EXECUTIVE SUMMARY

Since its launch at the World Health Assembly in 1988, the Global Polio Eradication Initiative (GPEI) has helped reduce the global incidence of polio by more than 99 per cent and the number of countries with endemic polio from 125 to three. More than 10 million people are walking today who would otherwise have been paralyzed.

At the beginning of 2013, polio – a highly infectious viral disease which causes irreversible paralysis – was a distant memory in most of the world. The year 2012 ended with the fewest polio cases in the fewest countries ever, making now the best moment the world has ever had to put an end to this terrible, yet preventable, disease.

On 26 May 2012, the World Health Assembly (WHA), declared ending polio a "programmatic emergency for global public health." Noting India's success using available tools and technology, the threat to the global community of on-going poliovirus transmission in the last three endemic countries, and the growing knowledge about and risk of circulating vaccine-derived poliovirus (VDPV), the WHA called on the WHO Director-General to develop and finalize a comprehensive polio endgame strategy.

The *Polio Eradication and Endgame Strategic Plan 2013-2018* (the Plan) was developed to capitalize on this opportunity. It accounts for the parallel pursuit of wild poliovirus eradication at the same time as VDPV, while planning for the backbone of the polio network to be used for delivery of other health services to the world's most vulnerable children.

ADVANCES AGAINST POLIO IN 2012

The year 2012 was largely a one of tremendous advances for the program, setting up the opportunity to end polio for good. Among the most significant advances, in February 2012, India celebrated one year without wild poliovirus (WPV) transmission. India was arguably the most technically challenging place to eliminate polio and a large source of outbreaks. India's success was due to the ability of the program to repeatedly reach all children, use of bivalent oral polio vaccine (bOPV), sustained political commitment and accountability, societal support and the availability of resources needed to finish the job. It remains polio-free today.

By the end of 2012, the total number of polio cases worldwide plunged to 223. Three of the four countries that had re-established WPV transmission (Angola, the Democratic Republic of the Congo, Sudan) did not have a single case in 2012. The fourth, Chad, has not reported a case since June 2012.

To tackle VDPV, new knowledge and tools have been developed over the past few years, including bOPV, strengthened surveillance to detect VDPVs, and the promise of new, more affordable IPV. In an important step, the Strategic Advisory Group of Experts (SAGE), the world's chief policy guidance body

for immunization has recommended the global withdrawal of the type 2 component of OPV as soon as possible from routine immunization programmes[1].

In September 2012, leaders at all levels of government in the endemic countries, donor countries and the UN Secretary General declared ending polio a top priority, signalling the political commitment needed to effectively implement national Emergency Action Plans and capitalize on the progress to date.

In addition to declining cases in Afghanistan and Pakistan, evidence demonstrates that these countries and Nigeria showed marked improvement in increasing vaccination coverage in 2012, putting them on a trajectory to interrupt transmission by the end of 2014. This will hold true if trends continue and current security challenges do not cause a prolonged or increased impact on operations.
In Pakistan, the proportion of highest-risk districts achieving the estimated target threshold of 95 per cent increased from 59 per cent in January 2012 to a peak of 74 per cent in October 2012.

In Nigeria, though overall cases increased in 2012, the quality of campaigns has improved dramatically over the past year through revised micro-plans, better team selection, improved monitoring and strong oversight at the national and state level. The proportion of very high-risk local government areas in which vaccine coverage reached the target threshold increased from 10 per cent in February 2012 to 70 per cent in February 2013.

In Afghanistan, permanent polio teams operate in the key high-risk areas of Helmand, Kandahar, and Farah. Intense outreach efforts continue to community leaders to ensure the polio programme can safely access all children, including those that had not been reached for more than three years. By end 2012, approximately 15,000 were unreachable, down from 80,000 in 2011.

Tragically, at the end of 2012 and beginning of 2013, the targeting killings of health workers in Pakistan and Nigeria forced the programme to make adjustments for their safety in specific insecure areas.

PLANNING FOR THE END OF POLIO

The Plan was created by GPEI in extensive consultations with national health authorities, global health initiatives, scientific experts, donors and other stakeholders**.** Its goal is the complete eradication and containment of all wild, vaccine-related and Sabin polioviruses, such that no child ever again suffers paralytic poliomyelitis.

Discussions to create the Plan started with a frank assessment and acknowledgement of the failures, incorrect assumptions, and lessons learned from past eradication plans and reasons for missed deadlines. In the process, the following became evident:

[1] Informed by the eradication of wild poliovirus type 2 in 1999 and the fact that over 90% of circulating VDPVs are type 2.

1. *One size does not fit all*: While core principles of eradication are global and the vast majority of all polio-endemic countries stopped transmission within two-three years, the tactics needed in the remaining countries need to be carefully tailored to adapt to a range of factors.

2. *Technological innovation cannot overcome gaps in political support, management and community engagement*: It is necessary to create and foster strong political support, as programme management and accountability. In addition, social mobilization must be focused on a micro-level to increase community trust and reach chronically missed children.

3. *A combination of innovations tailored to country context can deliver success in even the most challenging conditions*: India's success highlighted operational best practices to ensure highest quality polio vaccination campaigns. These included: careful micro-planning; strengthened monitoring; a massive and well-managed social mobilization effort; strict accountability measures; community and local leadership engagement; and, a mass increase of human resources at district and sub-district levels.

On January 25, 2013, the WHO Executive Board reviewed and strongly endorsed the Plan's goal, objectives and timelines. Major elements that distinguish this Plan from previous GPEI strategic plans:

- Strategic approaches to end all polio disease (wild and vaccine-related)
- An urgent emphasis on improving routine immunization systems in key geographies
- The introduction of new, affordable IPV options for managing long-term poliovirus risks and potentially accelerating wild poliovirus eradication
- Risk mitigation strategies to address new risks, particularly insecurity, in some endemic areas, and contingency plans should there be a delay in interrupting transmission in such reservoirs
- A concrete timeline to complete the programme

The Plan outlines the steps to harness the GPEI infrastructure to deliver other critical health and development resources and, ultimately, complete the GPEI programme.

Four Main Objectives of the Plan

1. Poliovirus Detection and Interruption. The first objective is to stop all wild poliovirus transmission by the end of 2014 and any new outbreaks of VDPV within six months of the first case. The primary geographic focus is in the three endemic countries and the countries at highest risk of importation in Africa and southern Asia. Activities will focus on enhancing global poliovirus surveillance, improving OPV campaign quality to reach children in the remaining endemic countries, and ensuring rapid outbreak response. This objective also addresses the risks that have become increasingly important in late 2012, particularly insecurity, as the programme is now reaching chronically underserved places and populations more systematically. This global objective complements the tailored emergency action plans being implemented in each endemic country.

2. Routine Immunization Strengthening and OPV Withdrawal. This objective will help hasten the interruption of wild poliovirus transmission, reduce the risk of wild and vaccine-derived poliovirus importation and spread, and help build a strong system for the delivery of other lifesaving vaccines.

To achieve this objective, the GPEI will commit at least 50 per cent of the time of its field personnel to strengthen routine immunization systems by end-2014 in 10 countries. These include the three polio endemic countries plus seven other countries at high risk of WPV outbreaks and recurrent VDPV emergence – Angola, Chad, the Democratic Republic of the Congo, Ethiopia, India, Somalia, and South Sudan. The goal is to contribute to at least a 10 per cent improvement in coverage rates in the worst-performing districts annually. GPEI staff responsibilities will be specifically directed towards strengthening local and national capacity on management of programmes, micro-planning, mobilization of communities and influencers and monitoring of programme performance. These efforts will be carried out in collaboration with national governments and immunization partners such as the GAVI Alliance.

This objective also affects all 144 countries which currently use OPV in their routine immunization programmes, since success depends on the eventual withdrawal of OPV, beginning with the withdrawal of the type 2 component of trivalent oral polio vaccine (tOPV). OPV withdrawal entails strengthening routine immunization systems, introducing at least one dose of affordable IPV into the routine immunization schedule globally and *then* replacing the trivalent OPV with bivalent OPV in all OPV-using countries.

3. Containment and Certification. All 194 Member States of the World Health Organization will be affected by work under this objective, which aims to certify the world polio-free and ensure that all poliovirus stocks are safely contained. This includes finalizing international consensus on long-term bio-containment requirements for polioviruses. Making sure that these standards are applied is a key element of certifying global eradication.

4. Legacy Planning. This objective will ensure that the investment in polio eradication provides public health dividends for years to come. At present, polio eradication staff comprise the single largest source of external technical assistance for immunization in low-income countries. Staff are responsible for reaching hundreds of millions of the world's most vulnerable children with the polio vaccine and other health interventions such as Vitamin A supplements. Careful planning is essential to ensure that lessons learned during polio eradication, as well as the assets and infrastructure built in support of the effort, are transitioned responsibly to benefit other development goals and global health priorities. This will require thorough consultation with a range of stakeholder groups.

Implementing the Plan

An important aspect of the Plan's success is putting the right checks and balances in place to ensure that milestones are met, and that the program is administered with the greatest efficiency and effectiveness possible to achieve results.

A Monitoring Framework will be used to assess progress against the four objectives and corresponding milestones laid out in the Strategic Plan. This framework outlines the high level areas of work required to achieve the four objectives of the Plan and the details of the activities to be implemented under each area of work, their milestones and how they will be measured. While interruption cannot be guaranteed by a particular date, these trends in progress and commitment toward ending polio suggest the potential to stop transmission of wild polio virus by 2014, and certification of the end of wild poliovirus transmission by 2018.

The World Health Assembly (WHA), comprised of all WHO Member States, provides the highest level of governance of the GPEI. The Regional Committees of WHO allow for more detailed discussion by Member States, and provide input to the WHO Executive Board (EB) and the WHA meeting.

National authorities in polio-affected countries have primary responsibility at all levels of the government for the achievement of the Plan's first three major objectives. National governments in the three WHO Regions certified as polio-free, and polio-free member states in the three remaining polio-endemic Regions, also play a critical role in maintaining high population immunity, including through strengthened routine immunization, and sensitive surveillance for AFP.

The Plan also identifies a set of independent advisory bodies and a wider group of stakeholders across the international health community that advise and monitor the plan's implementation. These groups inform the decision-making of the governing bodies and provide oversight of the management bodies.

Strategic Plan - Objectives	Advisory & Monitoring
Objective 1: Poliovirus Detection & Interruption	Independent Monitoring Board (IMB)
Objective 2: Routine Immunization Strengthening & OPV 2 withdrawal	Strategic Advisory group of Experts (SAGE)
Objective 3: Containment & Certification	Global Certification Commission (GCC)
Objective 4: Legacy Planning	WHO Regional Committees & World Health Assembly (WHA)

- **The Polio Oversight Board (POB)** provides oversight of the management and implementation of the GPEI. Heads of GPEI partner agencies meet quarterly to review GPEI operations and ensure high-level accountability across the GPEI partnership.
- **The Polio Partners Group (PPG)** informs the decisions of the POB, represents GPEI stakeholders and donors and ensures GPEI has the necessary political commitment and financial resources to reach the goal of polio eradication.

Overcoming Risks

Unexpected factors and external risks can delay or undermine the GPEI's ability to achieve the Plan's four major objectives.

Recognizing risks, identifying mitigation options and articulating contingency plans enhance the GPEI's ability to rapidly react to problems, adjust its strategies as needed and minimize setbacks. Six major forward-looking risks have been identified under input and implementation risks:

INPUT RISKS	IMPLEMENTATION RISKS
Insufficient funding	Inability to operate in areas of insecurity
Inability to recruit/ retain the right people	Decline in political and/or social will
Insufficient supply of appropriate vaccines	Lack of accountability for quality activities

Current insecurity in Pakistan and Nigeria have caused tragic losses and pose a new and real threat to the programme. However, GPEI has previously faced periods of instability in various countries, and has learned from these experiences. The leaders of Pakistan, Afghanistan, and Nigeria remain fully committed, at all levels, to stop transmission of polio in their country, with urgent efforts underway to address serious insecurity challenges.

Through end-2014, the GPEI will use an overarching framework for operating in insecure areas while tailoring that approach in each setting, continuing its efforts to institutionalize the programme and maintain its neutrality. The basic elements include:

1. *Operational adjustments*: reduce the programme's and vaccinators' exposure to potential threats (e.g. phased or low-profile campaigns).
2. *Programme safety and security*: enhance coordination between civilian and security services and integrate local security assessments into operational plans to improve the physical safety of vaccinators and facilities.
3. *Community demand*: improve local community demand to increase access to vaccination and basic health services through a combination of awareness-raising activities around the disease, its consequences and its prevention, and ideally by coupling OPV with the delivery of other services/interventions.
4. *Religious leaders advocacy*: markedly step up advocacy by Islamic leaders and institutions at the local, national and international levels to ensure all Muslims (i.e. including aggressors) are aware of their obligation to ensure the vaccination/protection of children against polio, the sanctity of health workers , and the neutrality of health services.
5. *Measures to prevent spread*: reduce the risk of spread from insecure areas (e.g. by intensive vaccination in surrounding areas and vaccination of travelers in/out of infected areas).

Financing the Plan

Efficient and effective implementation of the Plan requires as much funding at the outset of the plan as possible to allow for certainty and predictability of resources. Full funding of the plan is critical to:

- Help protect the gains GPEI has made to date
- Enable allocation of resources to ensure the greatest impact over the long term
- Allow GPEI to implement the major objectives of the plan concurrently, creating greater opportunity for success.

A thorough budget analysis was conducted by GPEI estimating a budget of US$5.5 billion to achieve the Plan's objectives through 2018.

The budget includes the cost of reaching and vaccinating more than 400 million children multiple times every year in at least 20 countries, monitoring and surveillance in more than 70 countries, and developing an infrastructure that allows for other health and development programs to flourish. The costs for the programme are directly related to the number and quality of vaccination campaigns. It requires more (and higher quality) campaigns to boost the immunity levels of children in the hardest-to-reach areas of Nigeria, Pakistan, and Afghanistan. As the number and quality of campaigns to reach those children increase, the costs of the programme increase as well.

A detailed section on financial resources describes the assumptions made when calculating the costs of the programme, and the margins built in to anticipate a potential rise in funding required. The financial requirements for the period will be presented in a Financial Resource Requirements (FRR) document with corresponding costs and underlying assumptions per major budget category. The FRR information will be reviewed and updated every four months.

A strategy is in place to obtain long-term, predictable funding for the 2013-2018 period, to ensure that lack of funding is not a barrier to implementation and thus to eradication.

ENDING POLIO FOR ALL TIME

Ending one of the world's most enduring diseases will change the course of history and extend benefits beyond protecting future generations from this debilitating, preventable disease. The GPEI is responsible for identifying and reaching more than 2.5 billion children living in some of the most challenging areas and in vulnerable communities worldwide. GPEI staff and its infrastructure have served as a vehicle for the distribution of other global and country health priorities including anti-measles vaccines, vitamin A, malaria bed nets, anti-helminthics (de-worming), and surveillance for epidemics such as yellow fever and avian influenza in areas with fragile health systems. Full implementation of this plan will enable those benefits to multiply, improving immunization rates of children who never before have been reached with life-saving vaccines. Beyond ending polio, it will lay the groundwork for transitioning the extensive GPEI infrastructure to deliver additional public health dividends.

Ending polio also will produce economic benefits. A 2010 study in *Vaccine*[1] estimated that the GPEI's efforts will generate net benefits of $40-50 billion**,** largely savings from avoided treatment costs for paralytic polio and gains in productivity. Approximately 85 per cent of the savings will be in developing countries. The disease surveillance networks and improved vaccine delivery systems created by polio eradication efforts add economic benefits.

[1] Duintjer Tebbens DJ, Pallansch MA, Cochi SL, Wassilak SGF, Linkins J, Sutter RW, et al. Economic analysis of the global polio eradication initiative. Vaccine. 2010; 29 (2):334-343.

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Draft 22 March 2013

While polio harms a relatively small number of children worldwide, it is an epidemic-prone disease. On-going endemic transmission in three countries will continue to threaten polio-free areas everywhere, unless it is eradicated entirely. From 2009 to 2011, approximately half of all polio cases were due to international spread of polio from endemic areas to polio-free countries, and approximately one-third of the 2011 GPEI budget was spent on outbreak response in previously polio-free countries. Failure to eradicate polio now could result in as many as 200,000 new cases every year, within ten years.

Support from the global community to fully fund the *Polio Eradication and Endgame Strategic Plan 2013-2018* will pay dividends for generations to come by providing the resources needed to effectively and efficiently implement the Plan. Success will mean that this global partnership developed a workable, scalable model for global vaccination—a blueprint for success that can be used time and again to reach children throughout the developing world with other health resources, clean water and education. This partnership will end a disease and prove that together we can achieve even more ambitious goals in the future.

ENDS