Planning a Post-Polio Future

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The United States has been a top financial and technical supporter of global polio eradication for more than 30 years. In addition to polio-related activities, U.S. funding for eradication supports surveillance, immunization delivery, laboratories, and response capabilities that aid prevention and control of a variety of diseases in countries with the weakest health systems, including South Sudan, Afghanistan, and the Democratic Republic of the Congo. For example, polio program personnel and infrastructure helped contain a 2014 Ebola outbreak in Nigeria. In addition, U.S. Agency for International Development (USAID) polio funding supports disease surveillance and immunization delivery in hard-to-reach areas where country governments have difficulty providing services. Preventing and controlling diseases before they become major national and international threats serves U.S. interests since it both helps promote stability in fragile countries and contains health threats before they reach U.S. borders.

As global polio eradication grows nearer, U.S. leaders will be under increasing pressure to plan the transition of the $228 million a year now earmarked for the program. Developing a concrete future for U.S. polio assets that is clearly communicated to government agencies, Congress, polio program stakeholders, and partner countries is the best way to transition valuable polio assets to sustained capacities that will continue to deliver health benefits and protect Americans from infectious disease.

The first order of business as polio cases tail off is ensuring all countries have the capacity to conduct polio surveillance and vaccination for the foreseeable future. This is essential for maintaining polio immunity at the level necessary to sustain eradication and so that any sign of the disease either through an actual case or detection in the environment can be met with a strong response. Capacities should be integrated into country-based disease surveillance and response systems, but the donor-supported Global Polio Eradication Initiative (GPEI) may need to ensure provision of technical assistance and other resources to countries unable to perform these essential tasks.

Polio assets also can be harnessed to address other U.S. global health priorities. Based on an analysis of polio infrastructure and U.S. global health policy supplemented by interviews with government officials and global health experts, measles and rubella elimination coupled with immunization

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2 Analysis in this paper was informed by more than 20 interviews conducted in the first half of 2016 with officials from the Centers for Disease Control and Prevention, U.S. Agency for International Development, State Department, Bill & Melinda Gates Foundation, and other sources.
system strengthening and the Global Health Security Agenda are the U.S. health activities with the most direct overlap with polio assets and are most likely to attract lawmaker interest. As a result, they are the top candidates for future repurposing of polio funding. With concerted effort and planning, polio assets offer an unprecedented opportunity to bolster both of these activities.

A number of U.S. agencies and departments are involved in polio eradication. The State Department’s Office of International Health and Biodefense (IHB) is coordinating U.S. transition planning. Later in the process, the White House National Security Council (NSC) may be needed to ensure high-level political visibility and interagency reach.

Beyond the United States, polio transition planning is highly complex, involving civil society, governments, donors, and organizations at the country, regional, and international levels. It requires concentrated attention from a range of actors, both those focused on polio and those involved in broader immunization and disease control activities including organizations that benefit from polio funding in ways that are not explicitly tallied. As a major donor and global health actor, the United States will be a key player in encouraging partner governments, the GPEI, and other organizations to remain actively involved in transition planning and ensure implementation.

Recommendations for the U.S. Government

1. The U.S. government should take a proactive role in planning for the future use of funding currently earmarked for polio eradication. The plan should:

   - Help countries develop functions needed to maintain long-term polio cessation including polio surveillance, immunization, and poliovirus containment;
   - Ensure polio assets support mutual partner country and U.S. global health goals. Top candidates are measles and rubella elimination through immunization system strengthening and the Global Health Security Agenda;
   - Identify continued support for country, regional, and global networks developed for polio eradication to prevent, detect, and respond to a range of infectious diseases;
   - Encourage non-GPEI health initiatives currently benefiting from polio resources to determine how those assets support their activities and how the organizations will continue essential functions post-eradication.

2. The IHB, with CDC, and USAID providing the necessary technical support, should coordinate U.S. transition planning, including by cataloguing U.S. polio-funded assets and delineating how they contribute to health activities beyond eradication. If further leadership and political visibility is required, the NSC should provide it.

Gates Foundation, Rotary International, World Health Organization, Gavi, the Vaccine Alliance, John Snow International, PATH, and with Capitol Hill staff. The author thanks them for their insights.
3. U.S. diplomatic staff should encourage partner countries, the GPEI, and international organizations to be proactive in polio transition planning and determining how polio assets can bolster mutually agreed-upon global health goals.

4. Budget lines currently reserved for polio eradication should be expanded beginning in FY 2018 to allow funds to be used for other health activities without taking away resources needed to secure global polio eradication.

Background

In pursuing its mission to reach every child with polio vaccine, the Global Polio Eradication Initiative (GPEI)\(^3\) has developed a valuable set of public health assets. These include a 145-site global polio laboratory network, extensive disease surveillance capacities, a community-based communications and health worker structure, and immunization and disease response capabilities that can be deployed in underserved areas. Many of these assets are supported by international donors, which in recent years have contributed roughly $1 billion a year to the program.

As the number of reported wild polio\(^4\) cases totals a record low 34 as of November 30, 2016,\(^5\) country officials and international partners are considering the future of polio’s assets after eradication is achieved and certified and donor funding for the program wanes. Polio funding already supports a variety of health activities. For example, polio program staff provides the bulk of immunization system technical assistance to low- and middle-income countries. In Africa, 90 percent of World Health Organization (WHO) immunization staff is supported through polio funds.\(^6\) A survey shows that polio staff devotes more than half of their time to a variety of health activities including immunization for other diseases and health promotion.\(^7\) With proper planning and support, these resources can continue to contribute to increased immunization levels and other health gains.\(^8\)

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3 The Global Polio Eradication Initiative (GPEI) is a public/private partnership led by national governments and supported at the international level by the World Health Organization, UNICEF, U.S. Centers for Disease Control and Prevention, Rotary International, and Bill & Melinda Gates Foundation.

4 Wild poliovirus occurs naturally in the environment. Another form of the disease, vaccine-derived polio, can be contracted in rare cases from the oral polio vaccine.

5 Global Polio Eradication Initiative, “Polio this week as of 30 November 2016,” http://polioeradication.org/polio-today/polio-now/this-week/.


While ultimately countries will make the final decisions regarding which polio assets will be continued and how they will be paid for, international leaders of the GPEI are now considering the future of their polio program funding. These include the WHO, UNICEF, CDC, Rotary International, and the Bill & Melinda Gates Foundation. In addition to considering country-specific approaches, polio donors and partners should look at ways that continuing polio assets can contribute to regional and global networks to prevent, detect, and respond to major health threats.

The U.S. government is one of the most generous and dedicated supporters of global polio eradication, providing more than $2.6 billion in funding along with invaluable technical and scientific support over more than 30 years. In FY 2016, Congress appropriated $228 million for polio eradication activities, $169 million through CDC, and $59 million through USAID and plans a similar amount for FY 2017. As the prospect of global eradication nears, both agencies are beginning to plan for how to transition resources now earmarked for polio eradication.

Polio funding has been a boon to U.S. health programs. Nearly three-quarters of CDC’s Global Immunization Division’s (GID) budget is provided through appropriations earmarked for polio eradication. While used primarily for polio-related activities, the funds also support personnel who provide technical assistance for a broad range of health activities in countries with the weakest health systems. For example, because they had a history in the country and solid relationships with government health officials, polio-funded CDC personnel were able to quickly assist the Nigerian government in responding to and eventually halting a potentially devastating Ebola outbreak there. U.S. polio funding to India supports disease surveillance and response in a country that generates one-fifth of world’s total disease burden. U.S. policymaker engagement in purposeful transitioning of funds now designated for polio eradication would ensure valuable technical assistance and infrastructure can continue to monitor and improve health worldwide.

U.S. Polio Transition Options

The analysis in this paper reflects interviews and other data-collection activities to argue that polio program assets should be harnessed both to provide long-term polio immunization and surveillance and to contribute to other priority U.S. global health goals. While ultimate decisions on the future of polio funding should be postponed until global polio eradication is achieved and certified, conversations on this important topic should begin now among administration officials, lawmakers, international organizations, polio program donors, civil society, and affected countries so that a thoughtful approach can be adopted.

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12 For more, see Bristol and Millard, Catalyzing Health Gains through Global Polio Eradication.
During interviews, participants (see footnote 2) were asked where they thought polio assets would provide the most benefit among an array of existing U.S. global health programs. Given fiscal constraints and a political environment that discourages new spending, putting polio funding toward a new program was not considered. Programs considered are U.S. global health priorities with the most overlap with polio program assets. Interviewees were asked about their choices for polio funding among the following options:

- Measles and rubella elimination\(^{13}\)
- Global Health Security Agenda
- Child health
- Immunization system strengthening
- No overarching U.S. goal for polio assets
- Another program of their choice

Overall, interviewees agreed that abrupt discontinuation of polio funding, even after global certification of eradication, should be avoided. Polio surveillance and immunization activities will need to be continued for a period to be determined by public health experts to prevent any possible resurgence of the disease. Beyond those considerations, they also agreed that the U.S. government should encourage partner countries to develop transition plans and find mutual goals toward which polio assets could usefully be placed. In addition, many polio assets, including laboratories and surveillance, feed into regional and even global systems. Thus, taking a broad view of polio asset transition is essential to maintaining global disease detection and response capabilities as well as tapping into global governance, funding, and advocacy structures developed for polio eradication.

Opinion also supported integrating polio assets into programs that had definite outcomes and goals rather than broader approaches, such as health systems strengthening or routine immunization delivery, where the impact is harder to quantify. Particularly since 2000, U.S. global health funding has focused more on interventions and initiatives aimed at specific diseases such as HIV (53 percent of the global health budget) and malaria (9 percent) or populations such as mothers and children (12 percent).\(^{14}\) Although U.S. programs can and do help improve health systems in partner countries through activities such as health worker training and provision of technical assistance, system strengthening is rarely a specific funding category in and of itself for the United States. In fact, President Obama’s 2009 Global Health Initiative, an attempt to broaden U.S. global health funding to support health systems at large, fell flat\(^{15}\) lacking leadership and congressional support and attracting

\(^{13}\) Elimination refers to reducing to zero the number of new cases of a disease in a geographic region while eradication is defined as removing the disease from the population worldwide.


opposition from advocacy groups concerned about budget cuts to disease-specific programs.¹⁶ Fueling congressional aversion to systems-based approaches are concerns about lack of specific measures to gauge impact. As a result, interviewees, especially those working within the U.S. government, emphasized the need to shift polio assets into programs with specific targets and endpoints, leaving child health and immunization system strengthening as important sub-goals in polio asset repurposing, but not as explicit primary focuses. Opinions coalesced around measles and rubella elimination achieved through strengthening immunization systems and the Global Health Security Agenda. The following is a discussion of the opportunities and challenges of each program as a strategic goal for polio assets:

**Measles and Rubella Elimination Coupled with Immunization System Strengthening**

Although vaccination efforts have reduced the number of cases globally by 79 percent, measles remains a leading killer of children worldwide, resulting in nearly 115,000 deaths in 2014.¹⁷ Rubella, although generally a mild disease, can cause an array of birth defects when contracted by pregnant women. The two diseases often are paired since they present with similar symptoms and thus share a surveillance system and there is a combination vaccine that immunizes against both.

Measles is one of a handful of diseases considered appropriate candidates for global eradication. In December 2010, WHO’s Strategic Advisory Group of Experts on Immunization concluded that measles can and should be eradicated and that the effort would in turn support rubella control.¹⁸ Some have argued that polio assets should be shifted wholesale into a push for global measles eradication.¹⁹ While the move would take advantage of both national and global structures developed for the polio program, there is consensus that the world does not now have the appetite for another eradication campaign given polio eradication’s difficult and protracted experience.²⁰ Nonetheless, the desire to tackle measles at a global level remains strong. All six WHO regions have committed to measles elimination goals and elimination of both diseases is an indicator in the Global Vaccine Action Plan, approved by all 194 WHO member countries.²¹

CDC, a founding member of the Measles and Rubella Initiative,²² has endorsed measles and rubella (M/R) elimination as a primary goal of its 2016–2020 strategic framework for global immunization,

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²² The Measles and Rubella Initiative is a public/private partnership supporting measles and rubella vaccination efforts. For more, see http://measlesrubellainitiative.org.
using polio eradication as a platform. “The next five years are crucial to build on and leverage the successful achievement of polio eradication and advance additional public health targets including a world free of measles and rubella,” writes CDC director Thomas Frieden. Other goals include ending vaccine-preventable deaths for children under 5 and reducing chronic disease and cancer deaths from vaccine preventable diseases. USAID has a long history of supporting immunization activities, including for M/R, through Gavi, the Vaccine Alliance, civil society organizations, and by providing technical assistance to national governments.

In fact, there already is a strong link between the polio program and M/R immunization and surveillance infrastructure globally, including shared personnel, vehicles, specimen transportation systems, and laboratories. Estimates indicate that as much as $77 million a year in GPEI funding already directly supports M/R prevention and control. Even so, M/R surveillance globally remains underfunded by roughly $21 million a year. As global financing wanes for polio eradication, M/R activities could face greater shortfalls unless alternative funding is secured.

Opportunities: If polio assets were to be transitioned directly to another disease control and elimination goal, M/R would be a logical candidate. Measles elimination has been high on the global agenda for years and there already is significant overlap and resource sharing between M/R activities and the polio eradication program. In a 2015 commentary, CDC Global Immunization Division senior adviser Steve Cochi said measles activities have similar strategic and program implementation needs, and asked, “Does it make any sense to dismantle the polio assets and infrastructure in the next few years because of poor planning and lack of forward vision, only to have to reconstruct it later at greater expense and after lost momentum and human resource capacity?”

Transitioning CDC and USAID’s current polio earmark to M/R would allow the agencies to continue building on the relationships and infrastructure they have developed for polio, providing a longer-lasting and better return on investment for U.S. polio funding. Further, it would address a disease that continues to crop up in the United States through disease importation and spread through low immunization levels in some parts of the country. Unlike polio, which largely was addressed through an easily administered oral vaccine often distributed through a system parallel to low-income country immunization systems, M/R immunization requires an injectable vaccine. As a result, focusing on M/R elimination could arguably result in strengthening entire immunization systems in the places that need help the most. Further, focusing on a single, achievable goal rather than more nebulous systems-oriented activities would likely be more attractive to U.S. lawmakers.

Challenges: While disease-specific programs are an easier sell, they run the risk of furthering a “siloed” approach that dogs many global health activities. Examples include U.S. HIV programs, which especially early on created facilities that focused on HIV to the exclusion of other pressing health

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24 Ibid.
25 Cochi, “A no-brainer: How to transition from polio eradication to measles eradication.”
needs in underserved communities. The polio program began its work within immunization systems, but then ultimately ran parallel to them in some countries as it became clear they could not reach enough children to ensure eradication. The approach engendered resentment in some communities and among those involved in immunization systems work. M/R program implementers would need to take special care that they work within national immunization systems and improve them overall rather than conducting separate M/R activities.

While U.S. lawmakers tend to support disease-specific approaches over more general health systems activities, a push for M/R elimination would require high-level champions within and outside of Congress. Polio eradication gained its decades-long unwavering support largely through the efforts first of Rotary International, and later the Bill & Melinda Gates Foundation, which effectively advocated for Congress to keep polio funding intact. Aiding the drive were lawmakers who themselves had suffered from polio or had family members who did. M/R elimination supporters would need to generate similar enthusiasm for their goal. Finding champions for a disease that has not affected most Americans for decades could be difficult.

The Global Health Security Agenda

The Obama administration launched the Global Health Security Agenda (GHSA) in February 2014. The initiative was endorsed by the G7 the same year. The goal is to help countries improve their capabilities to prevent, detect, and respond to epidemic-prone diseases. The GHSA is linked with WHO’s International Health Regulations, which lay out actions and responsibilities for national governments in the face of public health threats of international concern. As part of the programs, countries are independently evaluated to determine their strengths and weaknesses related to surveillance, laboratory capacity, health workforce, and emergency response capabilities.

There are more than 50 countries involved with the GHSA, some as financial backers of the initiative. The United States is helping 30 countries improve their health threat response capabilities. The White House announced a $1 billion allotment to expand GHSA in July 2015.27

Opportunities: The GHSA offers a broader approach for use of polio assets but contains specific measurable targets embodied in 11 “action packages”28 designed to improve countries’ public health capacities. For example, the Immunization Action Package measures progress toward a functioning national vaccine delivery system through achievement of at least 90 percent coverage of the country’s 15-month-old population with at least one dose of measles-containing vaccine.29 GHSA protects U.S. citizens by controlling potential threats outside American borders before they can land here. With Ebola and Zika still fresh in people’s minds, controlling diseases abroad could appeal to some lawmakers as a worthy cause. There is significant overlap between GHSA action packages and polio assets in the areas of surveillance, laboratory capacity, immunization, emergency operations

centers, and workforce development. In a 2016 examination, WHO evaluators found that polio assets strengthened Pakistan’s capacities in the areas of disease reporting, response, and emergency operations.\(^3^0\) Sixteen countries\(^3^1\) with the largest collection of externally funded polio assets are considered priorities for polio transition planning. Of those, seven overlap with U.S. GHSA priority countries: Pakistan, Bangladesh, Cameroon, Democratic Republic of the Congo, Ethiopia, India, and Indonesia.

**Challenges:** The GHSA is a new endeavor of the Obama administration. It does not at this point have its own “line item” in the budget, which means its continued funding is less certain than more established programs that simply need to be reauthorized, and the program has been slow to take hold on Capitol Hill. The budgetary fate of the GHSA yet to be secured and as a program closely associated with the Obama administration, it could face political pushback in future administrations. Aligning polio assets with a program with an uncertain future could risk discontinuation of valuable public health activities.

**Developing a U.S. Government Polio Program Transition Strategy**

The State Department’s Office of International Health and Biodefense (IHB) is coordinating the U.S. government polio transition plan. IHB officials have communicated with embassies in each of the priority countries to alert them to a need for transition planning, encourage them to catalogue U.S.-funded polio assets in their purview, and start to think through how they could be repurposed, following the GPEI guidelines for transition planning. IHB will continue to play an important role in the planning process as it melds CDC and USAID's transition plans into a cohesive whole. However, the office does not have the resources or the political clout to move polio transition to a higher profile. Therefore, the National Security Council should be brought in to the process as it progresses to ensure both White House backing and full reach to all agencies that could contribute to the planning process.

CDC has instituted a transition planning committee and is cataloguing its polio assets. In global health security, the agency is using country assessment plans to envision how polio assets could bolster disease prevention and response capabilities in individual countries. Developing a concrete future for U.S. polio assets that is clearly communicated to government agencies, Congress, polio program stakeholders, and partner countries is the best way to ensure valuable polio assets are used effectively in the future.

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\(^{31}\) These countries are: India, Pakistan, Afghanistan, Chad, Democratic Republic of the Congo, Angola, Somalia, Ethiopia, Sudan, South Sudan, Cameroon, Bangladesh, Nepal, Myanmar, Nigeria, and Indonesia.
Transition Planning at the Country and Global Level

The polio transition planning process is complicated and involves a number of actors, both those that have been involved in polio eradication and the broader health and development community. Among those are:

- The five organizations leading the GPEI;
- Countries with large amounts of external polio funding (see footnote 31);
- Polio donors, including the United States; and
- Health initiatives like Gavi, the Vaccine Alliance and the Measles/Rubella Initiative, whose current activities rely on polio-funded infrastructure in ways that possibly are not accounted for. For example, Gavi provides funds to low- and middle-income countries primarily to purchase vaccines, but relies on country health systems to administer them. Polio resources have helped bolster those systems, but continued funding may be needed to sustain improvements.

Planning for polio transition involves several steps. Countries receiving the most polio-related funding must ascertain what polio assets they have currently and the role they are playing beyond polio eradication. Countries then need to determine what resources they will need to integrate into their health systems to continue long-term polio control.

While countries themselves ultimately will decide which assets beyond basic polio functions they wish to continue, the United States should support the transition process with an eye toward sustaining polio infrastructure that supports mutual goals. All involved in the transition planning process—countries, donors, the GPEI, and international health initiatives—should look for opportunities to support regional and global networks in the areas that facilitate disease prevention, detection, and response.

Repurposing Polio Assets Protects Americans

While support for polio eradication should continue through global certification and subsequent immunization and surveillance requirements, the United States also should begin planning with partner countries to repurpose polio assets toward common global health goals. Logical choices on the U.S. end include using polio infrastructure toward M/R elimination coupled with immunization system strengthening and the GHSA. The polio program has created a wealth of public health resources that can contribute significantly to both goals. M/R elimination is a long-standing goal of many countries and of the Global Vaccine Action Plan. Since immunization for M/R requires an injectable vaccine, while providing a concrete, measurable target, pursuing elimination as a goal could also improve immunization systems overall. Planning continued support for disease control capabilities through the GHSA including workforce expansion and emergency operations centers, would help enlarge the network of public health capacities to stop potential epidemics at their
source. Communicating strong U.S. interest in polio asset transition will help motivate other
stakeholders to develop a similar approach by signaling the importance of the activity. It also will help
ensure that the public health boost offered by polio eradication is purposefully harnessed for other
health activities that will help improve global stability and protect Americans from infectious disease.

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