4 U.S. PRIORITIES FOR GLOBAL POLIO ERADICATION

By Nellie Bristol and Phillip Nieburg[1]

Synopsis

The U.S. government is a major contributor to the Global Polio Eradication Initiative (GPEI), a World Health Organization-led program that has reduced the incidence of paralytic polio to its lowest level ever. While the initiative continues to encounter serious challenges, new strategies and personnel additions in the last several years have had a substantial positive impact, including the elimination of polio from India as of January 2011.

Efforts at global polio eradication have enjoyed broad bipartisan congressional support since the program's inception in 1988, including more than $2 billion in appropriations. In fiscal year 2012 alone, U.S. funding for polio eradication increased by nearly $19 million. Recent U.S. policy developments and achievements in polio eradication have included: activation of the Centers for Disease Control and Prevention's (CDC) Emergency Operations Center to better coordinate resources and to support rapid response to outbreaks; increases in polio staff in the field; and continued technical and financial support to the Global Polio Laboratory Network.

The GPEI is finalizing a six-year strategy to end transmission of the polio virus; transition to inactivated polio vaccine; better integrate activities with national health services; and generate sufficient resources to fund the initiative's final push. It also is beginning to catalog new tools and resources developed by the initiative that could be transferred to other health activities in a process known as "legacy planning."

To support polio eradication to its conclusion, the administration and Congress should continue to provide U.S. support including high-level political and diplomatic leadership. They also

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should prioritize completion of polio eradication and related activities separately from implementation of the legacy strategy currently being discussed. In addition, whenever possible, the CDC and USAID should deliver a cohesive U.S. government message on polio-eradication efforts, while the CDC should continue to contribute to regular status reports on initiative milestones.

Introduction

By the late 1980s, several regions of the world including the Americas and Europe were on their way to banishing paralytic polio from their borders, offering freedom from the crippling disease to millions of children. To provide that protection permanently everywhere, the World Health Assembly (WHA) in 1988 passed a resolution calling for the global eradication of polio by the year 2000. The move led to the formation of the Global Polio Eradication Initiative (GPEI), a coalition of international organizations, national governments, private-sector foundations, donor governments, corporate partners, and nongovernmental organizations. GPEI is spearheaded by the World Health Organization (WHO), the U.S. Centers for Disease Control and Prevention (CDC), Rotary International, and the United Nations Children's Fund (UNICEF). Since 2007, the Bill & Melinda Gates Foundation has been a major donor and policy-setting partner.

Shortly after the WHA resolution was passed, global polio incidence began falling sharply. Since 1988, the annual number of cases has plummeted from an estimated 350,000 to just 222 in 2012—the lowest number ever reported—representing a drop of more than 99 percent.

But this achievement has been hard fought, and completion of eradication is not yet assured. While the number of paralytic polio cases continued to fall fairly steadily through the 1990s, progress stalled through much of the early 2000s, with the number of cases settling at between 1,000 and 2,000 per year for most of the decade. The initiative has met with technical and operational difficulties and other challenges, including funding shortages, political instability, corruption, anti-Western sentiment, and parental refusal of the vaccine. It also struggled to gain access to migrant and other marginalized populations—especially in parts of India, Nigeria, Afghanistan, and Pakistan, which by 2010 were the only countries where polio transmission had never been interrupted. In January 2011, the initiative received a much-needed boost in morale when a long, concerted political and financial commitment by the Indian government resulted in the country's reporting its last case of polio, an achievement many had believed impossible given India's vast population and uneven health services. The accomplishment convinced many doubters that the technological capacity existed to eradicate polio worldwide.[2]

But polio campaigns in the three remaining endemic countries, Nigeria, Afghanistan, and Pakistan, continued to struggle, with the number of cases climbing in each country in 2011 compared to the previous year. In October 2011, the GPEI's Independent Monitoring Board (IMB), a panel of eight global health experts established in December 2010 at the request of the World Health Assembly, issued a review that was critical of the initiative, identifying program weaknesses and lack of innovation. In response, the GPEI increased the transparency of its deliberations, modified its governance structure, and refocused its efforts in endemic countries. Along with

2. For more information, see Teresita C. Schaffer, *Polio Eradication in India: Getting to the Verge of Victory—and Beyond* (Washington, D.C.: CSIS, January 2012), http://csis.org/files/publication/120117_Schaffer_PolioIndia_Web.pdf.

additional recommendations for program improvement, the IMB in its November 2012 report praised the GPEI for its previous response. "We have seen leadership reflect, learn, change its emphasis, and increase its urgency," the panel said.[3]

While the GPEI modified its operations, world health leaders called for greater concentration on polio eradication from other quarters. In May 2012, the World Health Assembly passed a resolution calling polio eradication a "programmatic emergency for global public health," in order to mobilize new attention and resources for the initiative. "Polio eradication is at a tipping point between success and failure," said Dr. Margaret Chan, director-general of the World Health Organization. "We are in emergency mode to tip it towards success—working faster and better, focusing on the areas where children are most vulnerable."[4]

The GPEI has operated under a global Emergency Action Plan through 2012 and into 2013. Each of the remaining three endemic countries also has developed its own national emergency plan with the specific goals of increasing polio vaccination rates and interrupting poliovirus transmission. Although there were more cases of paralytic polio in 2012 in Nigeria than in the previous year, and cases in more districts there compared to 2011, overall global rates have fallen to an all-time low and the virus is now being reported from the fewest geographic areas ever recorded. Nonetheless, the IMB warned in November: "History shows how cruel polio can be—that it resurges more easily than it is contained. There is a significant risk of having more polio cases in 2013 than in 2012, and in more countries. The Programme must receive a level of priority to not just mitigate this risk, but to achieve another year of major progress towards stopping transmission."[5]

To continue the push toward complete eradication, the GPEI in the first quarter of 2013 finalized and began to implement a six-year "Polio Eradication and Endgame Strategic Plan" that runs through 2018. The $5.5 billion, four-part strategy calls for[6]:

- Halting transmission of wild poliovirus[7];
- Improving routine immunization systems and transitioning to inactivated poliovirus vaccine (IPV) in place of the currently used oral polio vaccine (OPV);
- Formal certification of eradication and containment of polioviruses in facility-based settings; and
- Initiating a "legacy" planning process.[8]

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3. Independent Monitoring Board of the Global Polio Eradication Initiative, "Polio's Last Stand?" November 2012, http://www.polioeradication.org/Portals/0/Document/Aboutus/Governance/IMB/7IMBMeeting/7IMB_Report_EN.pdf.

4. Global Polio Eradication Initiative (GPEI), "Polio Eradication Shifts into Emergency Mode," May 24, 2012, http://www.polioeradication.org/tabid/461/iid/219/Default.aspx.

5. Independent Monitoring Board of the Global Polio Eradication Initiative, "Polio's Last Stand?"

6. This description is based on the most recent draft seen by working group members: Global Polio Eradication Initiative, "Polio Eradication and Endgame Strategic Plan (2013-2018): Working Draft: 23 January, 2013," http://www.polioeradication.org/Portals/0/Document/Resources/StrategyWork/EndGameStratPlan_20130123_ENG.pdf

7. "Wild poliovirus" refers to those polioviruses that routinely circulate in nature, as opposed to the rare disease-causing polioviruses that have evolved from weakened polio strains included in the oral polio vaccine (OPV).

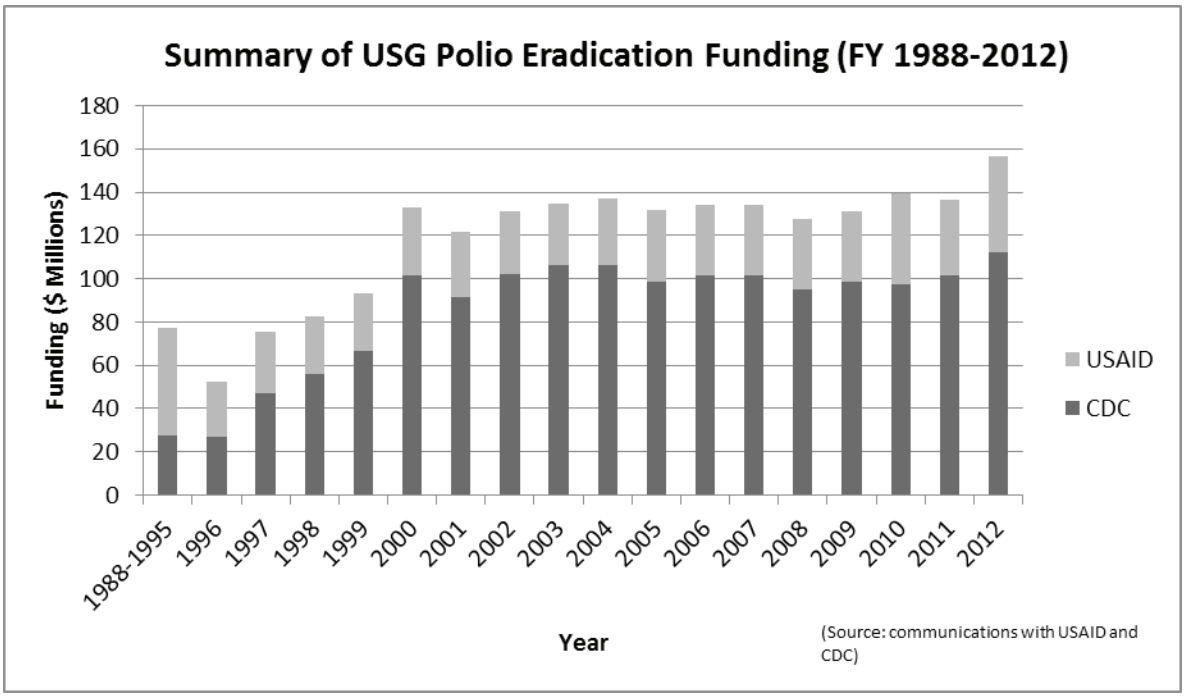
8. The legacy-planning strategy calls for a 17-month effort to catalog methods and innovations developed through polio eradication activities and determining whether and how they could be incorporated into other national health services. These assets include surveillance and diagnostic capacities, a trained workforce, social-mobilization networks, communications strategies, proven partnerships, and methods

The U.S. Government's Roles. Beginning with the U.S. Agency for International Development (USAID) and CDC's support of polio elimination in the Americas in the 1980s, the U.S. government has played a critical, multifaceted role in global polio eradication, providing political, diplomatic, and intellectual leadership, along with technical and operational resources. Between 1988 and 1994, USAID provided the Pan American Health Organization (PAHO) with $50 million, which supported regional advisers and staff training as well as operational costs for polio surveillance and laboratories. CDC experts served as policy advisers, provided specialized reference laboratory support, and offered training and technical expertise to help develop capacity for polio diagnosis and surveillance activities.

Shortly after the WHA global polio eradication resolution was passed, Congress began appropriating funds to support the global program, spurred by effective advocacy by Rotary International. The initiative has enjoyed broad bipartisan congressional support ever since, including more than $2 billion in appropriations, making the United States the single largest supporter of the GPEI. The bulk of these funds has been allocated to CDC, while $600 million has been administered by USAID. More than $155 million in U.S. funds were used for polio eradication activities in FY 2012, a nearly $19 million increase over the previous year's level.

As the primary U.S. government entities involved in polio eradication activities, CDC and USAID make valuable and complementary contributions to eradication, both by providing tools for eradication activities and by developing program assessments that have improved the GPEI's effectiveness. In addition to substantial resources and technical expertise, the U.S. government has provided high-level advocacy for the initiative, including at the United Nations and at the G-8.

for providing services to difficult-to-reach populations. Maintaining these capacities beyond the lifetime of the GPEI will require substantial new resources and partnerships above those currently envisioned for eradication.



Policy Developments under the First Obama Administration

In December 2011, CDC director Thomas Frieden activated CDC's Emergency Operations Center (EOC) to provide better coordination of CDC and other polio resources and to support rapid response to polio outbreaks. Usually reserved for acute emergency response, EOC activation raised the profile of polio eradication at CDC. To further support its engagement, CDC increased its polio staff in the field and at its Atlanta headquarters. In addition, the United States is funding more than 50 percent of polio staff costs at WHO's Geneva headquarters and from 10 to 90 percent of polio staff costs in WHO regional and country offices.

In other operational support, the United States continues to provide primary technical and financial backing to the 146 laboratories in the Global Polio Laboratory Network, including resources for WHO regional management staffing. In recent years, the polio laboratory network has participated in surveillance of and response to other diseases, including pandemic influenza and severe acute respiratory syndrome (SARS). The United States also supports the active polio surveillance systems of more than 25 countries, including the use of civil society groups for community-based surveillance in migrant and mobile populations.

Further, through networks of NGOs and in partnership with UNICEF, USAID contributed to using social-mobilization activities to significantly reduce polio vaccine refusal rates in Uttar Pradesh, "one of the last strongholds of polio virus in India."[9]

In recent examples of diplomatic leadership, USAID administrator Rajiv Shah engaged senior staff from the ministries of health of India, Pakistan, Afghanistan, and Tajikistan at the June 2012

9. Elaine Murphy, *Social Mobilization: Lessons from the CORE Group Polio Project in Angola, Ethiopia, and India* (Washington, D.C.: USAID, 2012), http://www.coregroup.org/our-technical-work/initiatives/polio/272-social-mobilization-lessons-from-the-core-group-polio-project-in-angola-ethiopia-and-india.

Child Survival Call to Action in Washington, DC to encourage cross-border cooperation in facilitating polio vaccination. Later in the year, Department of Health and Human Services Secretary Kathleen Sebelius and CDC director Frieden participated in an event during the UN General Assembly in September that highlighted the need for continued resources for and ongoing attention to polio eradication. The event also featured the presidents of Nigeria, Afghanistan, and Pakistan, the prime ministers of Australia and Canada, and Gates Foundation cochair Bill Gates.

Ongoing Challenges

Four primary hurdles remain to complete eradication of polio: adapting to local circumstances; transitioning to inactivated polio vaccine (IPV); better integrating activities with national health services; and generating sufficient resources to fund the initiative's final push. Progress also is dependent on successful negotiation of the political and security situations in endemic countries as was made clear by recent lethal attacks on health workers in Pakistan and Nigeria, which slowed immunization efforts there.

First, GPEI believes that the prospects of success are more positive than ever before and that it is well positioned to interrupt transmission by its current milestone of the end of 2014. That said, interruption of transmission by any particular calendar date cannot be guaranteed and various challenges could prove more difficult to overcome. For example, halting transmission of poliovirus in the remaining endemic countries will require ongoing program adaptations that include better systems for managing eradication programs within those countries and better integration of eradication activities with the needs and wishes of local communities.

Second, completing eradication requires successfully carrying out the same polio vaccine transition already made in many developed countries, including the United States. OPV, used broadly for polio immunization, including by the GPEI, is inexpensive and can be administered orally by minimally trained vaccinators, making it well suited for mass campaigns. But because OPV is made from polioviruses that have been weakened but are still alive, it can itself in rare cases cause paralytic polio in recipients or their close contacts. It also can revert to a form that can pass from person to person, causing localized outbreaks in populations with low polio immunity. With the GPEI on the verge of stopping transmission of all wild poliovirus, a transition is planned from OPV to the use of inactivated vaccine, which is made from killed poliovirus particles and therefore carries no risk of vaccine-related paralytic polio. Current IPV is significantly more expensive than OPV, however, and must be administered via injection, requiring the more complex vaccination process used for other injectable routine vaccinations such as measles and rubella. For example, health workers must be trained to give injections safely, and needles and syringes must be purchased and properly disposed of after use. The GPEI is pursuing development of more affordable versions of IPV and the financial means to incorporate them into the program, as well as working with the GAVI Alliance, UNICEF, WHO, and other organizations to facilitate routine IPV vaccination globally.

Third, the GPEI must determine how its existing capacities can best be adapted to enhance the effectiveness of national immunization programs that provide the bulk of childhood immunizations in developing countries for diseases other than polio (e.g., tetanus, diphtheria, whooping cough, and measles). In some places, the initiative has evolved to rely on its own freestanding mass polio vaccination campaigns that often are not linked to national routine immunization programs. However, because the ultimate success of the GPEI will depend on the ability of national programs

to take on the responsibility for routinely providing IPV, successfully making linkages to local immunization services is now essential.

Finally, and perhaps most significantly, new resources and funding partners are needed to help meet the $5.5 billion 2013–2018 budget the GPEI estimates it will need to halt transmission in remaining areas and start the transition to IPV.

Policy Recommendations

1. Maintain U.S. leadership and support.

Polio eradication is unlikely to succeed without a continued U.S. commitment of funding, staff, and laboratory resources. In addition, high-level U.S. political and diplomatic leadership remains essential to the GPEI in order to encourage the ongoing focus and participation of other donors and polio-affected countries.

2. Put the eradication endgame strategy first.

Prioritize the global polio eradication endgame, namely development and implementation of effective strategies, recommendations for program improvements, and budgets for enhanced population immunity and surveillance, virus containment, vaccine transitions, and completion and certification of eradication. This will require keeping eradication and related activities separate from implementation of the legacy strategy currently being discussed. U.S. contributions to carrying out GPEI legacy activities beyond eradication should be considered and made independently of decisions surrounding ongoing eradication activities.

3. Pursue a U.S. government approach on polio eradication that systematically leverages the comparative advantages of individual U.S. institutions.

Whenever possible, CDC and USAID should deliver a cohesive U.S. government message on polio eradication that leverages both the broader development perspectives of the U.S. Agency for International Development and the disease-prevention orientation of the Centers for Disease Control and Prevention. Both perspectives are critical at this point, as the GPEI must find new ways to overcome challenges in the remaining endemic areas, successfully make the transition to IPV, and build closer links with national routine immunization programs, many of which require significant strengthening. U.S. government activities also should include diplomatic engagement with countries at particular risk for polio infections.

4. Support the recommendations of the Independent Monitoring Board.

The United States should strongly support the IMB's independent efforts to identify problems and obstacles faced by and within the GPEI, including by encouraging the board's continuation beyond the expiration of its current term at the end of 2012. The United States also should urge the GPEI to respond quickly to problems identified by the IMB—in particular, by experimenting with innovative solutions to political obstacles, such as working through NGOs and other civil entities.

5. Continue to produce and disseminate independent U.S. assessments.

High-quality external assessments provide the GPEI with crucial insight and information to improve its operations. CDC should continue contributing to regular status reports that present data on progress on GPEI milestones, surveillance and immunity, performance indicators, and that in-

clude UNICEF data on characteristics of children missed in campaigns. It also should continue to work with WHO regional offices in assessing the risk of polio introduction and spread in countries that currently are polio free. USAID should continue its vital efforts to identify program weaknesses and potential solutions.

Conclusion

Although the polio eradication effort suffered several agonizing setbacks at year's end—the vaccinator killings in Pakistan and the spread of paralytic polio from Nigeria to a boy in Niger—the IMB judges positively the GPEI's overall performance for 2012. Nonetheless, the board urges maximum continued effort to capitalize on the initiative's momentum. "It is 2013 that matters the most. Stopping transmission is urgent—progress must be seen in weeks and months, not months and years," IMB Chair Liam Donaldson wrote in a January 18 letter to WHO director-general Chan.[10] "The world is on the brink of eradicating polio," Donaldson added. "This goal absolutely must be seen through to completion."

While conditions remain difficult in many endemic areas and the poliovirus is a tough and resilient adversary, the right combination of local, national, and global political commitment and technical, managerial, and operational innovation could achieve the worldwide eradication of a dreaded disease. Continued U.S. funding, technical support, and political and diplomatic advocacy through the initiative's conclusion would promote humanitarian values and could help secure a major global health achievement.

For Additional Information:

- The Global Polio Eradication Initiative: http://www.polioeradication.org/
- Polio This Week—polio case count: http://www.polioeradication.org/Dataandmonitoring/Poliothisweek.aspx
- The Independent Monitoring Board of the Global Polio Eradication Initiative: http://www.polioeradication.org/Aboutus/Governance/IndependentMonitoringBoard.aspx
- U.S. Centers for Disease Control and Prevention polio eradication link: http://www.cdc.gov/polio/updates/
- U.S. Agency for International Development polio eradication link: http://www1.usaid.gov/our_work/global_health/mch/ch/techareas/polio_brief.html

10. Sir Liam Donaldson, Chair, Independent Monitoring Board of the Global Polio Eradication Initiative, Letter to World Health Organization Director-General Margaret Chan, January 18, 2013 http://www.polioeradication.org/Aboutus/Governance/IndependentMonitoringBoard/Reports.aspx.