirm or rule out the presence of wild poliovirus in most areas. Expert groups for case classification now exist in most countries to improve the accuracy of final AFP case classification. The considerable decrease globally in the total number of confirmed cases between 2000 and 2001 should be noted, particularly in the African Region, mainly due to the acceleration of supplementary immunization, but partly reflecting the fact that most countries have now switched from clinical to virological case classification criteria. Using virological criteria, AFP cases are no longer confirmed on clinical grounds, but only if wild poliovirus is isolated. As expert groups for case classification begin to work in African countries, it will be a leading priority to reduce the large number of AFP cases currently classified as polio-compatible in the African Region.

Interagency coordination committees at regional, national and often subnational level coordinate partner and multisectoral support for the polio eradication programme and focus on fund-raising at the regional level. These committees, created for polio eradication, are increasingly also being used to coordinate partner input to strengthen routine immunization and activities of the Global Alliance for Vaccines and Immunization (GAVI). Polio eradication continued to have other positive impacts on routine immunization services and disease surveillance. In 2000 and 2001 alone, polio funds were used to purchase over 700 vehicles for immunization and surveillance. It is estimated that 30% of the cold chain in sub-Saharan Africa has been refurbished through polio eradication funds. About 80% of the 2 000 health staff recruited with polio funds are also regularly involved in planning and implementing routine immunization services.

Continued political commitment to polio eradication, access to children in conflict-affected countries and adequate funding are all preconditions for interrupting poliovirus transmission by the end of 2002. Given continued improvements in surveillance to pinpoint areas of virus circulation, further progress in improving the quality of immunization campaigns, and the availability of appropriate funding, the polio eradication goal is within reach. Concurrently, the

tégie. Les données du séquençage génétique sont désormais employées plus systématiquement afin d'identifier et de cibler les principales zones servant de réservoir au poliovirus. La qualité des activités de vaccination supplémentaire visant à atteindre chaque enfant s'est améliorée grâce à une vaccination porte-à-porte mieux supervisée. De meilleures activités de mobilisation sociale et d'information doivent faire face à la lassitude engendrée par les campagnes et à la baisse de motivation, voire au non-respect des règles dont font preuve les parents et les vaccinateurs dans certaines régions.

Par le truchement du détachement de membres du personnel national et international d'éradication de la poliomyélite dans les pays (et souvent aussi dans les provinces), les systèmes de surveillance de la PFA se sont spectaculairement améliorés partout, même dans les pays en proie à des conflits graves comme l'Angola. La qualité de la surveillance dans la plupart des pays est voisine ou a atteint la qualité exigée pour la certification, permettant au programme de confirmer ou d'infirmer avec assurance la présence du poliovirus sauvage dans la plupart des régions. Des groupes d'experts de la classification des cas existent désormais dans la plupart des pays afin d'améliorer l'exactitude de la classification des cas de PFA. La diminution considérable enregistrée partout dans le monde dans le nombre total de cas confirmés entre 2000 et 2001 est à noter, en particulier dans la Région africaine, et est principalement due à l'accélération des activités de vaccination supplémentaire, mais reflète en partie le fait que la plupart des pays sont désormais passés des critères de classification cliniques à des critères virologiques. A l'aide de ces critères virologiques, les cas de PFA ne sont plus confirmés à partir de résultats cliniques, mais seulement si le poliovirus sauvage est isolé. Parce que des groupes d'experts de la classification des cas commencent à travailler dans les pays africains, l'une des premières priorités consistera à réduire le nombre important de cas de PFA actuellement classés comme étant compatibles avec la poliomyélite dans la Région africaine.

Des comités de coordination interorganisations à l'échelon régional, national et souvent sous-national coordonnent l'appui partenarial et multisectoriel au programme d'éradication de la poliomyélite et sont axés sur la collecte de fonds au niveau régional. Ces comités, créés pour l'éradication de la poliomyélite, sont également de plus en plus employés pour coordonner la participation des partenaires aux efforts visant à renforcer la vaccination systématique et les activités de l'Alliance mondiale pour les vaccins et la vaccination (GAVI). L'éradication de la poliomyélite a continué à avoir d'autres effets positifs sur les services de vaccination systématique et de surveillance de la maladie. Pour les seules années 2000 et 2001, les fonds ont été utilisés pour l'achat de plus de 700 véhicules destinés à la vaccination et à la surveillance. En Afrique subsaharienne on estime que 30% de la chaîne du froid a été remise à neuf grâce à des fonds destinés à l'éradication de la poliomyélite. Près de 80% des 2000 membres du personnel de santé recrutés avec ces fonds participent régulièrement à la planification et la mise en œuvre des services de vaccination systématique.

Un engagement politique continu, le libre accès aux enfants dans les pays en proie à des conflits et un financement suffisant constituent l'ensemble des conditions préalables nécessaires à l'interruption de la transmission du poliovirus d'ici la fin 2002. Pour autant qu'on continue à apporter des améliorations à la surveillance afin de repérer les régions où le virus circule, qu'on progresse encore pour améliorer la qualité des campagnes de vaccination et qu'on dispose d'un financement approprié, l'objectif d'éradication

agendas for certification, containment and policy development for the post-eradication era need to be aggressively implemented. The experiences from Hispaniola and the Philippines with cVDPV demonstrate that, following the interruption of wild poliovirus transmission, continued high-quality surveillance and high routine immunization coverage are needed to screen for and prevent the emergence of cVDPV.

The global community must ensure that the enormous investment already made for polio eradication is protected and that endemic countries are fully supported in the final phase of their massive programme.

de la poliomyélite est atteignable. Simultanément, les programmes de certification, de confinement et d'élaboration des politiques pour la période qui suivra l'éradication doivent être mis en œuvre énergiquement. Les expériences d'Hispaniola et des Philippines avec les virus dérivés de souches vaccinales démontrent que, suite à l'interruption de la transmission du poliovirus sauvage, il faut assurer une surveillance continue, de qualité, et une couverture élevée par la vaccination systématique pour prévenir l'émergence de virus-vaccinaux virulents, ou les dépister.

La communauté mondiale doit faire en sorte que l'investissement considérable déjà réalisé pour l'éradication de poliomyélite soit protégé et que les pays d'endémie soient entièrement soutenus dans la dernière phase de leur programme de masse.

Influenza

Australia (22 March 2002).[1] An outbreak of influenza was detected in a nursing home of elderly residents in Melbourne. Over 40 polymerase chain reaction tests were carried out, further to which 5 patients tested positive for influenza A(H3N2). This is the second outbreak reported since January 2002.

Chile (19 March 2002).[2] In March, morbidity due to acute respiratory infections remained at baseline level both in adults and children. One influenza B virus was isolated from a 9-year-old girl in Santiago, which is a B/Sichuan/379/99-like strain.

Greece (1 March 2002).[3] The rate of influenza-like illness has remained very low. No influenza virus has been identified by antigen detection nor isolated.

Latvia (19 March 2002).[4] Influenza activity remained at widespread level, although the intensity of outbreaks has started to decrease. A local outbreak of influenza A(H3N2) was detected in a trauma centre. To date, 30 influenza A(H3N2) viruses were A/Moscow/10/99-like strain and 36 influenza B viruses were B/Sichuan/379/99-like.

New Caledonia (23 March 2002).[5] Following the first influenza A case reported in February, 3 new influenza A cases were detected during the third week of March.

Norway (16 March 2002).[4] The number of influenza-like illness cases is still increasing in the northern part of the country, with a rate remaining above the 2% outbreak threshold. Most viruses detected were influenza A. In the rest of the country, the consultation rate for influenza-like illness has declined. With the exception of 1 influenza B virus belonging to this winter's new Victoria-like strain, all viruses characterized to date are similar to the current vaccine strains.

[1] See No. 5, 2002, p. 38.
[2] See No. 43, 2001, p. 336.
[3] See No. 7, 2002, p. 56.
[4] See No. 12, 2002, p. 95.
[5] See No 50, 2001, p. 400.

Grippe

Australie (22 mars 2002).[1] Une flambée de grippe a été détectée dans une maison de retraite à Melbourne. Plus de 40 tests par PCR (*polymerase chain reaction*) ont été effectués, à la suite desquels 5 patients se sont avérés positifs au virus grippal A(H3N2). Il s'agit de la deuxième flambée signalée depuis janvier 2002.

Chili (19 mars 2002).[2] En mars, la morbidité causée par les infections respiratoires aiguës s'est maintenue à un niveau de base tant chez les adultes que chez les enfants. Un virus grippal de type B, très proche de la souche du vaccin B/Sichuan/379/99, a été détecté chez une fillette de 9 ans, à Santiago.

Grèce (1 mars 2002).[3] Le taux de syndromes grippaux est resté très faible. Aucun virus grippal n'a été isolé ou identifié par détection antigénique.

Lettonie (19 mars 2002).[4] L'activité grippale était toujours à un niveau général bien que l'intensité des flambées ait commencé à diminuer. Une flambée locale de grippe A(H3N2) a été détectée dans un centre de traumatologie. Jusqu'à présent, 30 virus grippaux de type A(H3N2) étaient de souche analogue à A/Moscow/10/99 et 36 virus grippaux de type B, de souche analogue à B/Sichuan/379/99.

Nouvelle-Calédonie (23 mars 2002).[5] Suite au premier cas de grippe A signalé en février, 3 nouveaux cas de grippe A ont été dépistés au cours de la troisième semaine de mars.

Norvège (16 mars 2002).[4] Le nombre de cas de syndromes grippaux continue d'augmenter dans le nord du pays, avec un taux se maintenant au-dessus des 2% du seuil épidémique. La plupart des virus grippaux détectés étaient de type A. Dans le reste du pays, le taux de consultations pour syndromes grippaux a diminué. A l'exception d'un virus grippal B de souche analogue au nouveau virus Victoria détecté cet hiver, tous les virus caractérisés sont similaires aux souches du vaccin actuel.

[1] Voir N° 5, 2002, p. 38.
[2] Voir N° 43, 2001, p. 336.
[3] Voir N° 7, 2002, p. 56.
[4] Voir N° 12, 2002, p. 95.
[5] Voir N° 50, 2001, p. 400.

Where to obtain the WER through Internet

(1) WHO WWW SERVER: Use WWW navigation software to connect to the WER pages at the following address: **http://www.who.int/wer/**

(2) E-MAIL LIST: An automatic service is available for receiving notification of the contents of the WER and short epidemiological bulletins. To subscribe, send an e-mail message to **majordomo@who.ch**. The subject field may be left blank and the body of the message should contain only the line **subscribe wer-reh**. Subscribers will be sent a copy of the table of contents of the WER automatically each week, together with other items of interest.

Comment accéder au REH sur Internet?

1) Par le serveur Web de l'OMS: A l'aide de votre logiciel de navigation WWW, connectez-vous à la page d'accueil du REH à l'adresse suivante: **http://www.who.int/wer/**

2) Par courrier électronique: Un service automatique de distribution du sommaire du REH et de brefs bulletins épidémiologiques est disponible par courrier électronique. Pour s'abonner à ce service, il suffit d'envoyer un message à l'adresse suivante: **majordomo@who.ch**. Le champ «Objet» peut être laissé vide et, dans le corps du message, il suffit de taper **subscribe wer-reh**. Les abonnés recevront chaque semaine une copie du sommaire du REH, ainsi que d'autres informations susceptibles de les intéresser.

Criteria used in compiling the infected area list

Based on the *International Health Regulations* the following criteria are used in compiling and maintaining the infected area list (only official governmental information is used):

I. An area is entered in the list on receipt of information of:
   (i) a declaration of infection under Article 3;
   (ii) the first case of plague, cholera or yellow fever that is neither an imported case nor a transferred case;
   (iii) plague infection among domestic or wild rodents;
   (iv) activity of yellow-fever virus in vertebrates other than man using one of the following criteria:
      (a) the discovery of the specific lesions of yellow fever in the liver of vertebrates indigenous to the area; or
      (b) the isolation of yellow fever virus from any indigenous vertebrates.

II. An area is deleted from the list on receipt of information as follows:
   (i) if the area was declared infected (Article 3), it is deleted from the list on receipt of a declaration under Article 7 that the area is free from infection. If information is available which indicates that the area has not been free from infection during the time intervals stated in Article 7, the Article 7 declaration is not published, the area remains on the list and the health administration concerned is queried as to the true situation;
   (ii) if the area entered the list for reasons other than a declaration under Article 3 (see I, (ii) to (iv) above), it is deleted from the list on receipt of negative weekly reports of the time intervals stated in Article 7. In the absence of such reports, the area is deleted from the list on receipt of notification of freedom from infection (Article 7) when at least the time period given in Article 7 has elapsed since the last notified case.

Critères appliqués pour la compilation de la liste des zones infectées

Conformément au *Règlement sanitaire international* les critères suivants sont appliqués pour la compilation et la mise à jour de la liste des zones infectées (seules sont utilisées les informations officielles émanant des gouvernements).

I. Une zone est portée sur la liste lorsque l'Organisation a reçu:
   (i) une déclaration d'infection, au terme de l'article 3;
   (ii) notification du premier cas de peste, de choléra ou de fièvre jaune qui n'est ni un cas importé ni un cas transféré;
   (iii) notification de la présence de la peste chez les rongeurs domestiques et chez les rongeurs sauvages;
   (iv) notification de l'activité du virus amaril chez les vertébrés autres que l'homme, déterminée par l'application de l'un des critères suivants:
      a) découverte des lésions spécifiques de la fièvre jaune dans le foie de vertébrés de la faune indigène du territoire ou de la circonscription; ou
      b) isolement du virus de la fièvre jaune chez n'importe quel vertébré de la faune indigène.

II. Les zones sont radiées de la liste dans les conditions suivantes:
   i) si la zone a été déclarée infectée (article 3), elle est radiée de la liste lorsque l'Organisation reçoit une notification faite en application de l'article 7, suivant laquelle la zone est indemne d'infection. Si l'on dispose de renseignements indiquant que la zone n'a pas été indemne d'infection pendant une période correspondant à la durée indiquée dans l'article 7, la notification prévue par l'article 7 n'est pas publiée, la zone reste sur la liste et l'administration sanitaire intéressée est priée de donner des éclaircissements quant à la situation exacte;
   ii) si la zone a été portée sur la liste pour des raisons autres que la réception de la notification prévue par l'article 3 (voir I, (ii) à (iv) ci-dessus), elle est radiée de la liste lorsque des rapports hebdomadaires négatifs ont été reçus pendant une période dont la durée est indiquée à l'article 7. A défaut de tels rapports, la zone est radiée de la liste lorsque, au terme de la période indiquée à l'article 7, l'Organisation reçoit une notification d'exemption d'infection (article 7).

INTERNATIONAL HEALTH REGULATIONS / RÈGLEMENT SANITAIRE INTERNATIONAL

Notifications of diseases received from 22 to 28 March 2002 / Notifications de maladies reçues du 22 au 28 mars 2002

Cholera / Choléra

	Cases / Deaths Cas / Décès	
Africa / Afrique		
Mali	20.II	
.....	1	0
Uganda / Ouganda	11.II-3.III	
.....	56	8
Zanzibar	11.III	
.....	16	0

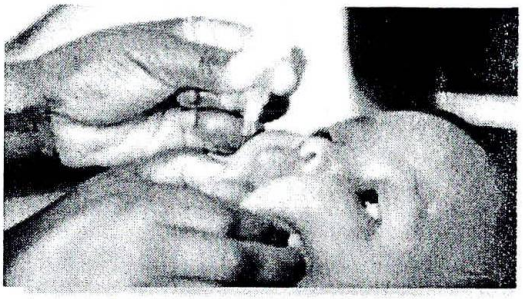
	Cases / Deaths Cas / Décès	
Europe		
Czech Republic / République tchèque	15.II 1(*i*)	0
Germany / Allemagne	15.III	
.....	1(*i*)	0

i = imported.

WWW access • **http://www.who.int/wer**
E-mail • send message **subscribe wer-reh** to **majordomo@who.int**
Fax: (+41-22) 791 48 21/791 42 85
Editor: vallanjonm@who.int

Accès WWW • **http://www.who.int/wer**
Courrier électronique • envoyer message **subscribe wer-reh à majordomo@who.int**
Fax: (+41-22) 791 48 21/791 42 85
Rédactrice: vallanjonm@who.int

Global Polio Eradication Initiative



WHO/POLIO/02.04; updated January 2002

DIS-6A.12

Post-eradication immunization policy for poliomyelitis

The purpose

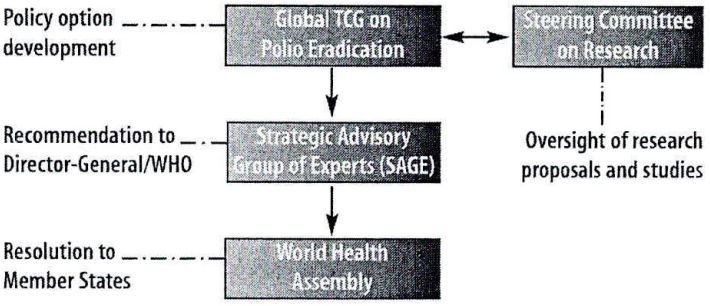
The ultimate goal of disease eradication is to interrupt circulation of the target organism on a global scale such that control measures can be discontinued.[1] As with smallpox eradication, there will be benefits and challenges to stopping polio immunization. Stopping immunization would eliminate side effects such as vaccine-associated paralytic polio (VAPP). From an economic perspective, cessation of polio immunization could save hundreds of millions of dollars every year.

Many of the challenges to stopping polio immunization are similar to those faced by smallpox, including effective laboratory containment of the virus. Unlike smallpox, post-eradication immunization policy for polio is further complicated by the fact that oral polio vaccine (OPV) has caused paralytic polio outbreaks and there has been long-term excretion of vaccine-derived poliovirus from immunodeficient persons. Thus the challenge to stopping OPV would be: 1. protecting susceptible populations from possible outbreaks due to circulating vaccine-derived poliovirus (cVDPV) and 2. minimizing the risk of a poliovirus reintroduction from immunodeficient persons, laboratories or vaccine production sites in the future.

The process

Given the need for international consensus on a post-eradication immunization policy for polio, the final decision will rest with WHO Member States represented at their annual meeting, the World Health Assembly (WHA). Through broad consultation and an extensive programme of work, the Global Technical Consultative Group for Poliomyelitis Eradication (TCG) is developing potential policy options for consideration by WHO's Strategic Advisory Group of Experts (SAGE), prior to eventual presentation to the World Health Assembly.

The process for developing post-eradication immunization policy for polio



The agenda of work developed by the TCG includes programmatic work, new scientific research, and policy development, to be completed by 2002, 2003 and 2004 respectively. All relevant programmatic data will be collected by WHO and UNICEF on issues such as inactivated poliovirus vaccine (IPV) price, production capacity, potential introduction costs, the frequency of VDPV circulation and VDPV surveillance. Overseen by the TCG's Steering Committee on Research, new scientific data will be generated on key issues such as the efficacy of IPV in developing country settings and the frequency, significance and potential impact of long-term vaccine virus excretors. To support policy development, the political, economic and operational implications of each of the potential policy options will be evaluated.

Surveillance confirms that polio outbreaks due to circulating vaccine-derived polioviruses (cVDPV) are rare, but possible. An estimated 10 billion doses of oral polio vaccine (OPV) were administered worldwide between 1997 and 2001; only two episodes of polio outbreaks due to cVDPV have been confirmed in that period: in Hispaniola (2000-1) and the Philippines (2001).

Recognizing that it will take time to collect these data, and to establish an international consensus on post-eradication immunization policy for polio, plans have been made to continue using OPV in most countries for the foreseeable future.

World Health Organization

1 *Global disease elimination and eradication as public health strategies, Supplement No. 2 to Volume 76, 1998, of the World Health Organization Bulletin.*

The progress

Since 1997 the TCG and its technical advisers have studied the evolving issue of post-eradication immunization policy for polio, supplemented by several meetings of experts to address specific issues.

After certification of polio eradication, individual decisions by countries to stop or continue oral polio vaccine (OPV) use could place populations that no longer use the vaccine at risk of exposure to circulating vaccine-derived polioviruses (cVDPV). For this reason, any cessation of OPV use would require an internationally coordinated approach.

In March 1998, WHO convened the first meeting of experts on stopping polio immunization, which concluded that "Vaccination with OPV should stop and vaccination with IPV can stop when there is (a) sufficient assurance of the global eradication of wild type polioviruses, (b) suitable laboratory containment of remaining stocks of wild polioviruses, and (c) evidence that VDPV will circulate for only a limited period in the post-vaccination era." The sixth meeting of the TCG identified a further criteria: that a global stockpile of vaccine is available if needed, with a clear strategy for its use.

In January 2000, WHO convened a second meeting of experts on "New polio vaccines for the post-eradication era", which concluded that the development of a new vaccine would pose formidable regulatory and manufacturing challenges. Consequently, a meeting in September 2000 on regulatory challenges to licensing vaccines for the post-eradication era focused on monovalent OPVs (for controlling type-specific outbreaks) and IPV based on Sabin strains (to replace the wild poliovirus strains currently used in IPV).

The detection of two polio outbreaks caused by circulating VDPV - in Hispaniola in 2000-2001 and the Philippines in 2001 – gave new urgency to post-eradication immunization policy development and highlighted the challenges to maintaining polio surveillance and immunization in countries/regions that are polio-free.

In May 2001, WHO convened a steering committee to guide, monitor and evaluate the ongoing research agenda for post-eradication policy development, under the direction of the TCG. New research was already commissioned by November 2001.

In the January 2002 edition of Clinical Infectious Diseases,[2] the TCG summarized the current status of the polio "endgame" and noted that, though challenging, there are compelling reasons for discontinuing OPV as soon as possible following eradication. Three scenarios for stopping OPV were outlined:

1. coordinated discontinuation of OPV (with or without IPV, depending on national decision);
2. replacement of OPV with IPV in all countries;
3. development of new live vaccines that would not cause VAPP and would not be transmissible.

The TCG stated that WHO's three-part agenda of work must be completed before a final decision can be made as to the feasibility of the most appropriate strategy.

The challenges

Coordinating post-eradication immunization policy – many countries may want to stop immunization against polio as soon as circulation is interrupted globally. However, individual country decisions to stop or continue OPV use could place populations at risk from cVDPVs.

Vaccine security in the pre- and post-eradication eras – as global certification approaches, an increasing number of countries may wish to use IPV, though production capacity is currently limited. At the same time, sufficient OPV must be available for routine immunization for the foreseeable future and for stockpiling against outbreaks in the post-eradication era. The appropriate range and quantity of vaccines must be ensured.

Funding for timely completion of the research agenda – the research agenda involves an ambitious programme of work requiring more than US$ 1 million per year. The timely completion of necessary research is essential to define options and make policy decisions on stopping polio immunization.

Sustaining the surveillance infrastructure and immunization coverage – see fact sheet on *Certification of global polio eradication*.

For more information on the development of post-eradication immunization policy, please contact Dr David Wood (WHO/Geneva), Tel.: +41 22 791 4050, email woodd@who.int or Dr Roland Sutter (WHO/Geneva), Tel.: +41 22 791 4682, email sutterr@who.int

Further reading

Report of the meeting on the scientific basis for stopping polio immunization, Geneva, 23-25 March 1998, WHO/EPI/GEN/98.12.
New polio vaccines for the post-eradication era, Geneva, 19-20 January 2000, WHO/V&B/00.20
"Polio vaccines for the post-eradication era: regulatory and biosafety issues", 20-21 September 2000 (in print).
Report of the sixth meeting of the Global Technical Consultative Group for Poliomyelitis Eradication, Geneva, 7–10 May 2001, WHO/V&B/01.32.

2 *"Endgame" Issues for the Global Polio Eradication Initiative, CID 2002:34 (1 January 2002)*

Global Polio Eradication Initiative

WHO/POLIO/02.02; updated January 2002

DIS-BA.13

Containment of wild poliovirus stocks

The purpose

Certifying the world polio-free requires not only stopping the circulation of wild poliovirus in human populations, the only natural reservoir, but also minimizing the risk of an accidental or intentional reintroduction of wild poliovirus into the community from a laboratory or vaccine production site. The *WHO global action plan for laboratory containment of wild polioviruses*[1] aims to locate laboratories worldwide that store wild poliovirus and potentially infectious materials, and ensure that those materials are handled under appropriate biosafety conditions in the post-eradication era. Completion of all pre- and post-eradication containment measures is a prerequisite of global certification of polio eradication.

That the last case of smallpox actually occurred as a result of a laboratory containment failure in Birmingham, England in 1978, one year after global eradication of smallpox, serves as an important reminder of the need for effective containment.

The recent intentional spread of anthrax and increased media attention to smallpox have raised questions about poliovirus as a potential bioterrorist agent. Poliovirus however is currently a low-level risk relative to agents such as smallpox and anthrax: polio's public health impact and dissemination potential are low while preparedness to detect and control polio is high. Containment, vaccine stockpiling measures, sustained surveillance and polio immunization policy for the post-eradication era will deter the use and limit the impact of poliovirus as a bioterrorist agent in the future.

The process

The process of laboratory containment of wild poliovirus was developed through international consultation. Beginning in 1997, a draft action plan was widely distributed for comment, resulting in publication of the *WHO global action plan for laboratory containment of wild polioviruses* in 1998. In 1999, the World Health Assembly unanimously passed resolution WHA52.22, urging all Member States " to begin the process leading to the laboratory containment of wild poliovirus..".

The containment action plan consists of three phases: pre-eradication, post-eradication, and post-global certification. The pre-eradication phase requires that:

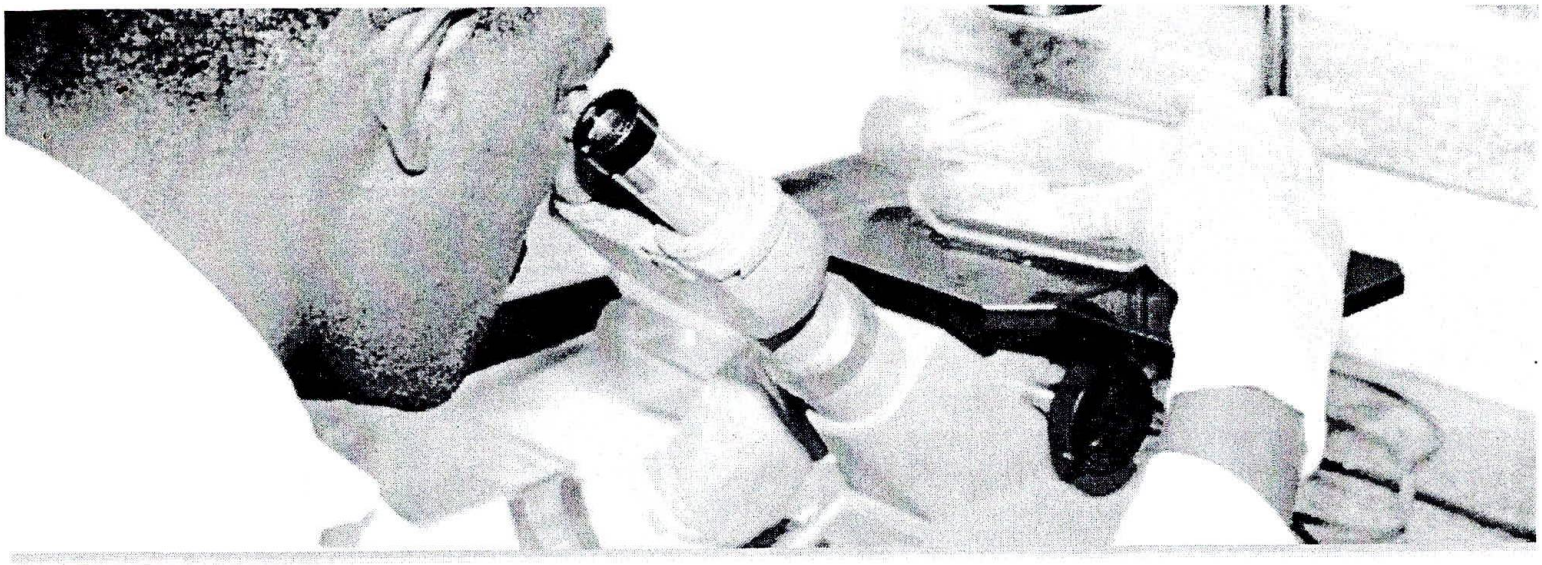
1. National authorities in all countries survey laboratories to identify those with wild poliovirus infectious or potentially infectious materials and encourage destruction of all unneeded materials.
2. Laboratories retaining such materials institute enhanced biosafety level-2 (BSL-2/polio) procedures.
3. National authorities develop a national inventory of all laboratories with wild poliovirus materials.
4. Member States begin planning for implementation of biosafety requirements for the post-eradication phase.

Laboratories should be requested to conduct a search for all wild poliovirus infectious and potentially infectious materials which include not only viral isolates and clinical specimens from poliomyelitis cases but also faecal samples, throat swabs, or environmental samples that were collected for any reason at a time and place of wild poliovirus circulation and stored in a manner known to preserve poliovirus.

The post-eradication phase begins one year after detection of the last wild poliovirus anywhere in the world. It requires all laboratories possessing wild poliovirus infectious or potentially infectious materials to implement recommended containment procedures (currently enhanced biosafety level-3 or BSL 3/polio) OR transfer such materials to WHO-designated repositories OR render such materials non-infectious, or destroy them, under appropriate conditions.

World Health Organization

1 *WHO global action plan for laboratory containment of wild polioviruses, WHO/V&B/99.32*



The progress

Although a tremendous logistical challenge, effective laboratory containment is operationally feasible, as progress in the European and Western Pacific regions demonstrates. Worldwide, as of mid-October 2001, authorities in 110 countries had appointed a national task force and started the containment planning process: 2 of 47 Member States in the Americas; 17 of 24 in the Eastern Mediterranean; 48 of 51 in the European Region; 7 of 10 in Southeast Asia; 36 of 36 in the Western Pacific. Seventy countries had already begun compiling exhaustive lists of biomedical facilities to be surveyed, with more than 60 000 laboratories listed. Eleven countries had completed all pre-eradication phase activities and submitted a national inventory of laboratories.

Although it is not possible to guarantee that all laboratories with wild poliovirus infectious materials will be identified, implementation of the global action plan substantially reduces the chance of an accidental reintroduction of wild type poliovirus from a laboratory.

Inactivated poliovirus vaccine (IPV) is produced using large volumes of high concentration, non-attenuated wild poliovirus strains. WHO is working with IPV manufacturers and regulatory authorities to appropriately contain poliovirus strains used in IPV production. Containment guidelines for IPV manufacturers will be published in 2002.

A second, updated edition of the *WHO global action plan for laboratory containment of wild polioviruses*, incorporating lessons learned from two years of experience with implementation of laboratory containment, will be presented to the Global Technical Consultative Group for Poliomyelitis Eradication in April 2002.

The challenges

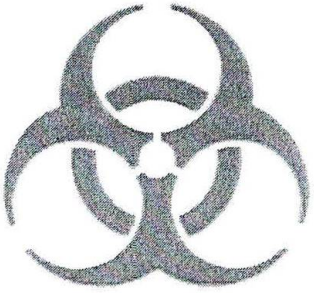
Implementation of the global action plan – the scale of laboratory containment presents a significant operational challenge requiring commitment from political leaders, diligence from national authorities implementing the action plan and goodwill from laboratories worldwide.

IPV manufacturing sites – IPV production facilities handle large volumes of high concentration, non-attenuated wild poliovirus strains, making appropriate containment especially important and challenging.

For more information on containment, please contact Mr Chris Wolff (WHO/Geneva), Tel.: +41 22 791 4524, email labnet@who.int

Further reading

WHO global action plan for laboratory containment of wild polioviruses, WHO/V&B/99.32.
Guidelines for implementing the pre-eradication phase of the global action plan for laboratory containment of wild polioviruses, WHO/V&B/00.21.
Summary sheet: Poliovirus and bioterrorism.



The History of Polio Eradication

1999

- The second anniversary of the last case in the Western Pacific falls in March.
- A large polio outbreak occurs in Angola with more than 800 cases and 50 deaths.
- The UN Secretary-General agrees to negotiate truces for immunization in the Democratic Republic of Congo.
- Dr Gro Harlem Brundtland, Director-General of WHO vaccinates children during a National Immunization Day in Côte d'Ivoire and urges the country to set a standard for the region.
- Dr Brundtland appeals to governments and donors to accelerate polio eradication.
- 6.5 million children are vaccinated during house to house immunization in Pakistan.
- National Immunization Days are conducted in war-torn Liberia.

1998

- An estimated 470 million children aged under five years are immunized during National Immunization Days.
- The National Immunization Days are conducted for the first time in Somalia and South Sudan.
- Nigeria and India improve their surveillance in a matter of months.
- The Rotary International Network of Polio Eradication Advocacy Advisors expands to Europe and Asia.

1997

- An estimated 450 million children aged under five years are immunized during National Immunization Days in 97 polio-endemic countries.
- 250 million children are vaccinated during National Immunization Days held simultaneously in China, India, Bhutan, Pakistan, Bangladesh, Thailand, Vietnam and Myanmar.
- 134 million children are immunized on a single day in India.
- The last case of polio in the Western Pacific region is found on 19 March. She is a 15-month-old girl called Mum Chanty living near Phnom Penh in the Mekong River area of Cambodia.

1996

- Nelson Mandela officially launches the Kick Polio Out of Africa campaign.
- The Organization of African Unity (OAU) adopts the Yaounde Declaration of Support for the Expanded Programme on Immunization, including polio eradication.
- 420 million children are immunized during National Immunization Days.
- A large polio outbreak in Albania, which had been free of wild poliovirus for 18 years, spreads to neighbouring countries.
- The last case of polio is identified in China.

1995

- Operation MECACAR (Mediterranean, Caucasus, Central Asian Republics and Russia) is launched: National Immunization Days are coordinated in 19 adjacent countries of the European and Eastern Mediterranean Regions of WHO. More than 56 million children are immunized.

- Cease-fires are negotiated in Afghanistan (for the third consecutive year) to allow children to be immunized during National Immunization Days.
- The Global Commission for the Certification of Polio Eradication meets for the first time.
- India organizes its first National Immunization Days, immunizing 87 million children.

1994

- The Americas are certified polio-free by the International Commission for the Certification of Polio Eradication.
- China launches its first National Immunization Days, immunizing 80 million children. Prime Minister Jiang Zemin personally administers polio vaccine to some of the children.

1992-1993

- A polio outbreak in the Netherlands, among a group who refuse to be immunized for religious reasons, proves that imported poliovirus still constitutes a threat wherever immunity levels are low.
- The virus spreads to Canada.
- The Global Polio Laboratory Network is formally established to facilitate high quality virologic investigation in all countries.

1991

- The last case of polio occurs in the Americas in September. He is a three-year old boy called Luis Fermin Tenorio living in Junin, Northern Peru.

1990

- WHO, UNICEF, partner organizations and heads of state of many countries reaffirm their commitment to the eradication of polio at the World Summit for Children.
- The Universal Childhood Immunization Initiative achieves its goal of 80 percent childhood immunization coverage worldwide.
- Mopping-up activities are conducted in the Americas.

1989-1990

- Polio outbreaks occur in China with approximately 5 000 cases reported both years.
- The US government commits funds to polio eradication.

1988

- The World Health Assembly passes a resolution to eradicate polio by the year 2000.
- Rotary International and the Japanese government commit funds to polio eradication.
- Rotary International announces that the fundraising campaign to raise US $120 million has raised US $247 million.

1987

- Rotary International launches a campaign to raise US $120 million to fight polio which provides the necessary impetus to begin the polio eradication initiative.

1985

- The Pan American Health Organization (PAHO) launches an initiative to eradicate polio in the Americas by 1990.
- The Universal Childhood Immunization Initiative is launched jointly by UNICEF and WHO, with the aim of reducing child mortality through effective immunization.

1970 -1980

- Lameness surveys demonstrate that polio is widespread in many developing countries, leading to the introduction of routine immunization with OPV in almost all national immunization programmes.

1979

- The last case of smallpox in the world occurs in Somalia.

1978

- A polio outbreak occurs in the Netherlands and spreads to Canada and the US the following year.

1974

- The World Health Assembly passes a resolution to create the Expanded Programme on Immunization (EPI) to bring basic vaccines to the world's children.
- EPI aims to build on the success of smallpox eradication and make immunization for children's diseases available worldwide.

1961

- Dr. Albert Sabin develops a "live" oral vaccine against polio (OPV). OPV rapidly becomes the vaccine of choice for most national immunization programmes in the world.
- Immunization campaigns in Cuba and in Eastern Europe demonstrate that wild poliovirus can be eliminated in large geographic areas, providing the basis for eradication.

1959 - 60

- Mass OPV campaigns are conducted in Czechoslovakia and Hungary.

1955

- Dr. Jonas Salk develops the first vaccine against polio, an inactivated (killed), injectable polio vaccine (IPV).

1948

- Thomas Weller and Frederick Robbins succeed in growing poliovirus in live cells, which lays the foundation for the development of any vaccines against polio. Six years later they receive the Nobel Prize for their work.
- The World Health Organization is established.

1938

- The National Foundation for Infantile Paralysis is established in the United States. This later becomes the March of Dimes, a fundraising organization focusing on research to support the fight against polio.

1931

- Sir Macfarlane Burnet and Dame Jean MacNamara identify several types of poliovirus, known as Types 1, 2, and 3.

1916

- An epidemic of polio in New York heightens concern on both sides of the Atlantic Ocean and accelerates research into how the disease is spread.

1908

- Austrian physicians Karl Landsteiner and Erwin Popper make the first hypothesis that polio may be caused by a virus.

1907

- Dr Ivar Wickman, a Swedish paediatrician, categorizes the different clinical types of polio.

1894

- The first significant outbreak of *infantile paralysis*, subsequently identified as poliomyelitis, is documented in the United States.

1840

- Dr Jacob von Heine conducts the first systematic investigation of poliomyelitis, for the first time developing the theory that the disease may be contagious. Von Heine's treatments are used well into the 20th century.

1789

- Dr Michael Underwood, a British physician, attempts the first known clinical description of polio, entitled *Debility of the Lower Extremities*.

1580-1350 BC

- An Egyptian stele portraying a priest with a withered leg, leaning on a staff, suggests that polio has been endemic for thousands of years.

Lesson of
Global Polio Eradication Initiative (GPEI) in India

This draft paper is being circulated to seek comments, views and collaborations for further refining this paper

Prepared for
Society for Action In Community Health (SACH)
D-1 Gulmohar Park, New Delhi 110049

By Dr. Onkar Mittal
Contact E-mail: O_Mittal@rediffmail.com
Phone- (91)-98-181-10784

CONTENTS: **Page No**

[**Abstract:** The paper suggests that the inability of the pulse-polio program to achieve polio eradication in India should surprise no one. This should not be misconstrued as a failure of a gigantic effort by lakhs of health workers and million of volunteers and participants in the program in the last seven years. The limitations of the efficacy of the oral polio vaccine and low routine immunization coverage in several parts of the state were well known to WHO and all the other important decision-makers in the country. Despite this the case for early eradication of polio was over-pushed and the risks of the failure were underplayed. At the end, the bluff has failed to achieve the success in the gamble. However the global leaders of this initiative have no accountability for this failure and it has happened in the past with other eradication programs like Malaria. Nevertheless, there are important lessons for health policy making in the country and the role of international cooperation in health].

Executive Summary

Key Issues:

1. **The paper is an initial overview of the GPEI in India.** It attempts to address the three key issues arising from failure to meet the target of polio eradication in India: (i) was it fair to impose the ambitious target of polio eradication on India and other developing countries and the world which implies that a single case of polio anywhere would be tantamount to the failure of the entire global initiative? **Could we have not managed better with less ambitious and more feasible target of polio reduction and control;** (ii) did we have a sound **technical basis** and operational strategy to embark on this super-ambitious **polio eradication** program? ; (ii) If yes, what went wrong with the **implementation** of this strategy and (iii) if not, then what were the **interests and influences that played key role in pushing this superambitious objective and strategy** in India and globally? The inferences made in this paper are based on the available information on the issue. It is perhaps not possible to avoid hasty conclusions and ideological biases while stimulating discussion and debate, especially while all the data and information has not been placed on the table. **We invite the readers and the experts in the field to place other facts and information on the table, challenge the inferences made in this paper and provide alternative interpretations and explanations.**

Failure of the Seven Years effort in India to achieve polio eradication

2. It is argued here that while the **magic bullet of pulse polio and intensive pulse polio immunization (IPPI)** might have contributed to the reduction of the transmission of poliovirus in India and other developing countries, **it has singularly failed to achieve the eradication of polio**. The deadline of the year 2000 for achieving polio eradication has already passed. It is a naked truth now for everyone that this goal is not going to be achieved in the near future. Therefore the intensive pulse polio immunization (IPPI) strategy has lost its meaning altogether and should be abandoned immediately. The foremost

requirement now is **to drop the sword of urgency to achieve polio eradication.**

3. The paper makes a plea for an independent review of the future strategy April 2003 onwards to decide the future of the IPPI and other SIAs in India. There is an urgent need to learn lessons from the failure of the program if we have to avoid repeating the same mistakes in the new phase of the program beginning from April 2003. This would also require **a review of the lead role played by the international agencies** like WHO, UNICEF and World Bank in this program in order to avoid being misled by them in future.

Real Magnitude of the Problem: Is polio eradication an overarching priority?

4. It is also argued that WHO estimates of polio cases in India (and globally) were perhaps gross overestimates when it launched the global polio eradication program in 1988. Considering that in India, the confirmed polio cases amongst the reported AFP cases are just 10-20 % of the total, **the previous estimation of the paralyses attributed to polio virus requires a review.**

5. It further describes, how **everyone including WHO, UNICEF and World Bank have admitted that polio eradication is not a priority for the developing countries**. Yet the program has been justified on the most flimsy argument that **it may result in small savings to the western countries on the expenditure on the polio vaccination** once the polio eradication is achieved globally. This is a most phony justification for flogging the already weak health systems of the developing countries to this exhausting marathon run. The billions of dollars spent on this program could have been more efficiently utilized to solve more pressing problems and the rehabilitation of the decaying health systems of the developing countries. It calls for making realistic exercise of **estimation of the opportunity cost of implementing this program and opportunities lost in not implementing the more appropriate programs.**

The Politics of WHO-Why Did it over-push the case for eradication?

6. It is further argued that WHO **over-pushed the case** for eradication of poliovirus in India by using the example of Latin American countries that was not really applicable in the Indian situation. **It also underplayed the risks of the failures** to achieve the polio eradication in India and other developing countries due to well known limitations in India and other developing countries. These limitations were (i) very low routine immunization coverage in certain states in India and (ii) the low efficacy of the OPV in providing sufficient immunity in India and other developing countries. **WHO also overemphasized the possible benefits from the global eradication of poliovirus** and **it underplayed the negative impacts on the general health services and the risks and costs of the failure of the program**. . It did all this against its own wisdom. It narrates how, after the failure of Malaria Eradication Programs globally, **eradication became a 'bad word' in WHO**, notwithstanding the success achieved in small

pox eradication earlier. It asserts, therefore that WHO, in its organizational wisdom could not have, on its own, embarked on a global eradication program for polio. Based on the information available, it is difficult to figure out what influences have played a role in WHO for pushing the polio eradication as an utmost urgency for the developing countries. **We admit our failure in solving this riddle and invite others to help us in this endeavor.**

7. The paper suggests that: the Global Polio Eradication Initiative (GPEI) is yet another negative exercise in mismanaging the health priorities and programs in the developing countries. The UN institutions, their corporate philanthropic partners and the gullible health bureaucracies, technocracies and political leaderships of the developing countries, all are equal partners in this futile and absurd exercise. We also question the **right of the G-8 nations and international philanthropies like Gates Foundation to provide earmarked** resources for particular disease control programs and thereby **distorting the health policies, priorities and programs** of the developing countries. This is the biggest blemish on the international cooperation in health. Considering that global commitments are involved, it is necessary for India to play a more proactive role with the governments of the other SAARC countries and the African countries where WHO is pushing the program for the last several years. The paper also calls for learning lessons from the entire GPEI for the functioning of WHO and the GPPP within WHO.

The way forward for India

8. There is a greater urgency to make critical decisions for **strengthening the health systems in India.** Only this can enable us **to strengthen the routine immunization program** and achieve the polio eradication in due course. **There is no shortcut to this process.**

9. The positive lessons should be drawn from the gigantic efforts made by lakhs of health workers and millions of volunteers and participants in the program throughout the country. The program should be publicized as a success in reducing the transmission of poliovirus in the country and not a failure, just because some cases are still occurring. The live contact made with millions of poor and disadvantaged people for the first time by the country's health systems should be strengthened for health improvements in other areas and with involvement of the newly activated civil society.

10. It also draws attention to the **right of compensation for those who have suffered from Vaccine Induced Paralytic Poliomyelitis (VIPP).** It also calls for **comprehensive rehabilitation** of those suffering from residual paralyses (due to poliovirus and other causes) and not to ignore the issue in our quest for defeating the virus.

1. INTRODUCTION

Polio is an infectious disease caused by poliovirus. The disease can strike at any age but affects mainly children under three (50-70% of all cases) and causes paralysis. In follows infection with any one of the three related enteroviruses: polioviruses type 1, type-2, or type 3. The virus usually enters through mouth and then multiplies inside the throat and intestines. The incubation period is 4-35 days and the initial symptoms include fever, fatigue, headache, vomiting, constipation (or less commonly diarrhea), stiffness in neck, and pain in the limbs.

Once established, poliovirus can enter the bloodstream and invade the central nervous system spreading along nerve fibers. As it multiplies, the virus destroys the motor neurons, which activate the muscles. These virus cells cannot be regenerated and muscles no loner function. Muscle pain, spasms and fever are associated with rapid onset of acute flaccid (floppy) paralyses. Polio paralyses is almost always irreversible. The muscles of leg are affected more often than arm muscles. More extensive paralysis, involving the trunk and muscles of thorax and abdomen, can result in quadriplegia. In most severe, often fatal, cases, poliovirus attacks the motor neurons of the brain stem reducing breathing capacity and causing difficulty in swallowing and speaking (bulbar polio). Without adequate respiratory support, bulbar polio can result in death by asphyxiation.

Although polio paralysis is the most visible sign of polio infection, less than 1% of polio infections ever result in paralysis. Most cases, as many as 90%-produce no or very mild symptoms and usually go unrecognized. The remaining cases-("abortive polio") involve mild flue like symptoms common to other viral infections-mild fever sore throat, abdominal pain, vomiting-but do not result in paralysis. About 5%-10% of all polio infections result in aseptic meningitis.

Global Context:

Since 1980s, some experts had been making a strong advocacy for mobilizing the global opinion in favor of polio eradication. Based on the 'scientifically rational evidence', they developed a strong case for desirability and feasibility of global polio eradication. They pleaded that " if the world unites in a global effort to eradicate polio, we can look forward to the day when parents need no fear that polio will cripple their children and when that money that today is allocated to polio vaccination and rehabilitation can be diverted to other health priorities. This seemingly "fool-proof case" was backed by WHO from the 1988.

However there were already debates amongst the experts nationally and internationally about the efficacy of OPV in the developing countries and the dangers of outbreaks of epidemics due to loss of natural immunity and

incomplete coverage with OPV vaccination. Different solutions were being suggested to meet this challenge. However these debates were ignored completely when the pulse polio was launched in 1994-95 due to vigorous efforts by a combination of forces. These issues bounced back with vengeance in subsequent years.

In the year 1988 the World Health Assembly made the declaration for the global polio eradication to be achieved by the year 2000. In the year 1999, a special session of the global assembly met again to press for achieving this objective by the year 2000. In between the pulse polio program as the chosen strategy to achieve this objective got the backing from the G-8 nations, World Bank, the vaccine industry and global philanthropies. This also suited the gullible third world bureaucracies as easy short-cut solutions and opportunities for mass mobilization for health has always been a great narcissistic enterprise for them.
The GPEI or Global Polio Eradication Initiative is being portrayed as **the "*war between polio virus and polio vaccine*"** . The monitoring screens of the www.npspindia.org project the figures for the cases of Acute Flaccid Paralyses (AFP) and the confirmed poliovirus cases month by month and year by year for the last five years. The real battle has more story in it than you can watch on the screen: UN institutions playing the mixed roles of advisers, implementers, monitors and purchasers of vaccines; the magnanimity of the bilateral donors, world bank and Gates Foundation and Rotary International for liberally financing this very expensive program; the hidden and invisible hand of the vaccine industry in influencing and pushing the program; the other minor players in the form of thousands of health workers, lakhs of volunteers and millions of mothers and children all anxious and confused at this ordeal, in the states, districts, cities and urban slums and villages and their incentives motivations and faults; and the future battles that will be fought globally, nationally and locally on the soil of victory or defeat of this campaign.

This is a feeble attempt to narrate a fragmented story. Only those who are sitting on the highest policy making bodies and who are the esteemed weavers of this story can collectively help to complete this fragmented story. Individually they may not be aware of its various facets or may be they have not even given it a thought. To complete the jigsaw puzzle- you need the genius of Agatha Christie or Sir Arthur Coyle

The Indian Context:

It is a mind-boggling exercise to find out the actual incidence of AFP cases due to poliomyelitis infection in India in early nineties (see annex-2 for details). There appears to be reasonable ground to believe that Polio was already on the decline in India when the pulse polio program had been started in the year 1994-95. Several states in India were already polio free. This may have been due to better availability of sanitation and potable water to the population as well as the child

vaccination program launched in the country since the early eighties. With continued effort in promoting the general vaccination program in the country the polio cases would have further declined in number.

Eight Years ago, in the year 1994, some of the leading pediatricians in the city of Delhi had approached the then Health Minister of the Government of National Capital Territory of Delhi to undertake the Pulse Polio Program for eradication of polio in the city of Delhi. In the same year the States of Tamilnadu and Kerala also took up the pulse polio campaign. GOI subsequently took it up as a National Program in the year 1995, in the hope that it will be possible to eradicate the polio from the country, just as small pox and guinea worm had been eradicated earlier. This resolve was further helped by the promise of liberal support for financial grant by the international agencies to meet the costs of the entire exercise. The purpose of this paper is to inform those who are seeking answers to the **impasse we seem to have reached on the Polio Eradication Initiative in India after 26 rounds of National and Sub-National immunization days for pulse polio at the expense of nearly a few billions of rupees**. Despite the promise to meet the cost by grants from the bilateral aid, India has been forced to take a loan of $210million from World Bank-IDA in the year 2000 and more loans would be required in the near future for the same purpose for this very expensive strategy. The cost calculations for the program do not include the administrative costs and the negative effects on the general health services by devoting utmost priority time for the planning and implementation of these exercises at increasingly frequent intervals. We would like to use it as a case study to sensitize on the various facets of health policy making in India under the varied global influences.

More immediately, the following issues are highlighted in this paper (Under Preparation):

Goal: - What is the problem that we are trying to solve? Are we addressing the all the paralytic illnesses of the childhood or just those attributed to the poliovirus infection; the magnitude of the problem compared to other childhood and adult morbidity and mortality; Change in the case definition from clinical to virological and contribution of this to decline in the reported cases of poliomyelitis.

Desirability: - Why do we want to give priority to solve this problem urgently? Control vs. Eradication

Strategy of eradication and feasibility: - how do we want to solve this problem? Shift in India from the earlier strategy of 2 NIDs to the fast track approach of Intensive Pulse Polio Immunization (IPPI) in 1999-2000 and its results. The experience of Americas and Europe and other countries in Polio Eradication.

Resources: How much resource we are putting into this. Expenditure incurred on the program till date; mobilization of resources from international grants and loans; future needs for resource mobilization if we continue to use the current exorbitantly expensive strategies.

Responsibility and Accountability: Who are the players involved; the technical leadership provided by the WHO and its alliance partners to the GPEI in India; the interest of G-8 nations and role of WHO advocacy for the GPEI; the hidden hand of the vaccine industry.

Recommendations: Where Do we go from here, what should be the appropriate way forward keeping in view the successes achieved and not achieved till date. What lessons should we learn for health policy and international cooperation?

The main events of this story are captured in very brief below.

1950s - Discovery of SALK and SABINE Vaccines

1960s Polio Elimination from USA

1978-Global Eradication of small pox

1984- Rotary International Initiative on Global Eradication of Poliomyelitis

1985-India starts EPI; The Pan American Health Organization (PAHO) launched an initiative to eradicate polio in Americas by 1990.

Year 1988

In May the World Health Assembly resolved Global Polio Eradication by the year 2000; About 35,000 polio cases reported world-wide (the estimated number of cases by WHO-3,50,000)

Year 1990

World Summit for Children in New York endorsed the polio eradication goal

Year 1991

- Number of reported cases brought down to 13,500.
- Emerging polio free zones identified, including the Pacific Rim, southern and eastern Africa, North America, the Middle East, and Western Europe.

- Last case of polio in Americas, involving a three-year-old child in Peru.
- Western Hemisphere declared Polio Free
- Vigorous advocacy by WHO and other experts for the Global eradication of Polio
- Debates around the efficacy of OPV in the developing countries

1992

WHO revised plan of action for polio eradication urged greater political commitment, increased funding and improved surveillance systems

1993- WDR report on health

1994 – Delhi, Kerala, Tamilnadu launch Pulse Polio Program

1995- GOI launches Pulse Polio Campaign for polio eradication

1997 – In India AFP surveillance and laboratory network operationalised through WHO support

Western Pacific declared polio free

1998- Europe Declared Polio Free

1999- Shift in strategy; Intensive Pulse Polio Immunization launched in India

2001 – Indian strategy turns full circle – renewed stress on routine immunization strengthening. India takes World Bank loan. New vaccines introduced in the selected districts by GOI in the routine immunization program.

2002-03- 1400 confirmed case despite total number of 26 rounds Of the NIDs and SNIDs (in high-risk states); other routine immunization for polio and not counting the large number of mop-up rounds.

FACT SHEET OF POLIO ERADICATION PROGRAMME IN INDIA 1995-2003

Year	Number of rounds	Budget	Cases

1995-2000	**95**- 2NID	$ nearly 200 million for five years	95
	96-2NID		96
	97-2NID		97-**524**
	98-2NID		98-**1931**
	99-00-see next		99-**1126**
2001-2005	**October 1999-2001**- Twelve rounds in total NIDs and SNIDs. In addition Mop up rounds and outbreak immunizations. Some children were subjected to 18 doses in 18 months.	$ 450 million plus other items could be nearly 600 million plus 30 percents costs calculated for GOI contribution in kind PLUS excess expenditure incurred in 1999-2000	**265** cases in 2000 and **27** cases till September 2001. No Cases expected next year. Battle against polio nearly won.
	2001-02- 2 NID and 1 SNID		Final case tally in 2001- **268**
	2002-03 2 NIDs plus ?		**1400 in 2002**
	2003-04 proposed 4 NIDs and 4 SNIDs till February 2004		

2. The STORY OF POLIO ERADICATION IN INDIA:

(FOR SOME OF THE ISSUES IN DETAIL SEE ANNEX-2)

2.1 HOW TO ACHIEVE ERADICATION-THE STRATEGY

Before the launch of Pulse Polio

Routine Immunization program in India

"Overall India has made fairly good progress on immunization. The country reported that it had met the 90%coverage with EPI vaccines. Later it became clear that reported coverage had been substantially over-reported. False optimism based on over-reported coverage contributed to a plateauing in program performance in the first half of 1990s. The best recent estimates suggest overall coverage is now about 55-60%. **Nevertheless the number of cases of vaccine preventable diseases has continued to go down**. Polio cases declined from 24,000 in 1988 to 3854 in 1998 notwithstanding greatly improved reporting of disease. The number of reported measles cases declined from 2,48,000 in 1987 to 34,000 in 1998, but actual number of cases is much higher at both points of time. India accounts for at least one quarter of all measles cases globally".

The debate on the efficacy of polio vaccine

" From the inception of the WHO Expanded program of immunization (EPI), the author and the WHO experts were in complete disagreement as to what adequate immunization is. While the WHO EPI experts insisted that 3 doses of OPV for 85% of infants were sufficient to control poliomyelitis, the author insisted that they were not. The results of very carefully conducted studies in Vellore in 1970's had shown that the protective vaccine efficacy was in the region of 75%. ..... Immunization against poliomyelitis is adequate only when poliomyelitis has been completely prevented- both at individual level and at the community level. We knew that poliomyelitis continued to occur in individual children even after receiving 3 doses of OPV. Had this phenomenon- vaccine failure-been quantified and investigated, we would not have been in this sorry state of affairs as we find ourselves today in which half the children with poliomyelitis are indeed immunized with 3 doses of OPV. The high frequency of vaccine failure in itself was an indictment against the 3 dose schedule."- **T. Jacob John**

Pulse Polio launched

The strategy evolved in two phases- the first phase was from the year 1995-99 when two rounds of pulse polio were done each year in the form of National Immunization Days (NIDS). In the second phase beginning from end of 1999, Intensive Pulse Polio Immunization Activities were launched that included NIDS,

SNIDS, Mop-UP Rounds and house to house visits for giving the OPV dose to the children who were not reaching to the booths. This is described in some details in the following pages:

The First Phase- Year 1995-98

In the year 1995 the overall strategy had four main components:

- Maintaining high routine immunization coverage
- Providing supplementary immunization campaigns nationwide
- To boost levels of polio immunity – National Immunization Days-NIDs
- Developing effective surveillance systems capable of detecting and investigating every case that could be poliomyelitis
- Localized immunization campaigns once the incidence of polio is reduced to a few pockets

The PPI program consists of the second and fourth components of the strategy outlined above. It was expected to last five years over which time the focus of attention would shift from nationwide supplementary immunization campaigns to 'mopping up" operations.

WHO recommendation was that NIDs target all children under five years of age. In India it had been decided to restrict the target group to the under threes for both pragmatic and logistical reasons. MOHFW believed that the scale of operations required to immunize 75 million children in one day twice within six weeks stretches their capacity to the limit, and to add a further 50 million children to the target group would constrain the system. The additional cost was not believed to be justified and thought to be difficult to meet. As the great majority of polio victims were in less than three years old, the technical implication of restricting the immunization coverage to this group would be to extend the time taken to eradicate polio by one or two years.
The major activity in the first year was to be to provide extra doses of oral polio vaccine (OPV) to all children under 3 years of age in India on a single day regardless of previous immunization. An estimated 75 million children were to be immunized twice in two rounds six weeks apart. Children in their first year of life were to continue to receive three doses of OPV (and a fourth doses in the second year) under the routine polio eradication strategy.

Risks

The main risks to project success in the first year were assessed as:

- Weak institutional capacity in some states reduces immunization coverage.
- Strategies to reach high risk pockets are not appropriate
- Lack of transport prevents timely delivery of vaccines.

Despite the risks identified above, the PPI was expected to have a successful outcome in its first year, defined as achieving immunization coverage of not less than 70 percent nationwide. Countries that have undertaken PPI program and were successful in eradicating polio after four or five years achieved coverage rates in the first year of their program of 70 percent or higher e.g. China and Brazil. Both countries saw a very large drop in the number of reported polio cases in the second year of the PPI directly attributable to good immunization coverage achieved in the first round of NIDs.

It was expected that the coverage would be much higher in some states than others. Based on expert advice, the average coverage per state was expected to range from 90 percent plus in the southern and western states down to 55 percent in the problem states of Uttar Pradesh and Bihar, and some parts of Madhya Pradesh and Orissa. Coverage in rest of India was expected to be 75 percent.

The risk of project failure was therefore very low in the first year. **The main risks over the life of the project was assessed, as the performance of the weaker states will negate the gains earned elsewhere and that incomplete surveillance would weaken follow-up monitoring capacity**. GOI was stated to be aware of these risks and planning to tackle them in the second year of the PPI.

Justification- see annex-2

Indicators of success

The main indicator used to judge the initial outcome of the NIDs was the number of polio doses administered divided by the target population. The PPI project aimed for 100 percent coverage, while knowing that this is never achieved in practice. Coverage of more than seventy percent in the first year was considered satisfactory and coverage of more than 80 percent was considered good.

The standard indicator used to measure the short term impact of NIDs was the fall in number of reported polio cases in the following year. This was expected to be steep typically very steep where coverage was either satisfactory or good. It was reported that following a mass polio immunization

campaign in Delhi in late 1994, which achieved good coverage, the number of reported polio cases fell from 963 in 1994 to 66 cases in the first eight months of 1995.

The indicator of project impact over 4-5 years implementation period included

- continuing drops in the number of recorded polio cases each year,
- a fall in the number of areas classified as high/risk;
- the disappearance of the number of types of polio virus (there are three types and type 2 normally disappears first)
- and finally no cases of polio reported.

The second phase –1999-2003

Assessment of last three years

It was clear that all but last of the indicator of project success had been achieved.
NIDs in India had consistently reached 90% or more of the targeted children. This was backed up by high quality surveillance which has increased the non-polio AFP rate to more than 1 per 100,000, managed an appropriate stool collection rate of 72% and provided laboratory results on time in more than 80% of cases. Virologicaly confirmed cases of polio had dropped from 1932 in 1998 to 173 in 1999. P2 cases had reduced to just six and are now confined to one state. P3 spread was between Delhi Uttarpradesh and Westbengal and P1 whilst more generalized is predominantly found in UP. P1 lineage was decreasing and there was an overall decline in biodiversity. Progress in India had a substantial impact on the global eradication initiative, and the Indian model was now being replicated worldwide.

However, even 10% of children missed by PPIs means that an estimated 13 million children were not captured.

A number of issues led the GOI and WHO to consider revisions to the existing strategy:

- Lack of a consistently high cushion of immunity through good routine immunization coverage

- Additional rounds of NIDs or sub-NIDs (SNIDs) are appropriate in areas where poliovirus transmission had previously persisted. – or in areas where the routine immunization program does not attain high coverage. In north eastern Brazil, NIDs of three rounds were required to achieve polio eradication. In large parts of China, four

rounds of NIDs/sub-NIDs per year allowed the country to reach polio zero in only two years.

- The efficiency of immunization – i.e. probability that the vaccine fully protects an individual against infection and paralytic disease depends on how well individuals respond to the vaccine.

- Considerations to increase the number of rounds centers on the need to interrupt transmission by the agreed target date as well as the relative number size and conditions of the high risk areas in the country

- Birth rates are so high that the absolute number of children in the annual birth cohort is large.

A meeting of the Indian and international experts on polio eradication was convened in early May 1999 to review the Government of India's polio eradication strategies. Drawing on the lessons above the group of experts recommended modifying the eradication strategies and these were accepted by the government.

The New Approach in 1999- Intensive Pulse Polio Immunization

India will conduct four nationwide OPV immunization rounds of PPI between October 1999 and January 2000. In addition, eight priority states will conduct two statewide supplementary PPI rounds between February to April 2000. Unlike during previous rounds, both fixed-post and intense house to house immunization will be used during each planned round 1999 to 2000 to assure that all eligible children are identified and immunized.

Each round would last three to four days.

Table: A comparison of the strategies in the two phases:

1995	2000
Estimated expenditure –Rs 200 crores per year 25 percent resources were to be spent by the state government. The rest from	Estimated expenditure- Rs 600 crore per year All Expenditure is mobilized from external aid. In addition to grants, loan

the grants. No loan was envisaged.	was taken from the world Bank
Strategy ▪ NID as SIA for 2-3 years- 2 campaigns per year ▪ After that localized campaigns in selected pockets for a few years ▪ The routine polio immunization will take place regularly Only children upto the age of three years were given the polio drops A great stress was laid on completing the entire pulse process in a single day as a technical necessity No house to house visits Though a target of one hundred percent coverage was kept, it was expected and envisaged that 70 to 80 percent coverage can be achieved and this will be sufficient to bring down the number of cases significantly	Strategy ▪ Even after going on for five years it will go on for three more years. Strategy after that was still to be decided ▪ More NIDS, ▪ SNIDS introduced in eight states where polio cases are still occurring, ▪ mop up rounds Polio drops given to children upto five tears of age The process was now being allowed to be completed over a period of one week. House to house visit are part of the entire process Routine immunization was almost negligible in UP, Bihar and Jharkhand Stress was now to achieve hundred percent coverage which is impossible to achieve Pendulum continued to shift on the intensification pulse polio immunization and strengthening routine immunization
Role of WHO- Technical adviser Role of UNICEF- technical advice	Role of WHO extended to monitor, surveillance, implementation support and supervision of the program Role of UNICEF- contractor for purchasing all external vaccines Contractor for the expensive social mobilization programs

There was greater overt emphasis on epidemiological justification for the entire program- the control and eradication of the disease	The emphasis has shifted now on the economic justification of the eradication and need to save on the cost of the polio vaccine in future. It is now agreed that this is not an epidemiological priority for the developing countries and they should make this effort in the global interest (i.e. of the developed nations saving on the cost of the vaccine)

Risk and benefits of NIDs in the period

The process of PPI thus far has been characterized by a centralized technocratic ally driven and non consultative approach, captured in one stakeholder perception that "there is compulsion from authorities to give polio drops." Strategic decision on intensifying the program through increasing the number of NIDs and adopting house to house strategies were taken centrally with no consultation with those likely to be most affected. i.e. frontline health staff or vaccine acceptors. Similarly there was no consideration to identify user and provider concerns and priorities within formulation of national media strategies.

Under PPI, all districts in the country were tasked to immunize every child under 5 years old eight times in the next 18 months. In high-risk districts this could be up to 12-18 times, including the SNIDs and the mop-up rounds. The degree of intensification, in particular opportunity cost to mothers bringing children to booth, confusion on the part of acceptors as to the need for this intensification and the demand on volunteers had not been explored with stakeholders in ways that could inform the program.

Table: Total NIDs and SNIDs in India till date:

	NID	SNID
1994	2 in Delhi, Kerala and Tamilnadu	Nil
1995-96-97-98	2 per year-total 8 all over country	NII
1999-2000-	24th October 1999	27th February 2000
	21st November-1999	26th March 2000
	19th December-1999	

	23rd January-2000	
2000-01	10th December 2000	27th February 2000
	21st January 2001	5th November-2000
2001-02	2nd December-2001	14th October-2001
	20th January-2002	
2002-03	5th January-2003	29th September 2002
	9th February-2003	17th November 2002
2003-4	April-03	
	19	7
Total NIDs and SNIDs All over the country excluding Mop-Up rounds	**26**	

It is clear from the above that a child born in a high risk state in April 1998 would be expected to get 18 doses of pulse polio, three doses of routine immunization and other doses in the mop-up rounds in course of first five year of his or her life.

2.2 FINANCIAL RESOURCES MADE AVAILABLE

During our interaction we were surprised to hear from some of the top decision-makers that that resource constraint was never an issue for the health sector and it was always possible to find financial resources for a good cause. It was difficult to pull these people into a debate on whether these resources could be put to better use elsewhere?

The projected resource requirements for Pulse Polio Immunization have continued to increase in the different phases of the program. The allocation in the tenth plan for Pulse Polio for the year 2002-03 is rupees 400 crore- 240 crore for purchase of vaccine and 160 crore for operating cost. [400 crore is almost one-fifth of total family welfare program recurring expenditure in India in 1997-98.] The total allocation for pulse polio is 1450 crores - (870 crore for purchase of vaccine and 580 crores for the operating cost).**This is much lower than actual projections made for the donor agencies. The estimated resource requirement for the year 2001-05 has been placed at Rs 3000 crores. –See below-**

It would be important to bear in mind that the cost of Govt. of India on EPI vaccine purchase in 1998/99 was rupees 75 crore and in 199/2000 98 crores-(the expenditure on polio vaccine was nearly Rupees- 40 crores per year?). The tenth plan document has earmarked a total of 1410 crores rupees for the immunization program.

The resources have been made available in the last seven years by the donor agencies for the purchase of vaccines, publicity of the program (IEC), and strengthening the surveillance. In important chunk of resources

have been provided directly to UNICEF and WHO for managing different aspects of the program. The gaps in the available resources have been made from the loan of the World Bank.

Financial Commitment for external donors:

- ✓ 1995-96- $ 5 million;
- ✓ 1996/97-$ 34 million;
- ✓ 1997/98- $ 37.8 Million
- ✓ 1998/99- $ 51.87 million.
- ✓ 2001-05- projected partner contribution- $ 226 million projected cost $563 million

No cost calculations have been done for the staff time and other local resources invested in the program as well as the opportunity cost of the volunteers' time and mothers time for participating in this program. World Bank has estimated domestic inputs into Polio campaign at US$30 million for expenditure related to booth management, transportation, anganwadi workers, school teachers and other NGO activities. An additional US$26 million is estimated for indirect GOI inputs including staff and management.

Sustainability- According to World Bank, given the nature of nature of polio elimination approach, financial sustainability is not an issue since campaign will end with elimination. In fact total earmark of polio may not be used. At the time of the loan (year 2000), it was expected that need for more campaigns in year 2 and 3 of the project will depend on the findings of the surveillance system. If, as expected, the pockets of remaining wild poliovirus are localized, campaigns will be scaled back producing budgetary savings that can be applied to strengthening routine immunization. It also suggested that there is always a risk that complete elimination will not take place requiring additional funds in the future. The strong surveillance system, however, and the targeted mop up strategy should minimize that risk.

Some details on donor funding

The cost projection for at the beginning of the IPPI phase in 1999 are given below:

In the year 1999- cost projections (in $ million)	
1999-2000-	179.04 (including GOI cont.)
2000-2001	179.04

2001-2002	8.40
2002-2003	8.40
2003-2004	8.40

The costs projections for the program during 2001-2005

These were further revised later on. The DoFW prepared in the year 2000 an alternative estimated Resource Requirement –ERR to seek funds from the donor agencies. This totaled $ 563.48 million or nearly **Rs. 3000 crores.**

Table: Estimated Resource Requirement for Polio Eradication-year 2001-05

	NID/SNID	Mop Up Immunization
Vaccine	211.55	35.54
Training-Micro-planning	20.10	1.83
Transport	25.15	9.61
Mobilisation of vaccinators/supervisors	55.02	9.40
IEC and social mobilisation	56.64	9.82
Supplies and logistics	3.14	3.07
	371.60	69.26

Subtotal-

- Supplementary Immunization- $ **440.87** million
- AFP Surveillance- $ 51.25 million for WHO
- Containment of wild polio virus- 0.25
- Strengthening routine immunization- 71.12

- **Total - $ 563.48 million**

- GOI Contribution in Kind estimated to be 30% of the above cost estimates

  Projected partner contribution- **$226.64 million**
  Shortfall- 337.75

In response to this, the donors made Year by year commitments and no long-term commitments

Box: Donor commitment for polio eradication in India in year 2000

Partner	Contribution in $ million (year 2001)
CDC	50
DANIDA	5.80
Italy	6.0
Japan	38.0
KFW	10.0
Netherlands	6.70
Rotary Intl	1.45
Rotary Corporate Campaign	5.0
UN Foundation	2.0
USAID	14.52
World Bank	86.42 (RCH Project?)
UNICEF	?

In order to met the resource gap, India mobilized an interest free loan from IDA World Bank for the polio eradication. The loan from World Bank was taken under the India The Immunization Strengthening Project (a hidden name for polio eradication program)

Project ID- INPE-7330
Loan – Government of India
Date – April 2000
Total finances
Amount – US $142.6 Million
Project implementation period- 3.5 years- (2001-04)
Project components

- ✓ Polio Eradication: US $100 million
- ✓ Strengthening Routine Immunization: US $38.0 million
- ✓ Strategic Framework development for vaccine preventable diseases- US $4.4.million

UNICEF will be the procurement agent for the vaccines. For other items like cold chain equipment, stoves, sterilizers, cards, registers printing and some medicines, contractors acceptable to Bank will be engaged.- **How much commission for UNICEF- to be explored further**

–

Box- various Cost of vaccine – to be explored further

- According to International Public Health 2001- **$ 0.02/dose**
- One of the 1999 document – **$ 0.07 per dose**
- Estimates for global savings- **$ 0.48 per dose**
- Total cost of vaccine in 1999-2000 **$ 77.30 million or 350 crores**

At the request of Government of India, the donors have made the following financial resource available for WHO-India

Table: Budget for WHO strategy Framework

• Policy and Strategy development	1,50,000
• Supplementary Immunization	13,726,250
• AFP Surveillance	40,278,684
• Program and resource management	5,875,000
• Strengthening Immunization Services	3,700,500
Total	**$ 63,730,434**

Or nearly 300 croers –

WHO also charges 10% administrative charges over and above the cost estimates

It will be interesting to note in this context, the commitment of donors' resources globally for the GPEI

Table: Global Contributions for pulse polio in $ million
SOURCE- www.unicef.org/newsline/poliopkinvestment.htm

US (CDC-USAID)	598
Rotary International	462
United Kingdom	341
Japan	200
Netherlands	110
Germany	65
Bill and Milinda Gates Foundation	50
Denmark	35
UN Foundation	31
	Total $1892 million or nearly Rs 10,000 crores

Total contribution of DFID till 2000 to polio eradication was 130 million sterling pounds including 60 million in Indian subcontinent. Total financial requirements to ensure polio eradication by 2005 were estimated to be $ 1bn of which $550 million were already pledged in the year.

2.3 WHO ARE INVOLVED IN THE SOLUTION OF THE PROBLEM

Policy process – Governance and institutional issues

India began its universal immunization program in 1985 which included giving three doses of OPV to children in their first year of life and a fourth dose in the child's second year. As a result the number of polio cases in India began to fall steadily. In 1988 India adopted the WHA resolution on polio eradication. The first strategy adopted was to take a staged approach under which eleven states were targeted in an effort to eradicate polio in part of the country. The intention was to repeat the exercise in other states once the first stage was completed. This strategy which relied on routine immunization program did not achieve its goal.

In 1994 India undertook mass immunization (PPI) campaign in Tamilnadu, Kerala and New Delhi, on top of the routine immunization program, which were successful in greatly reducing the number of reported polio cases in the first eight months of 1995.

MOHFW obtained the final approval for the 1995/96 PPI campaign from the State Ministers and Secretaries in the middle of July 1995. They held a meeting at the end of July to which officials aid donors and NGOs were invited to explain what would be involved and to request support for the project.

- Ministry/ Cabinet
- Planning commission Parliamentary standing committee
- Administrators -vs technocrats-
- ICMR, NICD
- Centre state district officers CMOs panchayats- demand driven or supply driven
- Professional groups-civil society
- CAG
- Vaccine Industry-
- Role of dissenting voices what are the appropriate forums for debate
- WHO/UN

- The strategic Plan 2001-2005 was launched at Global Polio Partners summit in September 2000 in New York

Box: Partners in Global Polio Eradication Initiative (GPEI)

International Partnership of

Rotary International
UNICEF
CDC -USA
UN Foundation
Bill and Melinda Gates Foundation
Governments of Denmark; Italy; Japan; Germany; USA; UK
World Bank
Rotary Corporate Campaign
Private Companies-De Beers; Vaccine Manufacturers
World Bank and DFID have provided majorities of resources

World health Assembly (WHA) reaffirmed and endorsed acceleration of activities in 1999.

Global Technical Consultative Group –

- 7 International experts on immunization, surveillance and disease eradication

2.4 WHAT HAS BEEN THE ACHIEVEMENTS AND FAILURES

It is time to take stock of the situation and see what has been achieved so far and how far do we need to go down this route before the desired success is achieved. We also need to assess the costs that are involved in the future.

Eight years later the goal is far from achieved. The WHO-India has developed a very elaborate surveillance system for detecting polio cases in the country. In the year 1998, 1932 cases were reported and this came down to 268 in the year 1999. However this number has increased to nearly one thousand four hundred (1400) in the year 2002 (excluding the vaccine induced cases). This has disappointed everyone and the hope of achieving the polio eradication by the end of 2001 in India and globally, has become dismal now.

Table: No of polio case after Pulse Polio Campaign in India

Year	No of AFP cases	No of cases of confirmed poliomyelitis

1990	10408	
1997	8098 or 3047	524
1998	9466	1931
1999	9587	1126
2000	?	265
2001	7470	268
2002	6153	**1400**

Non-polio AFP rate increased from 0.22 in 1997 to above 1.9 in May 2000 due to better surveillance.

Expected non-polio AFP Rate- 1 case per 1,00,000 population of children below
15 years of age.

TABLE-1 SECULAR DECLINE OF POLIO CASES AND FIVE YEARLY UPSWINGS

1981	20,000
1982	38,000UPSWING
1987	20,000
1988	28,000-UPSWING
1992	6,000
1993	8000
93-98	UPSWING IN 1998
98-2002	UPSWING IN 2002

(The polio has not been a notifiable disease till 1997 (?). Earlier estimates of polio cases have been made from the national lameness surveys. The reported cases are those largely picked up from the formal system and reaching the polio specialized centers.

Total affected districts- 86

Bihar-22; Chatisgarh- 1; Delhi-7; Gujrat-6; Haryana-3; Jharkhand 7; Madhya Pradesh –1; Maharashtra-3; UttarPradesh 405; Uttranchal- 7; West Bengal –16

Wild Polio Virus- 2002-1556 cases in 16 States

	P-1	P-3
Uttar Pradesh	1121	100
Bihar	119	
West Bengal	44	1
Haryana	32	2
Rajastahn	30	
Gujrat	24	
Delhi	20	5
Madhya Pradesh	20	
Jharkhand	12	
Uttranchal	11	3
Maharashtra	6	
Orissa	4	
Punjab	2	
Chandigarh	1	
Chattisgarh	1	
J&K	1	

Intra-typic differentiation and vaccine Induced cases:

While the confirmed cases are being reported more openly the compatible cases are not. There are no open reports on the vaccine-induced cases. There are no open reports on the vaccination profile of the polio-affected cases.

Table: Intratypic differentiation of polio isolates from AFP cases ERC India

	2001		2002	
	Wild	Vaccine	Wild	Vaccine
Polio1	209	113	435	58
Polio2	0	70	0	36
Polio3	56	126	45	72
	Vaccine Mix 101		Vaccine Mix 44	
	Wild Mix -3		Wild Mix 0	

AFP Cases postive for polio-	678	813
All Wild	261	480
All VI	310	190

The failures in the implementation of the program:

The meeting of the expert advisory group –polio-that met in Lucknow on the 25th and 26th of November 2002 – in its final conclusions and recommendations sums up the situation as follows

Why has a resurgence of polio occurred in India ? A lack of accountability and supervision in the health system in UP has allowed a large proportion of children to remain under immunized despite multiple rounds of immunization and the expenditure of hundreds of millions of rupees. **Routine immunization coverage has remained unacceptably low in UP and Bihar, contributing to the pool of susceptibility**. Detailed evaluation of surveillance, immunization coverage and sequencing data shows several factors contributed to this situation:

First children in Western UP, particularly in the Muslim community, have constantly been missed both during SIAs and for routine immunization. Data from AFP surveillance shows that in the past several years at least 10% of children with non-polio AFP in UP had received 3 or fewer doses of OPV (16% in 2002), allowing continued circulation of multiple lineage of P1 virus, and P-3 in addition. Among Muslim children in U.P. , 20% of children are under immunized. UP has remained the major source of virus in India throughout this time period.

Major political, managerial and operational barriers remain to be overcome to achieve eradication in India. Unless these barriers are urgently addressed by the national and state govemments (especially in UP) in close cooperation with polio eradication partner organizations, polio transmission could continue beyond 2003. Polio- Free States in India, as well as other countries, continues to face a major risk from reintroduction of polio-virus from endemic areas of northern India.

According to Planning Commission 10th Plan document:

"However it is a matter of concern that over the last five years coverage under routine immunization has not improved. There are sections of population who escape both routine immunization and pulse polio immunization. As a result, though there has been a substantial decline in the number of polio cases, this was not sufficient to enable the country to achieve zero polio incidences by 2000. .

Quality of surveillance

Issues have already been raised about the quality of surveillance and the criteria of 1.5cases per 1 lakh population under the age of fifteen – **see papers from Dr SKMittal**. The implications are that we may still be missing the cases and the presumption that surveillance has improved may not be correct. In fact some of the Medical officers have alleged that cases are being detected now more while they were still occurring in 2000 and 2001.**(see below for global surveillance)**

The impact of the eradication program on the routine immunization program

There are anecdotal reports on the decline of the routine immunization program everywhere in the country due to exclusive attention dedicated to pulse polio, though no surveys have been carried out by any responsible agency to authenticate this information. Pediatricians are reporting reemergence of some of the vaccine preventable diseases like tuberculous meningitis and diphtheria that had almost disappeared in the last one decade. "

The administration is engaged throughout the year on pulse polio –All other activities are neglected – some say that it is self evident and requires no proof – other says that where is the proof – three district study conducted by UNICEF and WHO in UP- Within India there is not sufficient evidence to suggest that routine immunization program is being adversely affected.

A study by Sekhar Bonu, Manju Rani and T Baker (John Hopkin University) comparison of NFHS-I and NFHS-II data

Four major findings emerge from the study that have program and policy implications: (a) significant increase in coverage of first polio due to the PPI campaign; (b) a significant drop out between first and third dose of

polio despite the campaign (c) moderate reduction in gender; caste; and wealth based inequities, but no reduction in religion –or residence based inequities in polio immunization coverage as a result of PPI; and (d) negligible effect of the PPI campaign on levels and inequities in coverage of other non-polio EPI vaccinations. This is certainly not in line with expectations of the 41st World health Assembly, and other advocates of PPI who expected strengthening of national immunization programs and health infrastructure as a consequence of mass immunization campaigns (de Quadros&Handerson,1993; Goodman et al., 2000; Hull and Aylward,2001)

Contrary to above study - International findings from a study conducted by John Hopkins using social science methodology including interviews with health staff in a number of countries where polio has been eradicated showed positive and negative benefits but concluded that there were net benefits from NIDs. The largest benefit came from increased coordination among sectors such as health education and commerce leading to greater coordination on other health programs and also greater awareness in general public about the befits of disease prevention program in general. Other studies (AIIMS 2000; Gounder, 1998; Hull, Ward, Hull, Milstien &de Quadros, 1994). However, almost all these studies are qualitative and anecdotal in nature, mostly based on interviews with community leaders or health staff. In addition, some of the studies reported some disruption of other health activities as an outcome of PPI (AIIMS-2000; Rajum et al., 2001)

WHO- 1997- Taylor Commission Report

Taylor Commission has reported positively on the impact of polio eradication program in Americas. Commission's report published in 1995, pointed out that most countries in the Americas were already had a well-organized health system and infrastructure when polio-eradication started. And it cautioned against applying the findings of the report too closely to countries where health services had not yet reached the majority of the population. Not all the response obtained in the interviews by Taylor Commission were positive. Some of the complains were: "both funds and personnel were being directed to polio eradication while other programs competed for scarce resources; failure to integrate polio eradication with other health programs; concern that door to door immunization might establish a paternalistic attitude to health services and reduce attendance in health centres; in some of the poorest and least developed countries in Colombia, Mexico, and Brazil there were reports of resistance to immunization due to repeated home visits to immunize children."

According to Planning Commission 10th plan document- " data from NFHS indicates that there has not been any decline in the immunization

coverage in the 1990s. However none of these states have achieved coverage level of over 80 percent; coverage level in states like Bihar, Uttar Pradesh and Rajasthan was very low. The drop out rates between the first, second and third doses of oral polio vaccine and DPT have been very high in most states. Lower coverage of around 20 % is reported for measles as compared to other vaccines. **One of the main reasons for not achieving 100 percent routine immunization, is the focus in campaign mode programs in health and family welfare. The Department of family welfare has now taken up a scheme for strengthening routine immunization. Tenth plan will concentrate on ...discouraging campaign mode operations which interfere with routine services.**

Routine Immunization In States
Coverage Evaluation Survey UNICEF-

State	%ge coverage
Bihar	21
UP	50
Rajasthan	53
West Bengal	69
Madhya Pradesh	73
Haryana	75
Andhra Pradesh	77
Orissa	80
Karnataka	88
Gujrat	91
Punjab	93
Maharashtra	95
Kerala	96
Tamilnadu	97

3. WHERE DO WE GO FROM HERE

It was hoped that just as Latin America had become 'polio-free' in the early nineties so elsewhere the same approach would have the same success. The sense of frustration in India is further compounded by the fact that, in last few years –WHO has declared some of the poorest countries in the Western Pacific 'polio-free' and even countries like Bangladesh have reported no polio cases in the last few years. Only India, Pakistan, Nigeria and some other African countries are reporting polio cases. This frustration is also leading to the communalization of the whole issue in India and a particular community is being blamed for the failure of the entire global expensive campaign.

When pulse polio was launched, it was demanded that at least 95 percent coverage of the under-five children should be achieved if the desired goal is to be achieved. It was no body's case to demand 100 percent coverage. However an impossible case is now being made that each and every child should get the polio dose if the goal of eradication is to be achieved and even if one child is missed, this is sufficient to break the control chain. Moreover we are now being told that **even if one case is reported from a country of one billion, anywhere, entire campaign would be treated as failure and WHO would not be able to label India and World polio-free**. The country has been trapped in the success criteria imposed by WHO and we are finding difficult to wriggle out of this situation in an honorable manner.

In this context it would be useful to note that between 2000-03, 23 countries are still reporting confirmed cases of poliomyelitis. Outs of these eight countries were still reporting cases in the year 2002.

Box: 23 Polio Virus Endemic Countries 2000-02

Year-2002
Pakistan;India;Egypt;Nigeria;Somalia;Afganistan;Burkino-Faso;Niger; Zambia

Year 2001
Above and ...Algeria; Angola; Georgia; Bulgaria; Sudan; Mauritiana

Year 2000
Above and ...DRC; Iran; Cape Verde; Congo; Nepal; Ghana; Bangladesh; CAR?; Cote d'Ivore; Chad; Benin; Myanmar; Iraq; West Bank; Gaza Strip

It would also be useful to note that polio compatible cases have been reported from all the regions of the world in the year 2002 . This is also true for American and Western pacific as well as European regions that have been certified as polio free by WHO. This puts a very fundamental question mark on any success in achieving polio eradication anywhere in the world.

	AFP cases	Confirmed Polio	Wild Virus	Polio Compatible	Pending classification
African	8359	206	193	111	1129
American	2023	0	0	4	496
East Mediterranean	4501	117	117	47	214
European	1737	0	0	4	336
South East Asian	12855	1556	1556	271	969
Western Pacific	6143	0	0	9	412
2002-Total	35708	1879	1866	446	3556
2001	31515	501	443	2147	3527

WHO Global Surveillance- 1997- WHO in collaboration with national governments, has established a network of over 80 laboratories to provide virological surveillance. There are three tiers, each providing specialized services; over 60 national laboratories, 16 regional reference laboratories, and six global specialized laboratories. The laboratory network provides the only means of identifying where poliovirus persists and where eradication activities should be targeted. When no cases of polio are occurring, the laboratory network will play a crucial role in certifying the eradication of polio- by certifying the absence of wild poliovirus. At this stage surveillance may also entail analysis of stool specimen from healthy children in high-risk areas and possibly of sewage and wastewater as well.

Today there is an urgent need to step up the quality of surveillance in many countries. Of the 116 countries where polio is- or was until recently –endemic, less than 10 percent are meeting the essential criteria of reporting at least one case of acute flaccid paralysis for every 1,00,000 children under 15. Even worse at the end of 1996, 25 polio endemic countries

Box_

WHO – Vaccine Preventable Diseases: Monitoring System 2002 Global Summary

By the end of year 2001, reported polio cases had declined by 99% compared with 1988, and only ten countries remained endemic. From 2000-2001 the decline has continued, especially in AFR. Nevertheless **a change in case definition** (from clinical to virological classification) explains partially this decrease.

The tenth plan document states that medical goal of polio eradication is to prevent paralytic illness due to polioviruses by the elimination of wild poliovirus so that children need not be immunized perpetually. **India will probably achieve zero incidence of polio by 2004.** If there are no more cases over the next three years, the country will be declared polio free. When this is achieved, steps will be taken to ensure **100% coverage under routine immunization for another decade.**

It also states that due to danger of vaccine mutant virus, several countries that have eradicated polio have shifted to injectable killed polio vaccine after elimination of the disease. India along with other South Asian countries may have to consider all these options and prepare appropriate strategies during tenth plan.

There are various shades of marketplace and expert opinions on this issue

- We cannot wait for water and sanitation to be corrected for eradication of polio
- We cannot wait for health systems to be corrected for delivery of the polio vaccination through the routine immunization
- We must pursue this strategy and achieve the desired results
- Money is not the issue- we must eradicate this evil-which paralyses millions of the children in the third world
- We cannot go back from our commitment after spending so much time and energy
- The negative consequences of not doing the complete job i.e. not achieving the polio eradication- it could cause worse epidemics now that we do not have the protection of natural immunity anymore
- We have made enough efforts, there is already fatigue set in and nothing more will be achieved in pursuing it any further

(see annex-1 for more details on this)
There are also natural concerns on the impact of the failure in certain states in India on polio free states and on adult population in an environment where there is loss of natural immunity.

Way Forward:

It is clear that the target of achieving the polio eradication by 2000 is postponed substantially. Even if it is achieved in India after some years, other Asian and African countries may not be able to achieve it or there may be resurgence in the countries that have already received it due to vaccine mutant virus. The demands of certification are even more stringent and even after achieving zero case status and certification, the decision to discontinue with polio vaccination and make the cost saving on the vaccine remains a far dream. It is therefore suggested that

the we should no longer be pushed to meet the target date of the Global polio Eradication. The push given in the form of IPPI is not justified again? However, the WHO and the expert group may try to justify it on flimsy grounds

The ultimate justification given by WHO to push this strategy on India and few other countries is that a polio free world will lead to saving on cost of one billion dollar per year for polio vaccination by the countries of the developed world and 1.5 billion by the entire world. This, in our humble opinion, is not a sufficient reason to hold the entire health establishment of India to ransom for the pursuit of this objective, if it is not feasible to achieve it for a variety of reasons in near future and **we have no reasons to feel frustrated or ashamed by it.**
We would like us to shift to the original strategy and not go in for IPPI (Intensive Pulse Polio Immunization) any more. That is our sum total of recommendation for the policy makers at this stage.

Suggested Course of Action

- With draw Supplementary Immunization Activities- like NIDs and SNIDs, review the role of MOP rounds and outbreak immunization, while routine immunization coverage is still low

- Use experience and lessons of the seven years efforts to take serious action on strengthening the health systems including the routine immunization

- Continue surveillance but use the network to extend it to other diseases too. Link it to the general surveillance project.

- An independent review of the technical and operational strategy should be done. The lead partners of the GPEI should not guide this. The national government with other donors and World Bank should develop a common viewpoint on this issue. Some of the issues for this review should be following:

  - ✓ The flimsy argument on the saving of 1.5 billion on the cost of polio vaccine- should this be the beacon light of the polio eradication program and its ultimate justification?

  - ✓ Could we have done the same with less money? Impact of oversupply of resources on one program within the health system/ What does the CAG report say?

  - ✓ Independent study of the impact on the general health services and the indirect cost of the polio program

- ✓ Role of UNICEF and WHO in provision of technical advise- Is there a conflict of interest involved- how many experts are paid by the vaccine industry

- ✓ Two new elements introduced- Vaccine mutated wild polio virus in areas where WHO has certified polio free- and the advocacy of IPV- who will bear the cost of this costly vaccine

Donor Responsibility

- ➢ Resource projections in the new circumstances, how many resources donors are ready to commit- prior warning to the national government – Some experts have pushed the target date to 2015. Planning Commission has also made similar projections. Do we have resources for an expensive strategy?

More basic issues

- ➢ A process evaluation of the program should be undertaken to learn lessons for strengthening the health systems in the country and reaching the poorest and marginalsed populations.

- ➢ Review of WHO role- it calls for national governments to be in lead in reform of WHO- why should then donors provide funds for the WHO in India to play a direct implementation role. Do we want to make WHO and UNICEF as private contractors for provision of global public goods- the new mantra of the international aid? GPPP and the influences on WHO

- ➢ Priorities- How much of priorities should be given to vaccine preventable diseases, Are these the priorities of the developing countries? Review of BOD and DALY etc. MECH has called for involvement of civil society to decide the health priorities of the poor and these should not be determined merely on the basis of the epidemiological data.

- ➢ Make a case to make available donor resources into the general pool and not targeted to specific disease control programs

- ➢ Review GAVI/ Vaccine industry

Annex-1

The current views

It is amazing to find so sense of helplessness amongst those who know that things have been wrong from the beginning. They also feel helpless that now we have no other choice but to continue with this folly. On the other hand there are views that either show ignorance or cynical. There is no view that reflects the urge to find the truth and correct where things have gone wrong. Therefore, the program continues, as before and the nation suffers. Here is a collection of views, opinions and reactions of a cross section of people who had some role in the program-

1. WRONG OR RIGHT –WE HAVE COME THUS FAR. WE CANNOT GO BACK NOW. WE MUST ERADICATE POLIO. WHO WILL BE RESPONSIBLE FOR THE NEGATIVE RISKS OF ABANDONING THE PROGRAM MIDWAY? – **A MOST COMON REACTION.**

2. The polio eradication program was a great opportunity for us to spend the resources that were committed to the health sector in India but these were lying un-spent- the tap was always kept open for pulse polio because it was the real potential to spend the money- views from task managers of the bilateral donors and multilateral agencies.

3. Our Chief from the headquarters was blaming WHO for messing up the entire program. It was a waste of opportunity costs and story of opportunity lost. This amount of money could have done wonders for the health of the poorest. However when he joined the formal meeting, his stance was changed completely- inside views from several bilateral and multilateral agencies.

4. One informal view from an official of an influential international agency for the GPEI

Box:

The GPEI is based on political decision- not on a rational or technical decision.

Who sets policy – GOI or WHO? It is certainly GOI and not WHO.

It is wrong to say that WHO is playing a role in implementation. It is GOI that is implementing.

The IPPI that began in 1991 did not deliver the goods because GOI did not agree with it completely, as advised by WHO. It did not keep with the suggested approach. The differences emerged on more Mop-Up rounds suggested by GOI instead of more SNIDS and NIDs recommended by WHO.

There is a "politico-economic" side to the whole argument– India cannot unilaterally withdraw from the program.

WHO has been emphasizing for long that Muslim Population as a group is refusing to accept immunization. However, Indian government has not agreed to raise it as one of the issues in the poor implementation of the program.

Health systems strengthening cannot be the approach now. We need the 'Juggernaut' or the 'Sledge hammer' to complete the task.

Donors will be ready to put more money for polio eradication under RCH-2. This has to be pursued and cannot be given up.

Need to clarify whether the cases polio in non-high-risk states are occurring amongst the migrants or the virus originating from one place is attacking the still vulnerable population in the non-high risk states.

The World Health Assembly gave the mandate to WHO to take up polio eradication. WHO as an organization had never advocated for this. In fact Eradication is a bad word in WHO.

Other related issues on vaccination

Need for unified surveillance to incorporate the network of National Polio Surveillance Program (NPSP) and the World Bank Surveillance Project and another one in Orissa. The surveillance should incorporate all vaccine preventable diseases.

Under the Immunization Strengthening Project funded by World Bank for India, no strategic framework for immunization has been developed as yet by GOI. This project is not providing funds for hepatitis B vaccination project. These are being funded by GAVI.

Conspiratorial nexus, as reported in EPW paper, between Hepatitis B and GAVI is not a fair statement. China is using GAVI funds at provincial level without including hepatitis B vaccination.

The GAVI project has increased the equity gap in India. It is being implemented in those districts that already have high immunization coverage for other vaccine preventable diseases. GOI is coming to donors for asking for more funds for hepatitis B. There is need to review the approval of funds process for GAVI. It does not get usual clearance from Finance and DEA as in the case of other externally funded projects.

Need to understand the murky influences on WHO – the private foundations and transnational corporations.

5. <u>One View from an international adviser who worked in the WHO SEARO region office for GPEI in the initial years:</u>

The most important person in the program in the WHO SEARO office was ..... Who is credited with the polio eradication in the Latin American region. For him the most important activity was to establish the network of high-class laboratories for the viral testing in India and in the region for the surveillance purpose. The issue of very low coverage of routine immunization in certain population groups came in as an important issue early in the program. It was suggested that it was very important to give priority to establish mechanisms for routine polio-immunization in these populations groups to overcome their resistance. However, this advice was ignored.

6.. " We were participating in the program to do some good work. We were never aware of these complex dimensions of the entire issue. We are hearing this for the first time" – **common reaction of large number of the Medical officers who were playing a lead role in the implementation of the program.**

7. " We must not forget the most important fact- it is not GOI that is running the program. It is the WHO. WHO is the master of this program. The opinion of Indian experts does not matter against the opinion of the white-skinned experts. I had opposed IPPI but nobody paid any attention to my advice. It is only now when the program is failing that they are calling me to seek my views. Ultimate decisions still rest with them. If a meeting is called exclusively of Indian experts, I am ready to reveal the complete truth." **One senior most international authority on the global eradication of polio**

8. "All those who were sincerely implementing the program were sidelined because they were opposed to mishandling of funds." **One medical officer**

9. "We had opposed the IPPI from the beginning. But we were sidelined. We had to sacrifice the coveted positions in WHO. Those who were ready to speak the party line got the prize postings." – **One medical officer**

10.. "Can anyone answer this question as to how many doses of polio vaccination should a child get before he can be guaranteed protection from polio? In my district all polio cases have already received four or five doses of vaccine. And why does not somebody focus into the poverty angle because all children getting polio are from poorest socio-economic strata. It is obvious to us that it is the conspiracy of the transnational vaccine manufacturers to impose this program on us. There is no other logic for this program. But we are helpless." **One CMO in one of the districts in U.P.**

11. " The Indian Academy of pediatrics in its resolution in the year 2000 had opposed the IPPI. We were told by the government that it was an administrative decision and not a technical decision and it has to be carried out. One of the senior most secretaries said that if do not follow WHO recommendation, the blame will come on us. So we have no choice." – **One senior pediatrician in the city**

12. The Indian Academy of pediatrics, the Indian Medical Association and other important professional bodies are supporting this program. How can health ministry or planning commission have a different view on this, against the views of these

professional bodies. They have even gone to Human Right Commission to claim hepatitis B vaccination as the human right of the children. Only if these bodies are convinced, can it be possible for us to take a different view on polio eradication. Till then we have to continue with this policy. If somebody has to approach us on this issue- it should be through these bodies." **-one senior official and adviser.**

13. " I am on record to have opposed this program as not being a priority when I was with Planing commission. But my note was not even forwarded to the health ministry" – **One retired senior most functionary of the Government**

14. "Who is going to listen to you. There is plenty of free floating money in this program and everyone from the top to bottom in the health establishment is getting some perks. Who is bothered about the success or failure of the program." **–one functionary of the consulting organization in one of the state.**

15. " Do not raise the issue of resources for this program. If there is a good cause, the resources can always be found by Government of India. So exorbitant expenses on this program is a non-issue." – **One senior functionary in the Government**

16. " Polio eradiçation is a good thing. Why should we pose other priorities against it. If we have other pressing problems, we can solve those problems also"- **one common man on the street.**

17. One view from WHO-SEARO region:

Box:

Polio-2 wiped out, polio 3 nearly; identified lineages from western UP that are spreading to other places- So there is a clearly geographical area identified where if the virus is contained, the success is possible.

In the year1970, when the routine immunization was low, trials by one leading Indian Expert used multiple rounds of the pulse polio to reduce the immunity gap and this formed the basis for IPPI in 1999. The multiple rounds had their success in 2000 when the number of cases came down substantially- 260 in 2000 and 2001. But after that the number of rounds were reduced and that created the immunity gap in a background of low routine coverage and also there was loss of natural immunity .

Vaccine implementation is poor in other areas too e,g one district in Kerala- case in 2000 and Ganjam and Bhadrak district in in Orissa- cases in 1999 and again in 2002 . So even where Routine Immunization coverage overall is good there is problem in specific areas. It has persisted through the years but in intervening periods, they did not have the virus because circulation had got wiped out. Once the circulation again became widespread in

2002 cases again appeared but did not turn into a major outbreak States like Rajasthan and MP were always at high risk for polio transmission because of poor RI coverage in the background of decreasing IPPI rounds. There was an accumulation of susceptible and once the virus crossed over in the high season, outbreak followed.

In the past also outbreaks occurred at intervals of 5-6 years because of build up of susceptible, I similar situation has occurred in 2002. – Fewer rounds in previous year with poor implementation in High Risk States, poor Routine Immunization, natural immunity also declined with most of the genotypes getting wiped out.
The states that had better health systems implemented the program better and followed it up with good routine immunization coverage have continued to be polio free.

But where there is a chance for virus to establish itself, it does.

18. One view from a worker of Rotary International

"Your technical objections on the desirability and feasibility of the polio eradication initiatives may be correct. However, Rotary International Hq may not have been aware of these dimensions. It was only trying to do a good job, moved by the very high motive of making this world polio-free."

19. Sekhar Banu et al –

Despite high profile given to PPI, and steadfast political and bureaucratic commitment, the impact of PPI on coverage and sustainability of polio and non-polio EPI vaccination is less than satisfactory. Findings of the study highlight the limitations of the "campaign" approach to disease eradication in backward regions of India and elsewhere where weak health systems operate in challenging social, cultural and physical environment.

As the global polio eradication effort narrows down to few geographical regions of the world with poliovirus transmission, geographical regions that also share some of the most challenging social and health systems barriers to public health, it may be essential to strengthen health systems and address social challenges in addition to ongoing polio campaign. A multidisciplinary understanding of social, cultural and health system related realities in these areas may be essential to resolve the remaining challenges to polio eradication.

Questions remain about the other consequences of globally mandated disease eradication program on floundering health systems in the most backward regions of the world. What had been the "opportunity" costs of global disease eradication program for poor societies that had committed scarce resources to fulfill a global mandate? How can a disease eradication program ensure efficiencies and effectiveness in reducing overall disease burden by strengthening the routine immunization systems, while also succeeding in eradication of a disease? Unfortunately we do not have convincing answers. Further health system operational research to evaluate different aspects of global disease

eradication program implementation- including polio – can contribute to make health systems more effective and efficient.

20. Box – View from WHO-Europe:

Achieving a polio-free Europe

The WHO European Region has been polio-free for more than three years thanks to the hard work of public health workers and volunteers in its Member States, with the additional financial support of bilateral agencies and international partners.
In addition to the substantial domestic polio eradication costs borne by the European Region Member States, many European governments (including the governments of Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Switzerland and the United Kingdom) have supported other countries in the region to protect their children against polio.
Rotary International and the United States government (through US CDC and USAID) have funded considerable vaccine and operational costs; and the United Nations Foundation has also funded over US$ 1.3 million of operational costs to help the polio eradication effort in the region.

Global progress

European governments and institutions have also made significant contributions to the Global Polio Eradication Initiative, funding vital activities in over 100 polio-endemic and high-risk countries.
Top ten donors to the Global Polio Eradication Initiative since 1985:(includes pledges to 2005)

Top ten donors Donations since 1985 in US$ millions

United States (CDC, USAID)	598
Rotary International	462
United Kingdom	341
Japan	200
Netherlands	110
Germany	65
Bill and Melinda Gates Foundation	50
Denmark	36
Canada	35
United Nations Foundation 31	

Of the European governments, the United Kingdom has contributed the most funding to the Initiative to date: over US$ 341 million since 1985. In 2002, the UK's Department for International Development (DFID) set in motion more than US$ 100 million for polio eradication activities in India over the next four years.
The Netherlands has donated US$ 110 million since 2000, to support vital disease surveillance systems.

Germany has been a long-standing partner to the polio eradication program in India, providing US$ 65 million for oral polio vaccine since 1997.
Denmark was also one of the earliest partners to the program in India, providing support since 1997 for vaccine, cold chain, and surveillance support.
In 2001 Luxembourg, with its first contribution to the Initiative, showed how the impact of a donation can be maximized by strategic directing of funds. Luxembourg made a US$ 3.2 million contribution to fully fund the gaps in six of its priority countries: Burkina Faso, Cape Verde, Mali, Namibia, Niger and Senegal.
Italy has provided US$ 1 million each year over the past three years for India's polio eradication efforts.
In 2001, Norway provided US$ 3.1 million to the Initiative, both globally and to support activities in Nepal and Ethiopia.

In 2001, Ireland signed a three-year US$ 2.3 million global pledge, in addition to supporting activities in Ethiopia.
In 2001, the European Commission provided US$ 17.4 million to the governments of Nigeria for its polio eradication efforts.
Private sector partners including Aventis Pasteur, British Airways (through the 'Change for Good' Appeal) and De Beers have made significant contributions.
This support has helped to bring polio to its lowest levels in history. Today there are just ten polio-endemic countries. The number of polio cases was down by **99.8 per cent from 1988 to only 480 cases last year**. Disease surveillance systems have been strengthened. Health workers have been trained to ensure rapid reporting of polio cases and other epidemic-prone diseases. It is critical that we build on these achievements to stop transmission of poliovirus globally and avoid any re-establishment of poliovirus transmission in polio-free areas. Until all children are immunized against polio, children remain at risk from this crippling disease.

Protecting our investment

Today, the greatest risk to the polio-free status of Europe is a reintroduction of the virus from the remaining polio-endemic countries - such as the importation to Bulgaria and Georgia from south Asia in 2001. Helping to finish the job in south Asia and Africa is perhaps the most important step in protecting our investment in a polio-free Europe.

Annex-2

A-2.1 WHAT IS THE PROBLEM THAT WE ARE TRYING TO SOLVE AND WHY DO WE WANT TO SOLVE THIS PROBLEM

Background

In the 1960s it became clear that smallpox was non-existent in the North American continent 'and routine small pox vaccination was discontinued in the USA. If one large continent could be free of small pox, obviously the whole world could be free of small pox. In 1966 the 19th World Health Assembly adopted a resolution to intensify efforts for the global eradication of small pox. At that time small pox was considered to be endemic in 33 countries; India was one of them, accounting for 65% of the global cases. The last case of small pox in India was in 1975 and in Somalia in 1976. In 1978, two years later, the WHO declared the world free of small pox.

It was this success story that led to the idea that poliomyelitis could also be eradicated. In 1976, it became apparent that there was no circulation of wild polioviruses in USA. If a continent could be free of wild poliovirus, the whole world could also be made free of wild polioviruses. Poliovirus is an exclusively human infection (just as small pox was) without any extra-human reservoir. Safe and effective vaccines are available against poliomyelitis, as was the case with small pox. In 1984, the Rotary International (RI) constituted a consultative committee to consider the potential of a global effort against poliomyelitis. Accepting the committee's report, the RI declared the goal of eradication of poliomyelitis by 2005, the centenary year of RI, giving itself a 20 year interval for achievement. Stimulated by this development, the Pan American Health Organization (PAHO) resolved in 1985 to eliminate poliomyelitis from the South American continent, by the year 1990. Then in 1988, the World Health Assembly resolved to commit the WHO and the member nations to eradicate global poliomyelitis by the year 2000. **(T. Jacob John- Can we eradicate Poliomyelitis? –1996)**

Are we targeting the correct problem?

It is obvious that under the guidance of WHO, the MoH&FW have are targeting the polio virus. They have no concern with the other polio-like illnesses that have been clubbed together under the AFP. Considering that new cases of AFP will continue and virus may be present in sewerage and other places for a long time, it would be important to have a proper case definition and understand the underlying etio-pathology.

Box: Paralytic Poliomyelitis- Conditions causing muscular weakness include:

1.Infectious neuronitis (Guillain-Barre Syndrome) – most common disease; most difficult to distinguish from poliomyelitis
1. Peripheral Neuritis- Post-injectional; Toxic-lead; avitaminosis; paralytic-cranial hepeszoster; post-diphtheritic neuropathy
2. Arthropod borne viral encephalitis; rabies and tetanus;
3. Botulism
4. Demyelinating types of encephalomyelitis
5. Tic bite paralyses-uncommon
6. Neoplasms
7. Familial periodic paralyses, myasthenia gravis and acute porphyria-uncommon causes
8. Hysteria and malingering-rare in children

Conditions causing pseudo-paralysis do not present with nuchal-spinal rigidity or paralysis

1-Unrcognised trauma- from contusions, sprains, fracturos and epiphyseal separations- common causes of diagnostic confusion
2. Non-specific (toxic) synovitis
2. Acute osteomyelitis
3. Acute rheumatic fever
4. Scurvy
5. Congenital syphilitic osteomyelitis

An alternative approach could be understand paralytic poliomyelitis as an end point of multiple and competing causes child morbidity and mortality; treat all cases of AFPs as one syndromic category and apply a case management approach with focus on the rehabilitation of cases with residual paralyses. This can be made an essential component of the Integrated Management of Child Illnesses or IMCI.

Another strategy could be based on tackling the water borne diseases. This will address other all picoma viruses together. E.g. polio, hepatitis A and also- enteric fever, diarrhea and gastroenteritis – the cluster of water borne diseases

Malnutrition and vulnerable child are also an important dimension of the vulnerability to polio infection and paralytic poliomyelitis. Can we really address the problem without addressing the underlying causes?

We will have no net gain by passing the issue of strengthening the health systems for achieving results through vertical approaches and programs. A weak health system will pursue all these vertical health programs like a 'Bhasmasur'.

A2.2 HOW MANY ACTUAL CASES OF RESIDUAL PARALYTIC POLIO DUE TO WILD POLIO VIRUS:

Issues

- ✓ What data has been quoted by GOI/donor agencies of the baseline in 1994-95
- ✓ Relationship of reported cases and estimated cases –is it justified - cases of residual paralyses due to infection with poliomyelitis virus and cases of non-polio AFP.

It is interesting to note that the magnitude of the problem is being **magnified** beyond all measures through manipulative use of language to justify the massive expenditures on this program. For example:

http://wbln1018.worldbank.org/sar/sa.nsf....

11/20/2002- Today India Makes Final Assault on Polio – Bank Assits with $50 million

"With its annual nationwide Pulse Polio Immunization Campaign getting underway earlier this week, India is poised in the new millennium **to save millions of children** from lifelong handicaps, deformities, and deaths resulting from the disease through a fast track approach for polio eradication". (emphasis added)

Lancet May 20 1994- Hull, Ward and others

Before the advent of polio virus vaccine	Estimated 600000 new cases of paralytic polio occurred worldwide every year
1978 officially reported figures	50,000
1988 " " " "	35,000 (estimated cases 3,50,000)
1989	---------- (India 13866)
1991	----------(India 6020)
1992	15406---(India 8756)

The downward trend occurred despite improvements in surveillance. Nevertheless poliomyelitis surveillance remains inadequate in many areas of the

world, and **WHO estimates that the true figure for paralytic polio in 1992 was 1,40,000.**

Same paper reports,

India reported 91% immunization coverage in 1990 and incidence of poliomyelitis fell to 6020 cases in 1991 from 13866 in 1989. The number of polio cases increased by 46% in 1992 to 8756 (56% of the global total). While this is partly due to improved case detection, there is some evidence of real increase. Concerns have been raised in India about the rising percentage of cases among children who have received three doses of OPV. However with a vaccine efficacy Of 80-85%, **a rising proportion of cases will be vaccinated as immunization coverage rises and absolute number of cases decline.**

National Medical Journal of India 1997 – Varghese, Qadeer, Mohan –

Paralytic poliomyelitis in rural areas of north India – based on house to house survey conducted in 1990-91 in rural area of north India -Results- Thirty-seven cases of paralytic poliomyelitis were identified indicating a prevalence rate of 1.6 per thousand populations. Of these 97 % were paralyzed before they were 2 years old and 60 percent had a history of intra-muscular injection preceding paralyses. Only 14 percent of them had received either partial or complete immunization.

Conclusion – amongst others- **Injection given for treatment of fevers in rural areas may play a role in precipitating paralytic poliomyelitis**. The same paper also states that

" A national sample survey conducted by GOI showed a prevalence rate of **1.05 per 1000 population**. The estimated poliomyelitis infection works out to be 2.12 per 1000 population. In our study population of 22883, 2-3 cases of fresh paralytic poliomyelitis were seen every year. The WHO status reports on poliomyelitis estimates that surveillance systems are still reporting only 1 case in 10. – Quoted from Bulletin of WHO -1980"

✓ "Based on the prevalence of lameness in school age children the annual incidence of symptomatic polio in low and middle income countries was estimated to be in the range of 20-40 per lakh population- source??? "

One of the documents states –

It is primarily a disease of very young. 90 percent of the people who become infected are less than three years old. **It affects the poor hardest, with most cases found in urban slums.**

"The disease burden from polio has fallen sharply in India and rest of the world since 1980 because the routine immunization program has been effective in controlling the disease. Routine polio immunization in India has boosted polio immunity levels in under-3s to a reported 90 percent, which leaves just under 8 million children at risk from polio. The reported number of cases in India fell sharply from around 40,000 per annum in 1980 to 30,000 in 1982 to 6000 in 1991 and to some 9000 in 1994.

But experience has shown that routine immunization alone will neither continue to reduce the incidence nor lead to polio eradication. Based on slowed rate of reduction in 1990s and on the experience of other countries, India will probably continue to have 3,500 to 4,500 reported cases a year if the NIDs are not implemented. **The unreported cases of polio are likely to be 3-10 times higher, i.e. around 10,500 to 45,000 per year.** Further having made gain in reducing incidence, the danger of epidemic is increased because of a lower level of natural immunity in the population."

The document also states that-

"At present polio is clinically diagnosed on the basis of acute flaccid paralyses (AFP). AFP can be caused by several illnesses besides polio, and only laboratory analyses of a patient's stool can determine whether the cause is polio. India has four national laboratories which can undertake relevant tests (but which cover only a small proportion of polio cases) and this is soon to be extended to seven. More needs to be known about the skill levels of the laboratory staff and the budgetary situation of the laboratories in order to judge how effective they are likely to be in their viral diagnosis work. And it is likely that system for ensuring the prompt collection and dispatch of stool specimens for laboratory diagnosis also needs strengthening.

Other important links in the surveillance chain that needs to become more effective are the hospital based and community mechanisms to trace patients with AFP to enable follow up examinations to be undertaken on all suspected polio cases. (This needs to be done 60 days after the disease). More than half the children taken to hospital cannot be traced once they leave. The polio monitoring capacity within MOHFW also needs to be strengthened."

A-2.3 COST BENEFIT ANALYSES OF PULSE POLIO PROGRAM GLOBALLY AND IN INDIA

Box- WHO-1997 – Benefits of Polio Eradication

Over the years polio has taken a heavy toll on the lives of both children and adults. Before the advent of polio vaccines, about five lakh people a year were paralyzed or died after contracting the disease. While the humanitarian benefits of global polio eradication will be immeasurable, efforts have been made to quantify financial savings that can be anticipated. WHO estimates that once polio is eradicated and immunization halted, global savings from immunization, treatment costs, and rehabilitation will amount to **over US$1.5 billion a year. But there is no way of knowing how much of that money will be redirected to other health programs.**

The reduction in human suffering and death will be felt most in the poorest and least developed countries, where disease is still endemic. But many of these countries are now paying an increasing share of cost of NIDs- representing a higher proportion of GDP than in richer industrial countries. At face value financial savings would be greatest in countries where the costs of polio immunization, treatment and long term rehabilitation are greatest.
The United States will be a major beneficiary once the disease has been eradicated globally and polio immunization can be stopped. And there is a precedent for this. It has been estimated that, ever since the global eradication of small pox was certified in 1979, the United States, the largest donor- has recouped its entire contribution every 26 days.

In 1993 World Bank Development Report, Investing in Health, estimated that in one year alone, 1968- the global amount spent on smallpox immunization, quarantine, and treatment was over US$300 million- more than direct financial contribution during entire 12-year eradication program. The eradication program had saved hundreds of millions of dollars a year in direct, measurable costs, as well as unquantifiable amounts of human suffering. Few investments of any kind generate human and financial benefits on that scale.

In addition to human and financial benefits, polio eradication is having a positive impact on health services and on development of health infrastructure throughout the world. In 1988 when World health assembly resolved to eradicate polio by the year 2000, Member states were determined to ensure that health service provision was strengthened and not ignored at the expense of a " vertical" program focused on a single disease. The resolution emphasizes that " eradication efforts should be pursued in ways which strengthen the development of the Expanded program on Immunization as a whole, fostering its contribution in turn, to the development of health infrastructure and of primary health care."

Box: Following is a summary view of the justification for polio eradication program in India by one of the donor agency

Technical Justification: "Experience has shown that routine immunization alone will neither continue to reduce the incidence nor lead to polio eradication. The only way to eradicate polio virus is to build up immunity in the entire human population. The PPI approach has proved that this can be achieved. It was used successfully in Americas in the late eighties and in China in early nineties. It is the WHO recommended strategy for global polio eradication. If India can eradicate its remaining polio virus reservoirs, there is a very good chance that it can be eradicated globally. Economic Justification

The economic case for investing 135 million sterling pounds (over five years) in eradicating polio in India rested on two main grounds-

- ✓ Eliminating the distress and loss of income due to death and disability
- ✓ Reducing and eventually eliminating the costs of treatment and immunization programs

These benefits would be extended to a significant but nevertheless relatively small proportion of the population of India, and to potentially very large numbers in other countries where polio has already been eradicated but where immunization and other measures were still required.

If the project eradicates polio it would save all the DALYs associated with the cases that would otherwise have arisen. In the present value terms the cost per DALY averted is in the range of pound 90-350 based on an average life expectancy of 55 years, which corresponds to range of possible cases that would arise in the absence of the project. The data are too limited to indicate where in this range the true value lies, because of the difficulty in predicting the number of unrecorded cases. **However we judge it unlikely that figure is below 100 pounds and it may be considerably greater.**

In addition India would eventually benefit from reduced **expenditure on vaccines and patient care (upto pounds 7 million after 8 years)**. These benefits are quite small.

Health interventions are often judged cost-effective if the cost per DALY prevented is within the per capita GNP of the country covered. India's per capita GNP is 210 pouns. In India more common benchmark is 66 pounds. The project is thus relatively expensive but not totally out of range of cost effective interventions. There will be other interventions in India (to tackle other health problems) that are more cost effective. On the other hand many current

interventions cost considerably more 9 for example many forms of hospital based care)

Much larger benefits would accrue worldwide. India remains a large reservoir of polio virus imposing high costs on other countries when the virus is exported. WHO has informed that Netherlands spent more than US $19 m in 1992/93 to control an outbreak of more than 60 cases of poliomyelitis caused by wild polio virus imported from South India. This was significant drain on Netherlands national health resources.

The most impressive gain from polio eradication would be achieved when polio immunization can be stopped globally. This would be most likely to occur three years after the last reported case. It has been estimated that the cost of protecting the world's children against polio is approximately US$ 3 billion per year. No one country can stop immunizing unless all countries have achieved polio eradication. **Every year's delay translates into another US$ 3 billion that otherwise could have been saved. The economic benefits of eradicating polio therefore enormously outweigh those of indefinitely controlling the disease at a lower level of incidence.**

The benefits will only be secured if India successfully completes the 5 year program and eradicates polio.

Financial

The PPI program cannot be justified on financial grounds alone, as the additional budgetary costs of eradicating polio are an estimated pound 30 million a year for five years. While budgetary saving of pound 7 million will not be realized until eight or nine years from now. But these savings do provide further justification for eradication of polio on top of significant economic and social benefits expected.

The annual budgetary saving to MOHFW on vaccine alone on ceasing to have to undertake the routine polio immunization program would be 34 crore (pound 6.6. million). There would be some delivery cost saving, but since polio is a part of EPI, these are expected to be small. These savings should start some eight or nine years from starting the pulse polio (India will not be certified polio free until there have been no reported cases of polio nation-wide for three years).

Smaller budgetary saving will arise from not having to meet the costs of acute care and subsequent rehabilitation for polio patients in government hospitals. An estimated one third of polio victims seek treatment in hospitals at an estimated average cost of around $ 250 (both statistics taken from a forthcoming WHO article on the cost benefit analyses of global eradication of polio). On these figures the annual budgetary saving would be of the order of 216000 pounds.

Social

Reduction in number of children suffering from polio-induced paralysis will have significant social benefits. The children who otherwise would have been paralyzed will be free of the anxieties, pain and social stigma attached to disability and the additional obstacles disabled people have in finding employment and participating in public life in India. Second the burden placed on women to care for the polio disabled will be reduced.

World Bank Justification for the program:

" Using standard public finance criteria, it is not difficult to justify public involvement in, and financing of, strengthening the capacity to deliver and monitor immunization and for the campaign to eradicate polio. Hammer(Economic Analysis for Health Projects, May 1996) finds that infectious diseases provide a *prima facie* case for government intervention on three grounds: (a) externalities (spread and incomplete course of treatment); (b) some options are pure public goods (vector control, information); and they disproportionately affect the poor. While most non-information service are private in nature (rival and exclusionary), there are substantial social externalities. The case of polio vaccination is unique, however, in that it exhibits both characteristics of a public good. When the vaccine is administered to many children orally in the community, the virus multiplies in their intestines and released in much larger quantity in excreta. This attenuated virus competes in the environment with the circulating wild virus, which is responsible for polio. As a result benefits are non-rival and non-exclusionary and therefore public goods. Furthermore all the elements of the behavioral change communication are pure public goods."

Other issues discussed are

Equity: with the burden of vaccine preventable diseases falling on the poorest and most vulnerable households, investments in vaccination program should benefit the poor.

cost effectiveness- routine immunization in India is highly cost effective- cost per DALY gained ranging from $5 to $37, while cost per death averted ranged between $514 and 1233. **Simulation for improvements in efficacy and program coverage demonstrated a higher return to increase in coverage**.

and public- private roles---1997-98 less than 10 percent of immunization were done in private sector and most of these were in urban setting.
Sector issues

Despite the progress achieved, India's immunization program has the potential to significantly increase its performance. First both human resources and the physical infrastructure have declined since early nineties. Technical and program management competencies have gradually eroded in last several years. Similarly cold chain and transport systems have weakened due to aging and inadequate financing. Monitoring of cold chain functioning and vaccine supply and logistics are inadequate. Second state level performances are highly varied, with low coverage in Bihar and Eastern UP and six other states. Third in weaker performing states regularity and/or geographic access to immunization sessions is limited, and injection safety and client counseling is inadequate. And fourth reporting of disease outbreak is weak, with the exception of polio, and the capacity to respond to such outbreaks is almost universally inadequate.

1993- Intervention Characteristics and Cost effectiveness – Jamison and others

$ 25 per DALY averted – for diphtheria, pertussis, tetanus, polio, immunization

other ranges

25-75 e.g. ORS

75-250- Schizophrenia treatment

;250-1000 e.g. antibiotic prophylaxis for rheumatic fever

1000 – COPD, surgery for rheumatic heart disease

1995 --Cost benefit analyses by one donor agency based on WHO paper

If the project eradicates polio, cost per DALY averted is in the range of 90-350 sterling pounds on average lige expectancy of 55 years. (based on the presumption of 10,000-90,0000 cases averted.

1999 -Cost Benefit Analyses BY The same agency

Scenario	30,000 cases averted	50,000 cases averted
Base Case	128	73

No Global eradication	151	87
NIDS upto 2003-04	220	125
NIDs upto 2003/04 NO Global Eradication	246	140

These figures are higher than many other health interventions (i.e. HIV/AIDS prevention cost estimated at $18 per DALY) but well below GDP per capita (US $ 440-1999) . The case for eradication is made more broadly than national cost effectiveness but as part of global effort.

"Overall, the economic case for eradicating polio in India looks reasonable provided program goes well. There are however significant risks involved, so the case is not very robust. Thus the main argument for proceeding with the project is on the basis of its contribution to the global eradication program rather than because of benefits that will accrue to India. "

Cost Estimates for the remaining countries for the Global Polio eradication **--$ 1-2 billion**

Projected savings $ 1.6 billion per year

ITEM	DEVELOPED COUNTRIES	DEVELOPING COUNTRIES
Vaccine	$ 25 per child	$ 0.48 per child
Saving	$55m	$460m
Delivery	$20 per child	$ 6 per child
Saving	$ 380 m	$ 700 m

A2.4 IS POLIO ERADICATION A PRIORITY FOR INDIA

Table: Years lived with disability in India (YLDs) in thousands –year 1994

Total	92,070
Childhood Cluster	1738
Pertussis	199
Poliomyelitis	1484 (polio and non polio included)
Diphtheria	35
Measles	19
Tetanus	1

Polio is a preventable and eradicable disease because it spreads from one human to another and no other vector animal or insect is involved. It is primarily a disease of very young. 90 percent of the people who become infected do so when they are less than 3 years old. It affects the poor hardest with most cases found in urban slums.

Although India has one of the highest incidences of polio in the world, it represents a small proportion of the total burden of disease. In 1990 it accounted for just 1% of women's infectious disease burden (DALYs) and 1.5% of men's burden. However, because it affects the very young, it represents some 10 percent of the disease burden among children suffering from the most common childhood ailments in India (the so called childhood cluster of diseases) - **check the data and source**

WHR-2001- SEARO region

High Child high adult morbidly population -1.24 billion see the table below for contribution of paralytic poliomyelitis to DALYs in the SEARO region:

Table: Contribution of paralytic poliomyelitis to the total DALYs

Total DALY	3,64,581
Communicable diseases, Maternal and Peri-natal Conditions and nutritional deficiencies Infectious and Parasitic diseases Tuberculosis STD excluding HIV HIV/AIDS Childhood diseases Meningitis, Hepatitis Malaria Tropical diseases- Trypanosomiasis, Chagas Disease, Schistosomiasis, Leishmaniasis, Lymphatic Filariasis, Onchocerciasis Leprosy, Dengue, JE, Trachoma Intestinal Nematodes, Ascariasis, Trichuriasis, Hookworm disease Respiratory infections-Acute lower, Acute upper, Otitis media Respiratory Infections Maternal Conditions Perinatal conditions Nutritional deficiencies -Protein Energy Malnutrition, Iodine deficiency, VitA Deficiency, Anemia	1,63, 137
Non Communicable Diseases Malignant Neoplasm :Mouth and Oro-pharynx, esophagus, stomach, colon/rectum, pancreas, trachea/bronchus/ling; breast, cervix, corpus luteum, ovary, prostate, Bladder, lymphoma, leukemia Other Neoplasm Diabetes Mellitus Nutritional /endocrine disorders Neuropsychiatry disorders-Uni-polar major depression; bipolar affective disorders; psychoses; epilepsy; alcoholic dependence; Alzheimer and other dementia; Parkinson's disease; Multiple sclerosis; Drug dependence; Post-Traumatic stress disorders; Obsessive-Compulsive	1,55,306

disorders; panic disorders Sense Organ Disorder-Glaucoma; Cataract Cardiovascular Diseases: Rheumatic heart disease; Ischaemic heart disease; inflammatory cardiac disease. Respiratory diseases: Chronic pulmonary obstructive disease; Asthma Digestive Diseases: Peptic Ulcer Disease; Cirrhosis of Liver; Appendicitis Diseases of the genitourinary system-Nephritis/Nephroses; Benign Prostatic hypertrophy; Skin Diseases Musculoskeletal diseases- Rheumatoid Arthritis; Osteoarthritis Congenital Abnormalities Oral Diseases: Dental Caries; Periodontal disease; Edentulisms	
Injuries Unintentional: Road Traffic accidents; Poisoning; Falls; Fires; Drowning; Other Unintentional Injuries Intentional: Self Inflicted; Homicide, Violence; War	46,138
Out of these polio	**Only 62**

ANNEX-3 LESSONS FOR HEALTH POLICY AND INTERNATIONAL COOPERATION IN HEALTH

A-3.1 Evidence Based Policy Making

In Most areas in public health interventions the links between evidence and the policy decisions, between before and after impact of the interventions are either tenuous or may not exist at all. There are several reasons for this:

- ✓ The baseline or benchmark data may not be available. In fact the program interventions invariably have as one of their objectives to create such a data for the first time.
- ✓ The nature of change in the specific health area may be amenable to a variety of influences and not just the proposed intervention
- ✓ The appropriate indicator for the proposed change in the health status may not be available.
- ✓ The impact may appear not immediately but some years after the interventions and hence early assessment may not demonstrate the desired changes
- ✓ The changes may be present but may not be measurable.
- ✓ The very effort of measurement and demonstrating impact may be a very costly undertaking.

Therefore health policy decisions are more determined by the political influences or compromise between different technical experts and the evidence-based policy making cannot be taken absolutely literally. While process indicators are mostly selected as proxy measures for monitoring the success of the program interventions, these do not really solve the riddle. Good evaluation studies in the long term can provide the only answer.

In the case of paralytic poliomyelitis we have already raised the following issues:

- ✓ The estimation of actual number of cases in the past from the reported cases that came from very inadequate surveillance. We have tried to question the multiplication factor of ten for this purpose. However, this is open to further discussion.
- ✓ More importantly we have demonstrated that the case definition has now changed and only the virologically confirmed cases are being reported. This could be one reason for decline in cases of poliovirus paralyses and we might be overestimating the impact of the pulse polio immunization

activities. (Reference- Vaccines and Biologicals; WHO vaccine-preventable diseases: monitoring system; 2002 global summary-page 20-poliomyelitis).

- ✓ Even more important is the issue raised by us of extrapolating this new information to estimation of the actual number of paralytic polio cases in the past due to poliovirus. This is important to assess the public health priority of this intervention. If large number of reported polio cases in the past were not due to poliovirus (which was not possible to detect at that time due to non-availability of laboratories), then the justification for this gigantic effort becomes even more questionable. It should be kept in sight here that polio eradication program is targeted on the polio-virus only and not on the acute flaccid paralyses of children or all cases of residual polio-paralyses of children which may be just ten to twenty percent of the toal cases.

It will be useful to give a list of number of public health programs that face this measurement problem:

Public Health Program	**Measurement Problem**
Water and sanitation programs	Difficult to measure improvement in waterborne and water washed diseases. The improvement in hygienic practices is used as one of the proxy measure.
HIV/AIDS prevention program	Difficult to demonstrate actual impact on disease prevalence. The condom uses has been used as proxies measure in the past. New indicators have been added in recent years.
Tuberculosis Control Program	Difficult to measure the impact on the prevalence of disease and reduction of multi-drug resistance TB. The treatment completion rates have been used as a proxy measure
Primary health care programs	Difficult to measure impact on the reduction of infant and child mortality. Service use data have been used as proxy measures.
Reproductive Health Programs	Difficult to measure the impact on the actual change in practices. The change in knowledge and attitudes have been used as proxy measures

A-3.2 Role of WHO other UN organizations and Global Public Private Partnerships

One may wonder why a reputed organization like WHO should not render wise counsel to India on its health program priorities and the feasible ways of achieving it. WHO and UNICEF enjoy universal respect as being the custodians of the international expertise on the technical health issues and also the neutrality of the UN organizations. However it is also a fact that many UN institutions including WHO have come under increasing criticism for being monster bureaucracies who have been unable to perform to the desired standards and mandate. The failure of WHO in Roll Back Malaria Program and dubious success in RNTCP is well known. In the case of Global Polio Eradication Program also launched since the year 1988, its reputation is completely at stake. **It is natural, therefore, for WHO to push India to further intensify the pulse polio program and strategy rather than admitting limited gains and withdraw honorably from it.** The G-8 nations are also providing liberal grants to the WHO and developing countries for the Global Polio Eradication on the recommendation of WHO to enable it to salvage its reputation. However they are doing it year by year and reserving the option to withdraw if they do not see the desired results. In that eventuality India will have no option but to withdraw from this very expensive strategy which it cannot afford to spend from its meager health budget.

It is difficult to find out whether the multinational vaccine Industry is playing any role in influencing these recommendations of WHO and UNICEF. It is a known fact that UNICEF has the monopoly on the procurement of the vaccine and gets twenty- percent commission from this. Therefore it has a vested interest in the entire program and has no right to render technical advice on it.

Another dimension is added to the entire situation by the introduction of the newer expensive vaccines for many other diseases by the multinational vaccination Industry and marriage of WHO with this industry. Hepatitis B vaccine has already been accepted in India for part-introduction in the selected districts of he country under the general vaccination program for the children. Several newer vaccines are already on the table. These so called national programs are now being promoted by the liberal grants offered by Gates Foundation in Andhra Pradesh in India and globally through the GAVI initiative in WHO chaired by Bill Gates. It is expected that after initial phase of grant funding by these foundations the national government and the state governments will bear these costs from their own budgets. Whether these expensive vaccines are required as per the epidemiological profile of the country and the financial priorities for the disease control programs and health systems development is open to debate.

It is not our intention to here to find fault with any organization. It is natural to believe that WHO was emboldened by the success of the strategy in Latin

America in early nineties and the new success in Western Pacific Region including China in late nineties. It had therefore a strong ground to believe that the same performance could be repeated in India given the sufficient resources and efforts and despite the fact that India had poorly performing general health systems. That is the kind of fundamental logic with which WHO and donors have been working since nineteen eighties and this is not the place to question this logic. However acceptance of good intentions of WHO does not help us here. We have to scrutinize whether WHO has the capacity to render sound technical and policy advice to us in this difficult situation and how we should apply our own wisdom to sift through the options placed before us by the WHO technical experts in the field and choose the best option for us and not follow the WHO dictate in this matter. In this context we would like to highlight that there was substantial shift between 1994 and 1999 when WHO proposed a IPPI instead of shifting to localized campaigns and strengthening routine immunization as was envisaged originally in 1995-96, after the polio cases drop significantly due to the NIDs . The cases did drop but WHO insisted on the intensification of the campaign on the plea that routine immunization was poor in some states and in order to build sufficient resistance, number of SIA should increase. This has costed the country dearly.

Child vaccination project (Andhra Pradesh) funded by the Gates Foundation does envisage the cost to be met from the budgetary resources of the state government or the grants from the central government. Therefore the sustenance of the financial resources by grant mechanism is not possible and we have to take into account our priorities before taking any program for implementation. There is no free lunch in the world. Even if there is one, we need to see whether we really need it?

Public-private health partnerships: a strategy for WHO

In 1993 the World Health Assembly called on WHO to mobilize and encourage the support of all partners in health development, including non-governmental organizations and institutions in private sector, in the implementation of national health strategies for health for all. Subsequently the interaction with commercial sector has broadened and deepened. WHO participates in a number of global public private partnerships. These collaborative relationships transcend the national boundaries and bring together at least tow parties, a corporation (or industry association) and an intergovernmental organization, in order to achieve a health creating goal on the basis of mutually agreed and explicitly defined division of labor. Nearly 70 global partnerships have been identified.

Table: List of WHO Public Private Partnerships

European Partnership Project on Tobacco Dependence
Global Alliance for TB Drug development

Global Alliance to eliminate Lymphatic Filariasis

Global Alliance to eliminate Leprosy

Global Alliance for Vaccines and Immunization

Global Elimination of Blinding Trachoma

Global Fire Fighting Partnership

Global Partnership for healthy aging

Global Polio Eradication Initiative

Global School Health Initiative

Multilateral Initiative on Malaria

Medicines for malaria ventures

Partnership for parasite control

Roll Back Malaria

Stop TB Initiative

UNAIDS/Industry Drug access initiative

Views on Public private partnerships

Kent Buse & Amalia Waxman – Public-private health partnerships: a strategy for WHO kentbuse@yale.edu

"Public-private partnerships have elicited strenuous objections. The types of questions that have arisen include: are partnerships desirable, and under what circumstances, from a societal point of view? What are the appropriate criteria for selection of candidate companies, industries and activities, and how are such criteria developed? How can interactions be structured and monitored in order to avoid or deal with conflict of interest? How can partnership be made to function in accordance with principles of good governance?

In relation to WHO, critics believe that some of their fears are materializing. For example, it is charged that the independent setting of standards was jeopardized during elaboration of guidelines for the management of hypertension because of influence of a firm that stood to benefits from them. Similarly, is ahs been asserted that deliberations on breastfeeding were subject to 'censorship' because of consideration of sensibilities of WHO's new commercial constituencies. Others argue that WHO's emphasis on marginalized will be displaced as resource rich partnerships dictate organizational priorities and strategies. It has been suggested that WHO's involvement in Global Alliance for Vaccines and Immunization has derailed its commitment to equity in relation to the goal of universal vaccination with traditional vaccines, as it joins its partners in bringing new vaccines to relatively less hard to reach. Moreover for understandable reasons, partnerships sometimes focus, at least initially on countries and activities that offer reasonable chance of success. Thus they usually concentrate on relatively affluent countries rather than on those that are very poor, and on drug donations and development instead of the more difficult challenges of capacity development for service delivery and research in low-income countries. Yet even relatively non-controversial initiatives such as donation programs, may have ***considerable and unintended consequences linked, for example, with costs to recipients, sustainability and equity, which could damage WHO's reputation by association***".

Robert G. Ridley-(e-mail- ridleyr@mmv.org)
Chief Scientific Officer, Medicine for Malaria Venture,

" It is vitally important that public and private sector discussion, engagement, and partnership are raised to a global level. Despite the competitive environment in which the pharmaceutical industry operates, there ought to be mechanisms whereby an increased amount of its huge resources and expertise can be targeted towards tackling the diseases of the poor. Similarly if the public sector is to take lead in this whole area it has to commit resources that can realistically incentivize private sector partnership and investment. One of the biggest incentive for companies, private foundations and other non-governmental organizations to commit themselves (i.e.provide resources) to a partnership is ***having the confidence that public sector is serious about developing appropriate infrastructure and capacities necessary to use partnership outputs for enhancing global health***. The increase in resources that have been made available by both public and private sectors in recent years, complimented and *in many cases stimulated by philanthropic donations,* suggests that sufficient political will is developing to make an impact. Both public and private sectors in recent years stand an improved chance of delivering on their objectives if they can find better ways of collaborating".

James Orbinnski- (e-mail- james.orbinski@utoronto.ca)-Chairman, Drugs For neglected Diseases Working Group. Munk Centre for International studies, University of Toronto, Canada

" Charity and philanthropy have been key and welcome driving force behind most public-private partnerships. *While helpful and catalytic, though, they are not a substitute for good and responsible government in the North and South.* Even within a clear vision and mission, public-private partnerships cannot displace the responsibility of government to ensure and promote people right to equitable access to health care, and to set the health agenda both nationally and globally. Public-private partnerships, their stakeholders and national citizens must insist that government and intergovernmental institutions fulfill their responsibilities in properly funding and directing need based R&D. ***Governments still have a duty to ensure that appropriate resources and capacity exist in independent national and intergovernmental institutions to set, drive, monitor and critically evaluate the national and global health agenda.*** This is a minimum requirement and goes far beyond the disease specific initiatives which typify most new public-private partnerships".

Public Private Initiatives in Health at the Global Level

Workshop organized during the World Social Forum in Porto Alegre, 25 January 2003

Background paper

1. Position

As a result of globalization, the influence of the multinational corporations at the global level has increased enormously. This influence has stretched out into the social sphere and also in the international political ambits, like UN-system.

In 1999 Kofi Annan said to the World Economic Forum that the UN once only dealt with governments but that by now he knows that peace and prosperity cannot be achieved without partnerships **involving the business community**. Also the director of the WHO, Gro Harlem Brundtland, has affirmed several times that today's health problems are so vast and complex that tackling these problems requires the participation of all sectors, **including the business sector**.

These statements reflect the recent trend of mushrooming of initiatives, especially in health, whereby UN institutions like WHO and Unicef collaborate with pharmaceutical companies and foundations such as the Bill and Melinda Gates Foundation. They tackle health problems like the **vaccination of children, the lowering of prices of patented drugs, the development of new medicines and drugs for tropical diseases, etc.** These so-called global public private initiatives allow the UN institutions **to access financial resources they could not access before and provides the business sector with opportunities to influence health policies as they never could before.** For example:

one of the conditions of the industry in the Accelerating Access Initiative[1] was that **countries that wanted reduced prices for anti-retroviral medicines would not allow import or production of cheaper generic versions produced in Brazil or India.** In addition the industries involved, which often are pharmaceutical companies, can and do **use these initiatives to raise their public profile.**

From our perspective as civil society organizations working on the right to health, this new phenomenon raises many questions. The most fundamental question is whether public interests and values like equity and universality can ever be compatible with private interests and values of free entrepreneurship, raising profits and rewarding shareholders. Therefore it is of critical importance to know –apart from the goals- **how decisions are taken, how accountability is arranged for, how the operative systems are organized and how sustainability is assured.** All these points involve many risks. These aspects have important consequences in public health and development terms.

So far little information is available about the real benefits these initiatives have delivered for especially vulnerable and excluded populations, and for the strengthening of comprehensive health systems. **The information that we do have is not very promising.** Until now only a few thousand HIV/AIDS patients in Africa benefited form the drugs that have been made available through the Accelerating Access programme, while millions of people suffer from the disease. And it was the countries themselves that had to take care of transportation and distribution of the drugs, which meant that they had to divert funds and manpower from other health activities. The worst of it all was that **the prices negotiated were even higher than the prices of generic drugs coming from India.**

2. Historical Background

Going back in history it appears that until the 1970's, international cooperation in health was driven by the notions of basic needs, participation and social justice. In 1978 the international community adopted the Alma Ata declaration in which health for all by the year 2000 was proclaimed. Important principles of the Alma Ata declaration are: integral approach to health, comprehensive health care, prevention, primary health care and community participation.

However, in the 1980's the world was hit by an economic crisis and the financial support for health and health care decreased very quickly. At the end of the decade, the World Bank and IMF introduced their Structural Adjustment Programs. What was left of Alma Ata was a selective Primary Health Care approach, whereby vertical vaccination and programmes were carried out.

[1] In the Accelerating Access Initiative 5 UN organisations and 5 pharmaceutical companies work together to lower the price of patented retrovirals. Price negotiations take place with individual countries and are secret.

In the 1990's after the falling down of the Berlin Wall a change started. In line with neo-liberal thinking, **health is promoted as a private asset in stead of a human right and a public good.** Increasing participation of the private sector, less governmental involvement, privatization, the introduction of user fees and so on are the main features of health policies. In international health, this tendency has had a critical point with the publication of the World Development report 1993 of the World Bank, 'Investing in health' that was the start point for the Health Sector Reform policies. **The need to invest in selected, cost-effective interventions was elaborated and developing countries were seen as markets.**

This tendency of less government involvement and the introduction of market mechanisms were promoted in many social sectors. Health was considered a commodity. Although already in the 80's vertical vaccination programs were introduced whereby the public and the private sector collaborated, **we see more and more initiatives with a top-down, narrow approach of health problems in which technologies and pharmaceutical producers (pharmaceutical transnational companies) play a dominant role.** Consequently the number of this kind of programs increased steadily.

At the present time we face a situation whereby some transnational corporations are financially bigger than many small Southern countries. In the international arena, they have become major players and influential actors that make use of the fact that their conduct is essentially regulated on a national level. At the international level they lobby for rules and regulations that protect their patents, their investments and their market access.

We see that due to the increasing gaps between rich and poor countries and between social groups within countries, **several communicable diseases related to poverty and the lack of fulfillment of basic needs have taken astonishing proportions (AIDS, Malaria, TB and others). New Public Private Initiatives are expected to play a role attacking these problems.** But the proposed approaches seem emergency actions (top down, non integral approach, without strengthening local structures, magic bullets, etc) that respond **more to the immediate interests of the partners involved than to the real needs of the affected populations.**

3. Issues to be debated

Since the mushrooming of Public Private Initiatives at the global level is a very new phenomenon, the analysis of this trend encounters difficulties. The first problem is the number and the diversity of these initiatives. **Today more than 80 have been identified, all having their own goals, structures, ways of operation, funding mechanisms etc.**

A second major problem is the definition of what Public Private Initiatives exactly are: who are the partners, what is partnership. A critical aspect is: What is private? Does it include NGO's and other civil society organizations? How should the big foundations like the Gates Foundation be classified?

Next to this, other fundamental questions arise like: **Who decides in a partnership and who *should* decide?** What is the desired governance structure? Another crucial issue is accountability. Most of these initiatives have autonomous secretariats and boards. At the same time, they are closely related to the UN-system: in fact, the UN is part of these initiatives. In this way, situations are created that could put at risk the independence and legitimacy of the UN itself.
It is very clear that the values and motives of the actors differ. A fundamental question is whether the motives and values of a public body can at all be joined to the values and motives of a business entity without losing its critical functions. **It is of critical importance to know how a specific PPI was established and whose interests predominate when decisions are taken.** The issue of accountability is also a very crucial one, since many these initiatives have their own secretariat outside the UN-system.

Due to the complexity and magnitude of some health problems, PPI's in health at the international level can offer some opportunities like: additional financial resources for health, increasing attention and political support for health, the involvement of new social actors, etc. But we must also be aware of the **considerable risks** involved: **conditionality of financial support, pulling resources from donors, lack of attention for equity and non-discrimination, establishment of parallel systems, the weakening of the already feeble health systems in developing countries and lack of sustainability.**

We feel it is very opportune time that a public debate takes place on:

- Are these PPI's **desirable and appropriate** to solve major health problems of poor countries? Which alternatives do exist to tackle these problems?
- Since they became so frequent: criteria are needed to **assess their impact** in terms of: outcomes for public health, outcomes for poor and excluded groups, outcomes in terms of outputs, outcomes related to the objectives of the partners.
- The need to have more public information on the **effects of PPIs on public health, health systems and the realization of the right to health for all.** How equitable are these initiatives?
- The interrelation with WHO: Clear guidelines for interaction are needed to avoid the **risk of fragmentation and the loss of credibility of the international regulatory system.**
- The **real motivations and interests of pharmaceutical companies involved in these initiatives**. What are the effects of these partnerships in terms of **increasing the power and influence of these transnational corporations at the national and international level?**

We would like to start that debate today.

Wemos, the Netherlands.

DRAFT REPORT

ON

CASE STUDY ON PULSE POLIO INITIATIVE IN MURSHIDABAD DISTRICT WEST BENGAL INDIA

BY
SUBHANKAR, SANGHAMITGRA, D.P.PODDAR, DR. U.K.BHADRA

SUPPORTED BY

WEMOS, HOLLAND

1. INTRODUCTION

This Report is places the salient findings of a Survey conducted in selected Blocks in the district of Murshidabad district, West Bengal focusing on Pulse Polio initiative and some selected issues pertaining to rights to health of the marginalized section of the society.

2. OBJECTIVE OF THE STUDY

- A survey of Pulse Polio Immunisation Initiative at the local level
- To explore the health infrastructure at the local level in order to assess in what manner the rights to health of the marginalized people are protected.

3. AREA OF THE STUDY

3.1 General

The Study was conducted in selected Districts in Murshidabad. Murshidabad has indelible place in the history of India. It was in the battle of Plassey that the then Nawab of Murshidabad, Siraj-ud-dowlah lost to Robert Clive of East India Company and The English East India Company made entry into India.

Coming to the present context, a part of the district has Bangladesh on one side and Jharkhand on the other. The main river of the land Bhagirathi runs through the district.

Proximity to national and international border makes a part of the district accessible to migrants with associated problems. The following table gives brief introduction to the district.

Table I Brief Profile of Murshidabad District

Area	5324 Sq. Km.
Population (as per Census 2001)	58,66,569
Sex Ratio	51.22:48.78
Density of Population (Per sq. Km.)	1101
Literacy Percentage	55.07
No. of Sub divisions	5
No. of Blocks	26

3.2 Area under focus

The area where the Study was carried out was divided into two virtual zones:

1. Zone H : consisting of sampling units that are 'High Risk'
2. Zone L : consisting of sampling units that are 'Low Risk'

The risk factor assigned to the areas has been as per perception of the District Health Administration.

The Zone H Consists of sampling units in Dhulian town, Farakka, Samsherganj block, Suit-I block, Suti-II block, Raghunathganj-I block, Raghunathganj-II block.

The Zone L consists of sampling units in Murshidabad Jiaganj, Murshidabad town, Berhampore block, Beldanga-I block, Beldanga-II block.

The zones are demarcated in the map enclosed.

4. METHODOLOGY

- The study was based on Cluster Sampling as per WHO guidelines.
- In the context of this study, Cluster means Village Units or Wards in Urban Municipalities.
- 30 Clusters were selected in each zone.
- Clusters were selected purely on random basis.
- 7 Households were selected in each cluster.
- The sample size in each Zone is 210
- The rural-urban mix of the sampling units in two clusters was almost equal.
- The Total sample size for two zones combined together is 420.
- The List of samples are furnished in Annexure I

The Study has been carried out in two parts.

- The first part seeks to assess the Coverage of the Pulse Polio Immunisation Drive for three National Immunisation Days; February 22, 2004, January 4, 2004 and November 9, 2003.

  This particular survey is conducted on the basis of randomly selected 7 consecutive children in each cluster.
- The second part of the study concentrated on 7 families, each one having at least 1 eligible child.

The household were selected on the basis of two **eligibility criteria**;

- The household is required to have a child aged equal to or below 5 years.
- The child was to live in the area continuously for at least six months.

5. LOGISTICS

The study was carried out for three days on March 27, 28 and 29, 2004.

40 Investigators and 10 Supervisors were employed for data collection. A One-day Training session was organised for the Trainers and Supervisors by the Research Team and Experts.

The total distance covered to reach the villages and town, selected randomly, was approximately 3500 km.

Two sets of questionnaires were specifically framed to assess in what manner rights to health are protected in the context of the IPPI Programme. One was o assess Coverage and the other was intended for the Household-level study. Therefore, the scope of the study goes beyond a mere case study of Pulse Polio.

Apart from the Questionnaire Survey, viewpoints and opinions were solicited from senior officials associated with Pulse Polio Programme. Their inputs have been incorporated in the Report.

The Research Team also visited the Pulse Polio Booth on the NID dated February 22, 2004 the details of which are also included in this Report.

6. FINDINGS OF THE POLIO PROGRAMME – COVERAGE STUDY

The following two tables give the findings of the Coverage Survey in two Zones.

Table II Pulse Polio Coverage – Zone H

February 22, 2004		January 4, 2004		November 3, 2003	
Participated (%)	Did not Participate (%)	Participated (%)	Did not Participate (%)	Participated (%)	Did not Participate (%)
98.09	1.91	92.86	7.14	90.95	9.05

Table III Pulse Polio Coverage – Zone L

February 22, 2004		January 4, 2004		November 3, 2003	
Participated (%)	Did not Participate (%)	Participated (%)	Did not Participate (%)	Participated (%)	Did not Participate (%)

99.52	0.48	98.57	1.43	97.14	2.86

It is evident from the above findings that the Coverage Ratio is quite high and for the people under the sample the coverage ratio seems to increase with every NID.

According **Dr. B.R. Manna, Joint Director of Health Services, Department of Health & Family Welfare, Government of West Bengal,** 'the coverage for the Pulse Polio has touched 98% in the recent NIDs. Still, there exists some loopholes in the system which prevents cent per cent coverage. Around 0.15 to .20 million children fall outside the Pulse Polio Net for every NID. Efforts have been intensified, in many cases in collaboration with the NGOs to close this gap.'

7. PROFILE OF THE RESPONDENTS

This section deals with the profile of the people under the Household Survey.

ZONE H

7.1 Income Status

Table IV Income Status of the Respondents

ZONE	Below the Poverty Line (BPL) (%)	Above Poverty Line (APL) (%)
H	71.43	28.57
L	71.04	28.96

It is evident from the above data

- The sample consists predominanatly of economically marginalized people

7.2 Occupation Profile

Table V. Occupation Profile of the Respondents

Occupation	H	L
	%	%
Daily wage earner	70.48	72.38
Service	7.14	6.67
Self Employed	17.15	17.14
Uemployed	1.90	1.90
Other	3.33	1.91

It is evident that the occupation structure of the respondents of the two zones is almost similar.

7.3 Education Status

Table VI Education Level of the Respondents

	Education Level of Mother			Education Level of Father		
ZONE	Attended School (%)	Not Attended School but able To Read (%)	Illiterate (%)	Attended School (%)	Not Attended School but able To Read (%)	Illiterate (%)
H	26	22	52	36	33	31
L	51	16	33	50	20	30

It is evident from the above table that

- The percentage of illiterates are more among women for Zone H
- Also for Zone H, general level of education is higher among men. Percentage figures are higher for both level of formal education and literates for men.
- Zone L has much better literacy and general education indicators for women.

The respondents were asked to tell the date of birth of their child. The findings revealed that

- **56% of the respondents in Zone H failed to inform the exact date of birth of the child**, either according to English or Bengali Calender.
- **For Zone L, this figure is considerably lower at 35%.** Relatively high literacy rate among mothers may be one of the factors.

Failure to record the date of birth of the chills has important bearing on health and other entitlements for the child in future.

7.4 Religion Profile

Th erespondents of the Survey in the Zone H has two religious groups. The break-up is given as follows:

Table VII Religion Profile of the Respondents

Religion Group	H	L
	%	%
Muslims	64	33

Hindus	36	67

7.5 Caste Profile of the Respondents

Table VIII Caste Profile of the Respondents

Caste	H	L
	%	%
Scheduled caste	16.00	26.00
Scheduled Tribe	0.50	16.00
Other Backward Classes	6.00	6.00
General	77.50	42.00

Muslims have been assumed to belong to General Caste.

8. FINDINGS ON HEALTH DETERMINANTS – DRINKING WATER AND SANITATION FACILITIES

Drinking water and sanitation facilities are two of the most important health determinants in the context of protection to rights to health. This section seeks to explore these two determinants in the context of the Survey.

8.1 Drinking Water

- In **Zone H**, out of the households surveyed, 99% have Tubewell as the source of Drinking water. However, 1% of the respondents still use pond water as the source of drinking water.
- In **Zone L**, 96% of the respondents reported Tubewell as the source of Drinking Water, 2% reported Pond/River and 2% others, mainly Tap water.

Perception on Arsenic contamination among the respondents was investigated. The findings are summarised in Table IX.

Table IX Perception on Arsenic Contamination

Perception on Arsenic Contamination	H	L
	%	%
Think water to be Arsenic Free	29	25
Think water to be Arsenic contaminated	23	11
Do not know	48	64

8.2 Sanitation Facilities

The quality of Sanitation facility is generally poor and this is evident from the following table.

Table X Nature of Sanitation Facilities

Type of Sanitation Facilities	H	L
	%	%
Do not have Sanitation facilities	76	56
Have Sanitation facilities	34	44

Although the situation somewhat better in Zone L, still sanitation Coverage is generally poor.

9. FINDINGS ON THE POLIO PROGRAMME – HOUSEHOLD STUDY

The results of the Survey conducted in Zone H gives the following results.

9.1 Participation

- In Zone H, children in the 91% of the Households participated in the three consecutive Pulse Polio NIDs in November, 2003, January 2004 and February 2004.

- This figure is 95% for Zone L.

The Survey brings out wide coverage of the Programme, which is tandem with the claims of the Government.

How the Jola Community was won over

The Jola community, by religion Muslim, in the Suti-II Block of the Murshidabad district showed resistance to Pulse polio Programme for two years. According to **Mr. Amitabha Mukherjee, former District Governor, District 3290, Rotary International,** innovative approaches were adopted to bring this community in the fold. Majority of these people work in the local tobacco (*bin*) industry. Almost all of them are regular visitors to a local red light area and the Commercial Sex Workers seemed to have considerable influence on them. The Commercial Sex Workers were sensitised about the utility of the Programme so that they could transmit this message to these people. Additionally, the owner of the factory with which these people are associated either as employee or as daily labourer was also sensitised and was made a Rotarian. He issued instruction to these people to participate in the Programme. After this, the participation has been almost universal.

9.2 Place for Vaccination

- In Zone H, 82% of the children went to PP Booth for Immunisation, while 18% took vaccination at home.

- This figure is 96% for Zone L.

Table XI Proximity of the Polio Booth from Residence

Proximity of the Pulse Polio Booth from Home	H	L
	%	%
Within Walking Distance	70	52
Not very far	27	43
Too far	2	1
Dn Not Know / Cannot Say	1	4

- Those who took the vaccination at home expected the Health workers to come home for vaccination.

-

9.3 Reasons for Non-participation

The figures for non-participation is low and the figure is gradually on the decline. However, since the Pulse Polio Programme has Complete Eradication of Polio as the sole objective, every reasons for non-participation, even by a handful people deserves special look.

The reasons for non participation on the basis of replies rerceived from the respondents who did not participate in the Programme are as follows:

Table XII Reasons for Non-participation

Reasons narrated for non-participation	H	L
	%	%
Never heard	10	60
Not aware of time & day	5	
No visit by service providers	15	
The child was travelling to other place	25	
The child was sick		20
No one to take the child to the Booth		20
Inconvenient day/time/venue	10	
Session not held	5	
Advised by doctor	5	
Rumour on side effect	5	
Fear of getting polio after vaccination	5	
Community boycott	15	

9.4 Type and Level of Awareness on Pulse Polio Programme

The Government machinery, along with the partner organisations make elaborate arrangements to inform the people about the Pulse Polio Programme. The study sought to capture which form/s of messages are received by people on the Pulse Polio Programme. The findings are given in Table XIII.

Table XIII Source of Knowledge on the Pulse Polio Programme

Source of Knowledge	H	L
	%	%
Loudspeaker / Drumbeating	31.28	25.00
Health Worker	18.21	30.00
TV	11.79	13.00
Radio	8.97	8.50
Anganwadi Worker	7.69	9.50
Wall Painting / Posters / Hoarding	5.64	8.00
People's Representative	4.36	1.00
Nobody / Never heard of IPPI	4.10	0.00
Newspaper / Magazine	2.82	2.00
Relative / Friend	1.79	1.00
Religious / Community Leader	1.03	0.50
Teacher	0.77	1.50
Private Doctor (General)	0.51	0.00
Govt. Paed(Splst)	0.51	0.00
Govt. Doctor (General)	0.26	0.00
Pvt Paed (Splst)	0.26	0.00

Opinion was solicited from the respondents to ascertain their perception on the necessity of the Pulse Polio Programme and whether they feel Polio as a major threat.

- Around **85% of the Respondents in Zone H, feel this Programme as 'necessary'**.
- In Zone L, 95% of the respondents feel this Programme to be necessary.
- **64% of the respondents in Zone Hsee Polio as a major threat**
- **The same figure for Zone L is 73%**

9.5 Level of Awareness on Polio the Disease

The respondents were asked to inform how Polio occurs, what are their symptoms and where they take their children in case pf Paralysis. The findings are as follows.

Table XIV Awareness on how Polio Occurs

Awareness on Polio Occurrence	H	L
	%	%
Know how Polio Occurs	16	10
Do not know how Polio occurs	84	90

Table XV Awareness on Symptom of Polio

Symptoms	H	L
	%	%
Weakness in the limbs	15	25
Fever followed by sudden weakness of the limbs	6	1
Paralysis since birth	0	0
Sudden weakness of limbs followed by fever	5	3
Do not Know / Cannot Say	72	70
Others	2	1

Table XVI Knowledge on where to take the child in case of Paralysis

Nature of Facility	H	L
	%	%
Govt. Hospital	28	45
Primary Health Centre	19	22
Subcentre	6	9
Pvt. Hospital / Pvt. Clinic	7	11
Anganwadi Centre (AWC)	0	0
Do not Know / Cannot Say	29	10
Other (Specify)	11	

It is noticeable from the findings in Table XV that a considerable portion, around 30% for Zone H and 10% for Zone L are still unaware where to take the children in case of Paralysis.

9.6 Advice on Regular Immunisation on NID

The respondents were asked to inform whether they are communicated about the need for regular immunisation on the Pulse Polio day.

- For Respondents in Zone H, 56% respondents reported that they were not communicated to take vaccines other than polio.
- The same figure for Zone L is 69%

9.7 Proper Maintenance of Cards

The Respondents were asked whether they maintain cards for Regular Immunisation as well as for Pulse Polio. The findings are as follows:

Table XVII Maintenance of Cards

	Yes (%)	No (%)
Maintain Regular Immunisation Card		
ZONE H	56	44
ZONE L	76	24
Maintain Pulse Polio Card		
ZONE H	46	54
ZONE L	68	32

9.8 Perception on Adverse Effect of Polio Vaccine

- 25 % of the Respondents in Zone H feel that there are adverse effects of Polio Vaccine with Fever as the most common adverse effect.
- The figure for Zone L is 22% with fever as cited as the most common side effect.

9.9 Perception on Safety Factors associated with Polio Vaccination

Table XVIIIa Safety Factors associated with Polio Vaccination – Zone H

Factors	Yes (%)	No (%)	Do Not Know (%)
Safe to administer Vaccine to neo-natals	74	5	21
Safe to administer Vaccine to children with diarrhoea	32	40	28
Safe to administer Vaccine to children with fever	38	38	24
Safe to breast feed the child after Vaccination	56	30	14

Table XVIIIb Safety Factors associated with Polio Vaccination – Zone L

Factors	Yes (%)	No (%)	Do Not Know (%)
Safe to administer Vaccine to neo-natals	74	10	16
Safe to administer Vaccine to children with diarrhoea	42	34	24
Safe to administer Vaccine to children with fever	42	39	29
Safe to breast feed the child after Vaccination	43	34	23

It is evident from the above table that the level of awareness on various issues is quite considerable.

10 FINDINGS ON THE HEALTH INFRASTRUCTURE

In order to assess the manner in which the rights to health are protected, the respondents were posed various questions on the health system under.

10.1 Physical Accessibility

The respondents were asked how far the nearest health facility from their home and the replies are as follows.

Table XIX Distance of Medical Facility from the residence of the respondents

Distance	H	L
	%	%
Within 4 Km	70	83
Between 4-8 Km	14	11
Beyond 8 km	16	6

10.2 Quality of Service

The quality of the services depends crucially on the type of the health centre and in what manner the health centre is equipped to handle the health dysfunction. Table XX below traces the responses of the respondents of the quality of the Health Infrastructure that is nearest to the residence of the respondents.

The answer varies because the Survey was conducted over a wide area covering around 1500 kilometers.

Table XX Nature of Health Facility

Nature of Health Facility	H	L
	%	(%)
Sub-centre	37	54
PHC	39	37
BPHC	15	4
Rural Hosp	7	4
Higher Grade Hospital	2	1

Table XXI Facilities sought at the time of Illness

Nature of Services sought	H	L
	%	%
Non-Govt. Facility	73	47
Govt. Facility	37	53

The reason why non-Govt. facilities are chosen by people were investigated and the replies are given in Table XXI

Table XXII Resons for Preference for non-Government Facilities

Reasons	H	L
	%	%
Government Facility is too far from home	38	32
Non-availability of Medicine	29	34
Misbehaviour of staff	11	14
Too long wait	11	14
No doctor	3	4
Ineffective medicines	3	2
Don't know where	1	
Other	4	

If the findings of Table XXI are placed together with the findings of Table XVIII, there may be an apparent contradiction. One possible explanation could be that the Health

infrastructure that are near to the homes of the respondents are not equipped enough to handle the medical needs of the people.

11. COLD CHAIN MAINTENANCE

Cold Chain is one of the most crucial aspect of the Pulse Polio Immunisation Drive and elaborate arrangements are organised to maintain Cold chain for the Polio Vaccine.

In the context of Pulse Polio Immunisation Drive in Murshidabad, the manner in which the Cold Chain is maintained has been examined.

The central storing place for the vaccine in Kolkata is at Family Welfare Store in Bagbazar. The vaccined are packed in vaccine carriers and transported to Baharampur and stored in Walk-in-Coolers (WIC). From WIC, Baharampur, the vaccines are transported to BPHC and PHCs one Day before Day I of the Pulse Polio Drive. On the day of the vaccination, the health workers collect the vaccines from PHC/BPHC and carry them to venue.

For instance, the vaccines for the Baharampur Block is carried to the Karnasubarna BPHC and from there the health workers carry the vaccine to the venue.

For Suti II Block, the vaccines are stored in Maheshail BPHC,

According to Mr. S.S. Chowdhury, Cold Chain Officer, Department of Health & Family Welfare, Govt. of West Bengal, there has been improvement in cold chain maintenace in the recent years.

There are two crucial aspects to Cold-chain maintenance. One is technical aspect. This relates to the equipment and other arrangements. Equipment can be divided into electrical and non-electrical. Electrical process is resorted to when there are infrastructures for Refrigerators and Coolers. The places where electrical arrangements are absent, cold-chain is maintained through ice.

Another aspect is human aspect. This relates to the manner in which the cold-chain system is handled by various health workers involved in the process of cold-chain maintenance.

On the technical side, efforts are made to smoothen the process. However, a few problem areas still remain. One problem area is the wiring system in many centres that are not suitable and requires repair.

On the human side, Training is provided to all the personnel at the Block level involved in Cold chain maintenance, transportation of the vaccines and administering vaccines.It was noticed that most of the health workers involved in transportation and administration of vaccines are aware of the Expiry label on the vaccine vial. They were also aware of the manner in which vaccine are to be handled at the time of vaccination.

However, the Cold Chain Officer feels that, there is scope to augment the Training aspects of the Health workers and he has suggested Training by means of Audio-visual Aid to the Health Workers.

12. NOTES ON THE PROTECTION OF RIGHTS OF HEALTH OF THE MARGINALISED POPULATION

This section seeks to explore Protection to Rights of Health in the context of IPPI and the Genral Health Infrastructure in the context of selected parameters.

12.1 Availability

IPPI

Pulse Polio services are available. In fact special efforts are undertaken by the Government machinery to make the services available at the doorsteps. This is the reason why the coverage of the programme is wide and is increasing with every NID. This has been corroborated in the present study as well.

General Health Infrastructure

In respect of the general health services in, the availability is not guaranteed. In fact, it is the common refrain of the people that it is the Polio Drops that they receive without even asking. However, in case of services for serious and even common ailments, they fail to get the services in many instances. This is reflected in Table XXI.

12.2 Accessibility

Accessibility will be looked into in terms of Physical Accessibility, Economic Accessibility and Information Accessibility.

12.2a Physical Accessibility

IPPI

In majority of the cases Physical accessibility is not a problem. As per Table XI, majority of the respondents have reported that the Polio Booth is either at walking distance or not very far. Even if the respondents do not turn up at the Booth, the Health workers visit home and administer the drops.

General Health Services

Physical inaccessibility of the Government Health services is one of the findings that emerge from this study. Although 70% of the respondents report that they have a Health centre within 4 Km from their home, still a majority opt for non-Govt services when their child fall sick. This implies that the properly equipped health infrastructure is not within the reach of the majority of the population, a substantial portion of which is marginialised.

12.2b Economic Accessibility

IPPI

Since the Pulse Polio services are obtained for free, no health right is violated in this context.

General Health Services

The health rights of marginalized population is likely to be violated when they opt for private health facilities instead of Govt. facilities. This is because, the private facilities are much more expensive than what is offered by the Government Infrastructure.

12.2c Information Accessibility

IPPI

Violation of Information accessibility was noticed in case of IPPI. This is evident from Tables XIV, XV, XVI and XVIII.
As per findings summarized in Table XIV, majority of the respondents are unaware of how polio occurs.
As per Table XV, a sizeable proportion of the respondents are ignorant of the symptoms of polio.
Table XVI reveals that around 30% of the respondents do not know where to take their children in case of Paralysis.
Table XVIII reveals that the safety factors in the context of the Polio vaccine is unknown to a sizeable proportion.

General Health Services

Information inaccessibility in the context of health determinant is evident from Table IX where it is evident that 48% of the respondents are unaware of the fact whether the water they drink is Arsenic-contaminated or not.

13 CONCLUSION AND RECOMMENDATION

The conclusions of The Report are:

- Pulse Polio Immunisation Programme has achieved wide coverage, although full coverage is still not possible
- Although a sizeable proportion of the respondents perceive this programme as 'necessary' and consider this disease as a 'major threat', majority of the

respondents in both the zones are unaware of how Polio Occurs and what are the symptoms of the disease.

- A sizeable proportion also do not have clear idea about the health seeking behaviour in case of Paralysis.
- The nature of sanitation facilities is generally poor and that has direct bearing on the management of the disease, because, Polio is a water-borne disease.
- The technical aspect of the Programme, the Cold Chain system in particular requires upgradation.
- The general health infrastructure requires upgradation in order that the rights to health of the marginalized people are protected.

RECOMMENDATIONS

- Vertical Polio implementation programme should be seen in the context of Primary health Care approach and necessary policy decision required to be made for integrated health approach to ensure health and well being of people
- Awareness Generation with holistic approach. This would mean generating awareness on importance of sanitation habits, making them aware of the symptoms etc.
- Training Peer Groups in the society who can take lead in Awareness Generation Programme.
- Research on Health Management, both relevant issues including the health determinants
- Lobbying in the relevant fora
- Advocacy with appropriate authorities
- Sensitization of Press and Media

PLANS FOR LOBBY/ADVOCACY

The thrust of the Lobby/Advocacy efforts would be to ensure that health determinants do not have adverse impact. Besides other, two main determinants may be brought under focus: Safe Drinking Water and Proper Sanitation Facilities.
The target for Lobby / Advocacy initiatives may include

- Decision Makers
- Government Officials
- Corporate Houses
- Industry Associations
- Peer Leaders of the Society
-

ANNEXURE I

LIST OF CLUSTER SAMPLE

		ZONE H	
	LEVEL	NAME	
	TOWN	Dhulian (M)	Urban
1	WARD	Dhulian (M) - Ward No.4	Urban
2	WARD	Dhulian (M) - Ward No.15	Urban
	WARD	Dhulian (M) - Ward No.19	Urban
3	WARD	Jangipur(M) - Ward No.8	Urban
4	WARD	Jangipur(M) - Ward No.19	Urban
	C.D.BLOCK	Farakka	
5	VILLAGE	Bewa (P)	Rural
6	VILLAGE	Ballalpur	Rural
7	VILLAGE	Kuli	Rural
8	VILLAGE	Mahadeb Nagar	Rural
9	WARD	Frka Barr. Tnshp (CT) - Wrd No.1	Urban
	C.D.BLOCK	Samserganj	Total
10	VILLAGE	Bhasaipaikar	Rural
11	VILLAGE	Balbalpara	Rural
12	VILLAGE	Jafrabad	Rural
13	WARD	Dhusaripara (CT) - Ward No.1	Urban
14	WARD	Chachanda (CT) - Ward No.1	Urban
	C.D.BLOCK	Suti - I	Total
15	VILLAGE	Panchigachhi	Rural
16	VILLAGE	Ramakantapur	Rural
17	VILLAGE	Ahiron	Rural
	C.D.BLOCK	Suti - II	Total
18	VILLAGE	Bahagalpur	Rural
19	VILLAGE	Amuha	Rural
20	VILLAGE	Ichhlampur	Rural
21	TOWN	Aurangabad (CT)	Urban
22	WARD	Paschim Punropara (CT) - Ward No.1	Urban
	C.D.BLOCK	Raghunathganj - I	Total
23	VILLAGE	Dafarpur	Rural
24	VILLAGE	Kankaria	Rural
25	VILLAGE	Brindabanpur	Rural
26	WARD	Srikantabati (CT) - Ward No.1	Urban
	C.D.BLOCK	Raghunathganj - II	Total
27	VILLAGE	Pananagar (P)	Rural
28	VILLAGE	Bara Jumla	Rural
29	VILLAGE	Kul Gachhi	Rural
30	VILLAGE	Fraser Nagar	Rural

		ZONE L	
	BLOCK	Murshidabad Jiaganj	
1	VILLAGE	Budhra	Rural
2	VILLAGE	Bali	Rural
3	VILLAGE	Sashidharpur	Rural
4	VILLAGE	Banamalipur	Rural
5	VILLAGE	Beliapukur	Rural
6	VILLAGE	Satlakshmi	Rural
	TOWN	Murshidabad (M)	Urban
7	WARD	Murshidabad (M) - Ward No.15	Urban
	C.D.BLOCK	Berhampore	Total
8	VILLAGE	Bahara	Rural
9	VILLAGE	Andar Manik	Rural
10	VILLAGE	Kodla	Rural
11	VILLAGE	Fate Singdiar	Rural
12	VILLAGE	Kharsadanga	Rural
13	VILLAGE	Chaltia	Rural
14	VILLAGE	Sibpur	Rural
15	VILLAGE	Usta	Rural
16	VILLAGE	Selamatpur	Rural
17	VILLAGE	Baradaha	Rural
18	WARD	Gora Bazar (CT) - Ward No.1	Urban
	C.D.BLOCK	**Beldanga - I**	**Total**
19	VILLAGE	Gopinathpur	Rural
20	VILLAGE	Dalua	Rural
21	VILLAGE	Jhunka	Rural
22	VILLAGE	Bishannagar	Rural
23	VILLAGE	Begunbari	Rural
24	VILLAGE	Mirzapur	Rural
25	VILLAGE	Kapasdanga	Rural
	C.D.BLOCK	**Beldanga - II**	**Total**
26	VILLAGE	Saktipur	Rural
27	VILLAGE	Mahammadpur	Rural
28	VILLAGE	Rampara Faridpur	Rural
29	VILLAGE	Bikal Nagar	Rural
30	VILLAGE	Kashipur	Rural

ANNEXURE II

HEALTH INFRASTRUCTURE IN MURSHIDABAD DISTRICT

GRADE OF HOSPITAL ↓	SUBDIVISION →				
	SADAR	LALBAGH	DOMKAL	JANGIPUR	KANDI
District Hospital	1	0	0	0	0
State General (SG) Hospital	1	0	0	0	0
Sub-divisional (SD) Hospital	0	1	1 (Under Construction)	1	1
Rural Hospital	2	2	2	1	2
Block Primary Health Centre (BPHC)	4	3	2	6	3
Primary Health Centre (PHC)	14	14	9	15	18
Sub-Centre	167	122	110	175	140
State Special Hospital	1 (Mental)	0	0	0	0

ANNEXURE III

Achievement of Universal Immunisation Programme, Murshidabad, 2001-02 & 2002-03

TT(PW)		DPT		POLIO		BCG		MEASLES	
2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03	2001-02	2002-03
MURSHIDABAD									
119034	114799	120656	118621	117188	116803	138219	144289	129480	115769
WEST BENGAL									
1668396	1557094	1687953	1572646	1697922	1583259	1845802	1781656	1633552	1545399

INTENSIFIED PULSE POLIO IMMUNISATION PROGRAMME

ROUND APRIL 2003							
Area	Estimated (0-5) children population	Number of Booths established	Total No. of houses visited by the team	No. of Children Immunised			% Immunised
				Rural	Urban	Total	
Murshidabad	847849	3340	1003772	752776	50876	803652	94.79
West Bengal	8427652	33654	12145296	6464351	1592680	8057031	95.60
ROUND JUNE 2003							
Murshidabad	847849	3340	1050095	763803	48768	812571	95.84
West Bengal	8427652	33647	12588962	6520111	1579148	8099259	96.10
ROUND SEPTEMBER 2003							
Murshidabad	847849	3340	984961	749903	45203	795106	93.78
West Bengal	9444317	37806	14330016	7296288	1686921	8983209	95.12

Source: Health on the March, West Bengal, 2002-03

ANNEXURE IV

FIELD VISIT REPORT ON THE PREPARATIONS FOR NATIONAL IMMUNISATION DAY (NID) and IMMUNISATION DRIVE ON FEEBRUARY 22, 2004 IN SELECTED VILLAGES OF MURSHIDABAD

21/02/2004

Selected areas were visited to observe the preparations undertaken for the Pulse Polio Immunisation Drive to be held on 22/02/2004. The places visited were on advice of the CMOH, Murshidabad.

Th efirst place visited was Maheshail BPHC that falls in Suti II Block. Discussions were held with Dr. Balaram Sarkar, BMOH, Maheshail BPHC. It was understood from discussions with him that the coverage of Pulse Polio is not satisfactory. The reasons for less than satisfactory coverage are:

- Misconceptions among people
- Physical inaccessibility of some areas within the Block

Other places visited were Kanchantala Gram Panchayat Office and Udyan Club, which is adjacent to the Kanchantala Gram Panchayat.

The Panchayat falls within Shamsherganj Block. The Block is one of the problems areas within the district where Polio Boycott and non-compliance.

It was found out that the residents of the area have high level of dissatisfaction against the Govt. Health Infrastructure. The nearest BPHC is at Anupnagar. The approach road to the Health centre is inaccessible and according to the inhabitants of the area, the behaviour of the Medical and non-medical personnel of the area is rude.

However, the Govt. Health worker, named Jahanara, is committed in her job. She visits the villages regularly, conducts awareness programme, organises Immunisation Camp.

Quality of Drinking water is very poor with high Iron content.

There is no Awareness on presence of Arsenic Contamination in the area.

The Sanitation facilities in the villages are almost non-existent.

Most of the people in the area are engaged in the *Biri* manufacturing.

22/02/2004

Selected Pulse Polio Booth was visited on NID to get first hand experience of the polio immunisation . The booths visited were.

1. Gurudaspur Primary school
2. Beuchitala High school
3. Chuadanga .
4. Kalopur primary school.
5. Kalopur Mathapara.

6. Nawdapara
7. Abhiramhpur
8. Gopinathpur Health Sub-centre.
9. Khuniapukur
10. Ghordaur (100%Tribal village)
11. Kulberia Adibasi Para (100% Tibal Village)

General findings

Drinking water

Almost all people visited use the Tube-well as the sole source of Drinking water The depth of the tube-well range from 80-100ft. The area is generally prone to Arsenic Poisoning, although people have limited awareness on the issue. Tests have carried in some areas but people are unaware of the Test Report. In some areas, notably Gurudaspur, specially designed Arsenic preventive Tube-well have been installed but most of the Tubewells are non-functioning. Iron content in the water seems to be high.

In the tribal village of Kulberia, one Tubewell cater to 185 families in the entire village.

In some villages, Tube-wells have been installed by Zilla Parishad.Although, there are tap system in all the tube-wells, no tap works and that leads to considerable wasteage of water.

Sanitation

Proper sanitation facilities are almost non-existent in the entire area. There is a scheme of Installation of Latrine (non-sanitary type without water seal) at a cost of Rs. 385.00 by the local Panchayat. There is also a system of a subsidy of Rs.200/- for Below Poverty Line (BPL)-notified people. However, there has been limited response to this scheme for a number of reasons:

- People are unwilling to pay the amount and expect full subsidy .
- Even when people pay in some instances the panchayat is unable to supply the equipment . Which dampen the enthusiasm to install the system people have little or no awareness on necessity of a proper sanitation facility

NID Pulse Polio programme

Personnel

The Pulse Polio (PP) Programme is predominantly manned by ICDS workers and volunteers from the Community (also termed as Social Workers) and Community Health Guides (CHG). In some cases Govt Health Workers are also involved. .In most of the villages, prior publicity is carried out by Miking and Door-to-door publicity.

The time-schedule that is mentioned in all publicity programmes is not adhered to I the remote areas. The reasons are:

- Delay in supplying the vaccines in the venue

- Delay in arrival of the personnel
- Coverage of more than one booth by same set of personnel

Response to the Immunisation Drive varies from place to place.

- In some cases, the enthusiasm is perceptible. On hearing that Booth has started functioning, mothers accompany their children to the booth for the 'two drops' of vaccine.
- In some instances, although there is no adverse opinion about the Immunisation drive itself, people choose to stay at home because of the reason that even after the activities on the National Immunisation Day (NID), follow-up operations take place for next two consecutive days where the Health workers and Volunteers visit the household and carry on the Immunisation Drive. People take this as an excuse for not visiting the booths on the NID. In some centres, e.g. Gopinathpur Sub-centre, attendance on the particular NID was 70-75% as compared to 90-95% on the previous NIDs.
- In some areas, inadequacy in other areas affect the PP Drive. In Kalopur for instance, people expressed the feeling that it is only the Polio vaccine that they get for free. However, the facilities that they receive for other ailments and for regular vaccination are grossly inadequate. They feel that these should attract urgent attention.
- People in some areas, e.g. Khuniapukur have expressed adverse opinion about the Pulse Polio Programme. There is a feeling that administration of the PP vaccine curbs the reproductive power and this programme is nothing but a well-planned government ploy to restrict population growth.
- In all the villages visited, there have been instances of some families who have boycotted the PP Drive. However, the Health workers and the ICDS workers have claimed that they have been able to allay the fears and misconceptions of these people and ultimately they have participated in the Immunisation Drive.
- There are some areas, Ghordaur Tribal village for instance, where people are in complete dark about the PP Drive. There have been no publicity drive, nor there had been any visit from the health workers to inform about the PP Programme. The regular Immunisatio Drive is also non-existent in these areas. In the neighbouring tribal village of Kulberia, which is relatively more developed, the regular Immunisation Programme is almost non-existent, although there have been participation in the PP Programme.
- On the technical side, the maintenance of the cold-chain was found to be improper. The vaccine vial, once taken out of the Pack is not put into the cold pack. The medicine is administered from the vial until it is exhausted.

Finding on the Health Infrastructure

The health infrastructure is generally poor.

The nearest accessible centre is Health sub-centre. These centres are usually open thrice a week. These are manned by Health workers. The main activities of these centres are

- Birth Registration
- Regular Immunisation
- Distribution of some specific medicines.

The Health workers are supposed to visit the villages once a week. In many cases, Health workers do not perform this duty. The Immunisation status is better in places where the Health workers take a pro-active role.

The recording system for Immunisation, Awareness generation and monitoring is more organised in places where ICDS programmes are operational.

BPHCs, in most of the cases are physically inaccessible. The condition of the roads adds to the woes of the people.

BPHCs do not have the wherewithal to take care of urgent or critical are diseases.

The patients are referred to the State General or Sub-divisional hospitals.

Instances of Discrimination

Instances of Discrimination have been noticed in two places

- This is a case of indirect discrimination that had affected the PP drive. In Kalopara, 14 pregnant women were shortlisted for a government grant of Rs. 500/-. However, only two women were given this grant. This had evoked a sharp response from the women and their families who were omitted. These people showed their dissatisfaction on the personnel who were involved in the PP Drive.
- 35 families from the tribal village of Ghordaur were completely omitted from the PP Drive, although all facilities were given to the neighbouring tribal village.