

Global Polio Eradication Initiative
Strategic Plan 2009-2013
Framework document
December 2008

Introduction

The current Global Polio Eradication Initiative (GPEI) Strategic Plan outlines the strategy, major activities and milestones through 2008.

The new Strategic Plan for the period 2009-2013 incorporates the new tools and tailored tactics recently developed to interrupt wild poliovirus transmission in the remaining infected areas and prepares for the post-wild poliovirus challenges, including the post-OPV era. Outcomes of an independent review of the 24-month *intensified eradication effort* will inform the finalization of the Strategic Plan 2009-2013, especially overcoming sub-optimal OPV delivery (see Objective 1).

Framework for the Global Polio Eradication Initiative Strategic Plan 2009-2013

Goal of the Global Polio Eradication Initiative: To ensure that no child will ever again be paralysed by either a wild or vaccine-derived poliovirus.

Background:

Since 1988, the GPEI has reduced the global incidence of polio by more than 99%. In 2004-2005, the GPEI entered a period of renewed innovation in response to the specific challenges in each of the last four endemic countries and the problem of international spread of wild polioviruses from India and Nigeria.

In February 2007, an *intensified eradication effort* was launched by the GPEI stakeholders to collectively address the remaining technical, financial and operational barriers to eradication, following an urgent consultation convened by WHO Director-General Dr Margaret Chan. The intensified effort has been characterized by the wide-scale application and use of new tools and tactics in each infected country, and renewed commitment by their leaders and donors.

Recognizing the short and long-term risks to polio eradication, the World Health Assembly (WHA) adopted Resolution WHA61.1 in May 2008, urging all remaining polio-affected Member States to ensure that every child is vaccinated during every supplementary immunization activity (SIA), and requesting the Director-General to set, if and when appropriate, a date for the eventual cessation of OPV use in routine immunization programmes.

At end-2008, two independent advisory bodies to WHO concluded that the intensified eradication effort had demonstrated the remaining technical, financial and - in key areas of each endemic country - operational challenges can be overcome. Consequently a new Strategic Plan 2009-2013 was endorsed, combining proven eradication strategies with recently-developed tools and tactics and incorporating bold new initiatives to scale-up the approaches needed to address the remaining operational challenges and to further optimise the efficacy of polio vaccination. Country-specific reviews of the management and implementation of polio campaigns in the first quarter of 2009 will guide further refinements to eradication operations in each infected area.

Objective 1: Interrupt wild poliovirus transmission:

Situation analysis:

- Indigenous poliovirus has been eradicated from all but 4 countries worldwide as a result of the GPEI.
- In these four countries (India, Nigeria, Pakistan, Afghanistan), indigenous type 1 and 3 wild poliovirus transmission is continuing despite >10 years of eradication efforts.
- In 2007, the technical feasibility of eradication was affirmed, when indigenous type 1 polio was finally interrupted in western Uttar Pradesh, India. The fragility of this progress was underscored, however, when a new type 1 polio outbreak occurred there in Q3 2008, due to an importation from neighbouring Bihar, India.
- New tools (eg monovalent vaccines, new diagnostics procedures) and tailored tactics for each country have been developed and fully incorporated into the intensified eradication effort. Additional tools (eg bivalent OPV) are being developed.
- Of >100 wild poliovirus importation events during the period of the last Strategic Plan (2004-2008) resulting in outbreaks in 26 countries, all but 11 have been stopped. However, transmission of imported polioviruses has persisted for >12 months in Angola, Chad, DR Congo and parts of the Horn of Africa, and sporadic importations continue to occur in polio-free areas (eg west Africa, Nepal).
- Type 2 wild poliovirus has been eradicated globally since 1999; however, a type 2 circulating vaccine-derived poliovirus (cVDPV) has persisted in northern Nigeria since 2006.

Key challenges:

- *Sub-optimal OPV delivery:*
 - in fully-accessible areas (eg north Nigeria and in a few areas of Pakistan);
 - in security-compromised areas (eg Pakistan/Afghanistan border).
- *Sub-optimal OPV efficacy:*
 - in northern India (ie western Uttar Pradesh).
- *Prolonged outbreaks (persistent transmission for >12 months) due to sub-optimal outbreak response (ie Angola, Chad, DR Congo and parts of the Horn of Africa).*
- *Continued international spread of poliovirus from areas of indigenous (eg Nigeria, India) and imported poliovirus transmission (eg Angola, Chad, parts of the Horn of Africa).*
- *Maintenance of high population immunity against polio in areas at high risk for poliovirus importations and spread.*

Strategic approach/major activities:

- *In all polio-infected areas:*
 - Implement an aggressive SIA strategy with an appropriate mix of mOPVs to interrupt wild poliovirus transmission, and at least two tOPV rounds per year to maintain population immunity;
 - prioritize eradication of type 1 poliovirus, given its higher paralytic attack rate and propensity for geographic spread;
 - secure Head of State engagement to optimize OPV campaign quality, monitor activities, until at least 6 months have passed with no reported cases in the presence of sensitive surveillance (see Objective 2);
 - rapidly assess the efficacy of bivalent OPV (bOPV), relative to mOPV1 and mOPV3, and optimize its role (including fast-tracking regulatory processes to ensure rapid availability of product);
 - assess community perceptions every 6 months and tailor social mobilization strategies accordingly;
 - establish and implement advocacy plans at all levels;
 - engage commercial marketing firms on a trial basis to develop and or implement community mobilization strategies.

- *In areas of sub-optimal OPV delivery:*

In accessible areas:

- build on new national commitments to secure systematic engagement of provincial- and district-level administrative leaders;
- conduct independent, international reviews of the SIA management of operations, using established best practices to identify and rectify root causes for ongoing coverage gaps (eg in microplanning, vaccinator selection/training, supervision, community engagement);
- generate data to allow monitoring of provincial- and district-level leader engagement in polio eradication, building on experience from other countries (eg India monitoring of district-level engagement);
- systematically use finger-marking to independently monitor SIA performance, and re-cover all areas with <90% coverage;
- in long-standing areas of limited OPV coverage (eg Kano, Nigeria) which have international implications, conduct - through intense international technical support and together with government officials - special operations to ascertain required activities to achieve high coverage;
- in areas of discordant programmatic and epidemiological data, rapidly implement seroprevalence surveys to verify programme performance and vaccine efficacy (eg Pakistan).

In security-compromised areas:

- implement quarterly programme reviews to quantify and prioritize problems and their implications for global eradication, based on the evolving security situation, population size and movements, and number of missed children during each SIA;
- implement area-specific tactics, based on experience in other conflict-affected areas and the quarterly assessment;
- enhance negotiations with community leaders, irrespective of affiliation, to assure access to populations;
- increase advocacy with all parties to ensure safety of vaccination teams;
- fully implement the Short-Interval Additional Dose (SIAD) strategy during windows of opportunity (eg delivering an extra OPV dose in between large-scale national and subnational campaigns);
- enhance collaboration with local NGOs and community groups.

○ *In areas of sub-optimal OPV efficacy:*

- Continue aggressive use of mOPVs in SIAs, prioritizing type 1, then type 3, eradication;
- rapidly assess the utility of supplementing mOPV campaigns with 1 or 2 doses of inactivated polio vaccine (IPV), 4-6 months apart;
- evaluate whether the potential advantages of bOPV may also apply in areas of severely-compromised OPV efficacy;
- finalize investigation of higher-efficacy mOPV1 in areas of severely-compromised OPV efficacy (eg western Uttar Pradesh, India).

○ *In areas of prolonged outbreaks:*

- Fully implement international outbreak response guidelines until transmission has been confirmed interrupted;
- secure political commitment and adequate social mobilization/community awareness to outbreak;
- conduct six-monthly international reviews of outbreak response quality;
- increase technical support, particularly in difficult areas with weak national capacity.

○ *To address international spread of poliovirus:*

- Maintain or increase routine immunization coverage in polio-free areas, with priority to high-risk and border areas with <80% coverage;

- conduct "preventive SIAs" in highest-risk zones (eg areas bordering endemic areas and/or with very low routine OPV coverage);
- ensure immediate notification, through Disease Outbreak News and in the context of the International Health Regulations (2005), of all newly-infected areas judged to be a high risk for continued transmission and/or further international spread;
- provide a monthly international update of all polio-infected areas through the GPEI website and relevant WHO publications;
- update WHO's *International Travel and Health*, with specific ACPE vaccination recommendations for children and adults traveling to and from polio-infected areas;
- review, in 2010, the potential enhancement of requirements for immunization of travellers to and from polio-infected areas.

Expected results/milestones:

<i>5-year target</i>	<i>End-2009</i>	<i>End-2010</i>	<i>End-2011</i>	<i>End-2012</i>	<i>End-2013</i>
By end-2013, at least 24 months without wild poliovirus transmission globally as a result of routine and supplementary immunization activities, guided by high quality surveillance	Interrupt type 1 wild poliovirus transmission in India Stop all prolonged outbreaks in Africa Update WHO's <i>International Travel and Health</i>	Interrupt all poliovirus transmission in Asia (India, Pakistan, Afghanistan) Interrupt type 1 wild poliovirus transmission in Nigeria and all wild poliovirus transmission in all other African countries WHA review of potential vaccination requirements to prevent international spread of polio	Interrupt type 3 wild poliovirus transmission in Nigeria	Stop new cVDPVs within six months of detection	Stop new cVDPVs within six months of detection

Objective 2: Ensure sustainable surveillance for polioviruses:

Situation analysis:

- *Surveillance for acute flaccid paralysis (AFP) cases:*
 - In endemic regions (AFR, EMR & SEAR):
 - 59 of 66 countries (with populations >1 million) are achieving certification standard surveillance (non-polio AFP rates >1 and adequate stool collection rate of 80%); of these, 43 are meeting non-polio AFP rates >2.
 - In polio-free regions (AMR, EUR & WPR):
 - 16 of 80 countries conducting AFP surveillance (with populations >1 million) are achieving certification standard surveillance (non-polio AFP rates >1 and adequate stool collection rates of 80%).
- *Global Polio Laboratory Network (GPLN):*
 - 141 of 145 laboratories are fully accredited by WHO (100% of specimens are processed in a fully-accredited laboratory through division of specimens).
 - Since 2006, new procedures have reduced the time needed to confirm poliovirus by 50% (from 42 days to 21 days).
 - In 2008, new Real-time PCR assays to improve screening for vaccine-derived polioviruses (VDPVs) were evaluated.
- *Environmental surveillance:*
 - Systematic environmental sampling (in Egypt and Mumbai, India) is providing important supplementary surveillance data.
 - Ad-hoc environmental surveillance elsewhere (especially in polio-free Regions as part of broader enterovirus surveillance systems) continues to provide insights into the international spread of poliovirus.

Key challenges:

- Persistence of subnational surveillance gaps, in particular in central Africa and the Horn of Africa, as evidenced by "long-chain" viruses detected in Chad, Ethiopia and Sudan.
- Revitalizing AFP surveillance to achieve certification-standard in polio-free areas, especially in the three Regions certified as polio-free.
- Enhancing the speed of detection of wild polioviruses and VDPVs globally, to meet the new GPEI standards.
- Coordinating a system for environmental surveillance efforts globally.

Strategic approach/major activities:

- Conduct quarterly desk reviews at regional and global levels, to closely monitor national and subnational surveillance performance and identify gaps;
- rapidly implement (within 3 months) field-level surveillance reviews in areas identified as having major performance concerns in a desk review;
- enhance GPEI technical assistance to address subnational surveillance gaps in areas without government capacity;
- re-establish the need for certification-standard surveillance for polioviruses as a top public health priority in all 3 Regions already certified as polio-free;
- implement the new wild poliovirus and VDPV diagnostic procedures into all laboratories of the GPLN;
- conduct stock-taking of environmental surveillance activities, as basis for developing a global surveillance strategy.

Expected results/milestones:

<i>5-year target</i>	<i>End-2009</i>	<i>End-2010</i>	<i>End-2011</i>	<i>End-2012</i>	<i>End-2013</i>
Through end-2013, achieve certification-standard surveillance, down to the subnational level	Achieve enhanced surveillance standards (non-polio AFP rate >2) at the subnational level in all high-risk, re-infected and endemic areas	Introduce new laboratory procedures globally	Initiate global environmental surveillance strategy	Achieve certification-standard surveillance globally, at national level	Achieve certification-standard surveillance, down to subnational level

Objective 3: Achieve certification and containment of wild polioviruses:

Situation analysis:

- Three Regions are certified polio-free (AMR, EUR, WPR).
- Regional Certification Commissions (RCCs) are functioning in all three remaining endemic Regions, with National Certification Committees (NCCs) in all Member States in the endemic Regions.
- In the three Regions already certified as polio-free, 102 of 115 Member States have completed the survey and inventory activities of Phase 1 containment for wild polioviruses (as outlined in GAPII).
- A framework for long-term containment of all polioviruses (3rd edition of the Global Action Plan to minimize post eradication poliovirus facility-associated risks - GAPIII) has been established and, following discussion at the WHA, is now being revised and finalized for public comment.

Key challenges:

- Finalizing the process for certification of conflict-affected areas and areas without national authority oversight, recognizing that this must be tailored to each area.
- Establishing consensus on additional documentation required from polio-free and certified areas prior to global certification.
- Establishing international consensus on long-term containment requirements for all polioviruses.

Strategic approach/major activities:

- Establish an area-specific process for certifying eradication in each conflict-affected area for review and comment by the relevant RCC;
- finalize and implement the long-term containment activities outlined in GAPIII;
- negotiate and pilot-test additional documentation requirements for polio-free areas prior to global certification, through RCCs of AMR, EUR and WPR;
- maintain and technically support the GCC and, in all Regions, the RCC and NCCs.

Expected results/milestones:

<i>5-year target</i>	<i>End-2009</i>	<i>End-2010</i>	<i>End-2011</i>	<i>End-2012</i>	<i>End-2013</i>
By end-2013, all countries submit documentation demonstrating absence of wild polioviruses (WPVs) for at least 24 months, and the full containment of WPV stocks	All certified Regions complete Phase I containment activities for WPV	Agreed area-specific process to certify conflict-affected areas	GCC review of supplemental documentation required for global certification	Initiate EMR & SEAR Cert Reviews. 1° 2° & 3° safeguards for WPVs	Initiate final Regional Certification review in AFR

Objective 4: Prepare for VAPP and VDPV elimination and the post-OPV era:

Situation analysis:

- The VAPP burden is 250-500 cases per year, based on current immunization policies.
- Since 2000, at least ten cVDPV outbreaks have occurred in ten countries, resulting in 227 cases, 138 of which are associated with one ongoing outbreak (type 2 cVDPV, northern Nigeria).
- Of 33 recorded individuals with immunodeficiency-associated excretion of vaccine-derived polioviruses (iVDPVs), 5 have excreted for >5 years (ie chronic excretors) and currently at most 2 are known to be still excreting; in no instance has this been associated with secondary cases.
- Given that VAPP and cVDPVs are inconsistent with global eradication of paralytic poliomyelitis, in May 2008 the World Health Assembly adopted Resolution WHA61.1, requesting the Director-General to set, if and when appropriate, a date for the eventual cessation of the use of OPV in routine immunization programmes.

Key challenges:

- Fully characterising VDPV risks in low- and middle-income settings, particularly the prevalence of iVDPVs and frequency of cVDPVs (especially type 2).
- Assessing the efficacy of cVDPV management and outbreak control strategies, including mass immunization with mOPV, and potentially IPV.
- Coordinating OPV cessation internationally as soon as possible after certification of wild poliovirus eradication.
- Securing international consensus on mOPV stockpile use after OPV cessation.
- Developing affordable options for IPV use in low- and middle-income countries which choose to continue immunization against polio after OPV cessation.
- Establishing a strategy and tools to manage iVDPV risks, including – if feasible – antiviral products.
- Establishing a process for verification of VAPP/VDPV elimination.
- Understanding the potential post-eradication risks due to genetically-synthesized polioviruses.

Strategic approach/major activities:

- Fully expand new laboratory diagnostic procedures to enhance sensitivity to detect VDPVs (ie iVDPVs, cVDPVs) and to quantify the risks they pose;
- implement studies to better quantify and characterize iVDPV risks/implications in low- and low/middle-income countries;

- accelerate 3-pronged research agenda to establish affordable IPV options for low-income settings: dose reduction, antigen reduction (eg adjuvants, fractional dosing) and low-cost production sites;
- integrate development work on affordable IPV options with the broader EPI research agenda on needle-free devices;
- accelerate development of new IPV product based on Sabin and/or alternative seed strains, to facilitate safe production in areas with high poliovirus reproduction rates (eg tropical settings), after eradication of wild poliovirus;
- develop, test and license, if possible, antiviral drugs to treat chronic iVDPVs, and, potentially, as an adjuvant to the management of poliovirus exposure and transmission in the post-eradication era;
- assess the feasibility of using existing mechanisms, established for the management of public health events of international importance, to eventually verify VAPP/VDPV elimination;
- establish WHA Resolutions on the eventual coordination of OPV cessation, long-term containment of all polioviruses (GAPIII) and use of mOPV in response to cVDPVs following OPV cessation (including use of international stockpile of mOPV);
- update risk assessment on potential for intentional use of polioviruses in the post-eradication era.

Expected results:

<i>5-year target</i>	<i>End-2009</i>	<i>End-2010</i>	<i>End-2011</i>	<i>End-2012</i>	<i>End-2013</i>
By end-2013, initiate process for the cessation of all OPV use in routine immunization programmes	Initiate clinical development phase of Sabin-IPV project and evaluation of alternative seed strains	Establish international concurrence on long-term biocontainment of all polioviruses (GAPIII)	Establish SAGE recommendations on IPV use in routine immunization programmes following OPV cessation	Finalize contracts and standard operating procedures for post-eradication mOPV stockpile	Finalize international consensus on process and dates for OPV cessation in routine immunization

Objective 5: Plan for Re-structuring of the Global Polio Eradication Initiative for the VAPP/VDPV Elimination Phase

Situation analysis:

- The GPEI funds 3,387 staff in 70 countries (with associated transportation, communications and data management capacity).
- GPEI staff provide substantial support to other public health programmes (historic surveys show that 90% of polio-funded staff support other public health and humanitarian activities).
- The long-term polio functions (ie those which will need to continue indefinitely) are now well-defined and consist of containment, surveillance and outbreak response capacity.
- Collaboration has already commenced with oversight bodies and institutions which will manage the long-term functions (eg Strategic Advisory Group of Experts on Immunization – SAGE, and WHO's Global Alert and Response network).

Key challenges:

- Fully integrating the long-term functions of the GPEI into existing public health mechanisms, to ensure continuation of routine polio immunization policy, containment, surveillance and outbreak response functions following OPV cessation.
- Downscaling the polio infrastructure to the capacity required for the VAPP/VDPV elimination phase, without compromising other public health programmes.
- Establishing a timeline for the integration and downscaling processes, given the uncertainty of milestones for interrupting wild poliovirus transmission in the remaining infected areas.

Strategic approach/major activities:

- Establish an updated plan detailing the polio infrastructure requirements for monitoring and managing the risks associated with VAPP/VDPV elimination (especially the resources necessary to maintain AFP surveillance for five years following OPV cessation);
- undertake a risk analysis (including staff survey) to determine how downscaling will affect other public health programmes;
- develop a risk management plan for GPEI downscaling and transitioning – where appropriate – to other programmes, in consultation with country-level polio programmes and appropriate stakeholders in other public health programmes, especially immunization;
- establish a plan and timeframe for transitioning all routine immunization functions currently performed by polio-funded staff (eg monitoring, policy/training, VPD surveillance) to other internationally- or nationally-funded EPI/immunization staff;

- establish a joint programme of work for long-term poliovirus surveillance and outbreak response with WHO's Global Alert and Response network;
- identify budget and funding channels for key VAPP/VDPV elimination phase activities, in particular for poliovirus surveillance, cVDPV response and routine IPV use.

Expected results:

<i>5-year target</i>	<i>End-2009</i>	<i>End-2010</i>	<i>End-2011</i>	<i>End-2012</i>	<i>End-2013</i>
By end-2013, GPEI infrastructure optimized for the VAPP/VDPV Elimination Phase, and management of long-term risks of polioviruses integrated into appropriate institutional arrangements	Complete staff survey element of risk assessment	Complete full risk analysis and management plan, in consultation with stakeholders	Joint plan and timeline established for transferring long-term polio functions to appropriate institutions	Budget and financing mapped-out for the VAPP/VDPV Elimination Phase	HR plan fully implemented for the VAPP/VDPV Elimination Phase