Bolstering Public Health Capacities through Global Polio Eradication

Planning Transition of Polio Program Assets in Ethiopia

A Report of the CSIS Global Health Policy Center

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Nellie Bristol and Chris Millard

The Global Polio Eradication Initiative (GPEI) has developed valuable public health resources over its 27-year history. Polio program-supported laboratories and medical officers form the backbone of monitoring and surveillance systems that track other diseases in addition to polio. Polio-funded personnel provide critical immunization and health education training and supervision, logistical support, and foster relationships between health workers and the community. As the number of polio cases declines worldwide and resources devoted to eradication begin to dwindle, the question of how to sustain useful public health assets now funded through the polio program becomes more urgent. Losing polio resources would create serious health system gaps in some regions. In Africa, for example, 90 percent of the more than 1,000 World Health Organization (WHO) personnel supporting childhood immunizations on the continent are funded through the polio program. GPEI leadership is encouraging national health leaders and international and bilateral organizations supporting polio eradication to develop “polio legacy plans” to foster the thoughtful transition of polio assets. The goal of legacy planning is to maintain functions essential to sustain eradication and avoid potentially serious health system lapses as polio funding declines, but also to ensure that a valuable collection of public health resources is not squandered. Countries and donors have devoted billions of dollars to polio eradication and legacy planning would help ensure the global public health system is able to maximize those investments for the long term.

Globally, the U.S. government is polio eradication’s largest country donor. To explore how policymakers can best leverage the funding to support both partner country and U.S. global health goals, the CSIS Global Health Policy Center has been examining the issue of polio legacy planning with an eye toward the role the U.S. government should play in the process (see the appendix for a full listing of relevant documents). To continue that work and assess legacy planning’s application to a specific country

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1 Nellie Bristol is a senior fellow with the CSIS Global Health Policy Center in Washington, D.C. Chris Millard is a research associate and program manager with the CSIS Global Health Policy Center.
2 The Global Polio Eradication Initiative (GPEI) is a coalition of national governments and international and U.S.-based organizations that oversees efforts toward global polio eradication. Leading partners include the World Health Organization, UNICEF, the U.S. Centers for Disease Control and Prevention, Rotary International, and the Bill & Melinda Gates Foundation.
important to U.S strategic and humanitarian goals, a CSIS team visited Ethiopia in October and early November 2015. Through a series of interviews with U.S. embassy personnel, WHO staff, UNICEF, Rotary International, U.S.-funded nongovernmental organizations (NGOs), and local, regional, and federal officials, along with site visits, the team found that, although it is a relatively small amount of money (just over $3 million annually), U.S. funding for polio eradication in Ethiopia helps supplement government services in program areas where they are particularly weak, namely, immunization coverage and disease surveillance in hard-to-reach populations. The funding provides:

- Salary support for key personnel in Ethiopia’s Expanded Programme on Immunization, which helps implement the country-wide immunization program for 10 different vaccines;
- Vehicles, laboratory services, training, and personnel that support not only polio immunization campaigns, but activities related to other immunizations as well;
- Immunization cold chain support critical to ensuring polio and other vaccines reach rural areas;
- Technical assistance and supervision that helps improve a range of health services;
- Surveillance officers who monitor several diseases in Ethiopia, including in remote areas where government services are scarce;
- Newborn tracking that helps address the country’s high infant mortality rate; and
- Social mobilization support that provides health education as well as alerting families to the availability of health services and encouraging their use.

In addition to benefiting the Ethiopian population, polio program assets contribute toward top U.S. global health goals. Immunization system support is a priority both for the U.S. Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC), while improving disease surveillance globally is an important feature of the Obama administration’s efforts in global health security.

Despite the value of polio-funded assets to both the Ethiopian health system and U.S. global health goals, ensuring their continuation will involve challenging and complex planning and negotiations between the Ethiopian government and its health and development partners. While not all of the activities now supported by polio funding will be necessary as the disease is eliminated, many of them should be continued both to build long-term immunization and disease surveillance capacities into the Ethiopian health system and to contribute to other health gains. U.S. officials should work with the Ethiopian government to identify polio-funded assets that contribute to the health goals of both countries and, with other donors and interested parties, devise a plan to continue supporting the services after eradication funding is phased out. In particular, the government and its partners should retain and continue surveillance and supervisory
capacity now provided by polio-funded staff and ensure proper support for routine and supplemental immunization activities and infrastructure.

Ensuring Polio Eradication’s Legacy

The push to plan for a polio legacy grew out of concerns that polio-related assets would wither away after the GPEI dissolved. The legacy concept first was developed by the Independent Monitoring Board (IMB) of the Global Polio Eradication Initiative, an eight-member panel constituted to assess progress toward polio eradication. In its June 2012 report, the IMB recommended that the GPEI begin taking a longer-term view of its “legacy.” Citing mapping capabilities, communications networks, and disease surveillance capacity, the IMB asked, “So what is to happen when polio has been eradicated? How will all of this potential be used? Or will its legacy be scattered to the four winds?” Legacy planning was included as the last of four pillars in the GPEI’s Polio Eradication & Endgame Strategic Plan 2013–2018, released in April 2013. Planning for the transition calls for cataloging polio-related assets in each country, determining which resources can be repurposed to long-term polio-related activities and other health programs, and developing a specific plan for how they will be supported.

As the GPEI struggled to contain new polio outbreaks in the Horn of Africa and Middle East in 2013–2014, focus on legacy planning was slow to take hold. As the momentum toward eradication began to pick up when Nigeria officially marked a year without a case of wild poliovirus in September 2015, the call for legacy planning became more urgent. Now only two countries have endemic polio—Afghanistan and Pakistan—and donors are starting to consider options for funds dedicated to the program. The GPEI is encouraging countries to plan for polio resource transitions though a series of meetings at the WHO regional level and through consultative support. The GPEI Legacy Management Group has developed guidelines to help countries with the planning process. One country cited for its successful transition process is India. The government of India has been working with GPEI partners for several years to incorporate personnel, procedures, and innovations into the Indian health system with a

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9 Ibid., 77.
10 Wild poliovirus occurs naturally in the environment. A vaccine-related form of the disease can be caused in rare circumstances by the oral polio vaccine.
12 A February 2016 CSIS delegation to India will report on contributions polio assets have made to the country’s other health activities.
particular focus on using them to improve routine immunization. Micro-planning and supervision methods that helped identify which children were being missed by polio campaigns and devised methods for reaching them are now being used to improve coverage for other vaccines.\textsuperscript{13} Further, the government increasingly is assuming support for disease surveillance: in 2015, government officers investigated 93 percent of cases of paralysis, compared to 35 percent in 2009. WHO surveillance medical officers continue to provide quality assurance.\textsuperscript{14}

In addition to encouraging countries to develop transition plans, the GPEI also is urging international organizations not directly involved in polio eradication, such as Gavi, the Vaccine Alliance, to think through how polio-supported resources—such as personnel and cold chain capacity—might be used to support their programs. It also is urging major donors to the GPEI, including the United States, to develop legacy-planning strategies.

To mitigate potential health service disruptions, the GPEI has called on polio-free countries to finalize transition plans by the end of 2016.\textsuperscript{15} The GPEI is calling on ministries of health to appoint and chair a governing body to make transition decisions. It also asked them to designate a coordination and oversight team to manage the activities of transition planning including mapping all polio assets, documenting lessons learned, and developing strategies for mainstreaming needed polio-related functions and discontinuing others.\textsuperscript{16} The initiative is placing special emphasis on completing legacy planning for countries, including Ethiopia, that have the highest level of polio-related resources.\textsuperscript{17} Ethiopian government officials must take the lead in ensuring the country does not lose critical health services functions as polio funding declines.

The United States also has a role to play. Ethiopia is among the top 10 recipients of U.S. foreign assistance. For fiscal year 2016, the United States plans to provide Ethiopia with $404 million in total aid. Of that, $324 million, or 80 percent, is devoted to health activities.\textsuperscript{18} While total U.S. aid to Ethiopia has fallen over the last six years, the health account has remained relatively stable (see Table 1). Among aid provided to the country is $3.3 million earmarked for activities related to polio eradication. While polio funding has been used effectively to increase polio immunization and monitor for disease outbreaks in Ethiopia it also has, as in other countries, contributed to the provision of broader services, especially those related to immunization and disease surveillance.

\textsuperscript{13} Bristol, \textit{Repurposing Polio Eradication's Toolkit}.
\textsuperscript{16} Ibid.
\textsuperscript{17} GPEI, \textit{Polio Eradication & Endgame Strategic Plan 2013–2018}, 53.
Table 1. Planned Annual U.S. Funding to Ethiopia

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expenditure (US$ millions)</th>
<th>Total Health Expenditure (US$ millions)</th>
<th>Health Expenditure as % of Total</th>
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<td>2014</td>
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<tr>
<td>2015</td>
<td>504.4</td>
<td>324.5</td>
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</tr>
<tr>
<td>2016</td>
<td>403.8</td>
<td>323.6</td>
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</tr>
</tbody>
</table>


Ethiopia Struggles to Provide Health Services to Pastoralist/Border Areas

Ethiopian leaders are determined to enhance health services available to the country’s diverse and sometimes scattered population, and have made considerable progress in doing so. Health indicators have improved dramatically over the last decade, especially for children, and Ethiopia’s Health Extension Program has created a model method for boosting community-based primary care in the country. Yet, as a low-income country ranked 174th out of 188 in the human development index, Ethiopia struggles to ensure the provision of quality health services to its primarily rural population. Contributing to the problem, many areas lack sufficient road, electricity, communication, and health services infrastructure along with qualified health personnel. The Health Extension Program, while improving the health situation in many areas, has been less successful in regions with higher percentages of largely nomadic pastoralist populations. Challenges include an overburdened workforce with a high turnover rate. To increase the pool of health workers, the government reduced educational requirements in some areas. While health workers in other regions were required to have a 10th-grade education, the level was lowered to 4th grade in pastoralist areas where there is less access to education. In addition, officials struggle to address cultural barriers to improved health among the more than 70 ethnic groups the country encompasses. Ethiopian officials outlined an ambitious plan in October 2015 to address many of those challenges, but will need to increase its own health expenditures and rely on continued support from health and development partners, including the U.S. government, to meet the goals. The most recent

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21 Yung-Ting Bonnenfant, Pastoral Landscape Analysis: To Inform the Design of USAID/Ethiopia’s Five Year Approach to Ending Preventable Child and Maternal Deaths, February 4, 2015, 16.
health accounts document shows Ethiopia’s health spending at $21 per capita, well below the $60 per capita cited by WHO. International donors to the health system currently supply nearly half of the country’s $1.6 billion in annual health expenditures while households pay 34 percent. The government contribution is 15.6 percent.

Its experiences with poliovirus illustrate Ethiopia’s struggles with disease prevention and control. While Ethiopia saw its last case of indigenous wild poliovirus in December 2001, it has been subject to repeated outbreaks caused by imported virus from its neighbors. Ethiopia borders several countries, including Somalia and Sudan, which have a history of ongoing conflict and poor health services. Further, extremists in Somalia have banned humanitarian aid, including polio campaigns in some areas, and the country contains the largest known reservoir of unvaccinated children in the world—one million children under five. Mobile populations move frequently across Ethiopia’s borders, bringing polio and other diseases with them. Ethiopia had poliovirus outbreaks in 2004, 2005, 2006, and 2008 via importations from Somalia and Sudan. Most recently, an outbreak began in the region in 2013 through a virus importation from West Africa to the Banadir region of Somalia. It spread to the other areas in Somalia and then to Ethiopia and Kenya. A total of 223 children were paralyzed in 2013 and 2014, including nine in Ethiopia in 2013 and one in 2014. The outbreaks in Ethiopia and Kenya were declared officially over in June 2015 and in Somalia in October 2015. WHO credited Ethiopia’s success to the government’s commitment and implementation, with the help of international partners, of 18 mass immunization campaigns since the beginning of the outbreak, as well as intensified surveillance. More campaigns are planned for the coming months. Despite the success, WHO warned that immunity gaps in the Horn of Africa leave countries there vulnerable to additional outbreaks.

In addition to outbreaks of wild poliovirus disease, Ethiopia and other countries in the region also have experienced cases of circulating vaccine-derived poliovirus (cVDPV), disease caused by the oral polio vaccine in areas with low population immunity and poor routine immunization coverage. Ethiopia had 10 recorded cases of cVDPV in the 2008–

27 Ibid., 28.
28 Ibid., 4.
31 GPEI, “Ending an Outbreak.”
34 Ibid.
The intensive surveillance capacity of the polio program is able to track cVDPVs and other poliovirus cases as they move across borders, but it is equally likely that other diseases are making the journey into Ethiopia as well, making a strong immunization and surveillance system an imperative for the country.

The government of Ethiopia is providing vaccines for 10 childhood diseases, including four new vaccines in the last several years, but notes that the program is “challenged with dropouts [children who do not receive all the shots needed for full immunization], shortage of supplies, vaccine stock outs and cold chain breakages.” In fact, although the government reports levels of overall coverage reaching 85 percent to 91 percent for various vaccines, the country has been plagued with outbreaks of vaccine-preventable disease, particularly measles. WHO said early this year that Ethiopia had the highest number of suspected (16,028) and confirmed (14,100) measles cases in Africa in 2014. Outbreaks continued in 2015. The worst-hit regions were Oromia, Amhara, and Gambella, pastoralist regions that have been hardest for the government to reach with health services. Data show that in the predominantly pastoralist Afar region, nearly half of children 12–23 months old had received no vaccinations. The rate in Somali region was 35.4 percent, compared to 14.5 percent nationally. Deaths of children under 5 years old in Ethiopian regions with larger pastoralist populations often exceed the national average of 88 per 1,000 live births. Complicating the provision of health services are high rates of malnutrition, low rates of health-seeking behavior, and inadequate health infrastructure.

While supporting the immunization system overall, U.S.-funded polio program resources are most highly concentrated in Ethiopia’s border and pastoralist areas where the health situation is most challenging. Polio funding to Ethiopia through CDC totaled $334,000 in fiscal year 2015. The funding provided salary support for a data manager, a logistics officer, and an immunization program team lead.

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36 Vaccines included immunization against diphtheria, tetanus, and pertussis, hepatitis B, Haemophilus influenza type B, tuberculosis, meningitis, measles, pneumonia, and rotavirus.
38 Ibid.
39 The accuracy of Ethiopia’s health statistics is a concern among donors and other stakeholders. A 2014 Internal Ministry document (Federal Ministry of Health Policy Plan Directorate, “Routine Data Quality Assessment Preliminary Report,” June 2006—Ethiopian Calendar) shows significant over-reporting of vaccine coverage rates in many areas. Improving the reliability of immunization rate and other health data is a priority for the Ethiopian Health Ministry as outlined in the *Health Sector Transformation Plan*.
41 Ibid.
42 The accuracy of Ethiopia’s health statistics is a concern among donors and other stakeholders. A 2014 Internal Ministry document (Federal Ministry of Health Policy Plan Directorate, “Routine Data Quality Assessment Preliminary Report,” June 2006—Ethiopian Calendar) shows significant over-reporting of vaccine coverage rates in many areas. Improving the reliability of immunization rate and other health data is a priority for the Ethiopian Health Ministry as outlined in the *Health Sector Transformation Plan*.
43 These areas include Somalia, Afar, and parts of Oromia, SNNP, and Gambella.
45 Author communication with Tanya Hart, evaluation fellow, Centers for Disease Control and Prevention, October 16, 2015.
USAID’s $3 million in annual Ethiopian polio program funding is split between the World Health Organization ($1 million) and the CORE Group Polio Project ($2 million), run by a consortium of primarily U.S.-based NGOs staffed by local personnel.46 U.S. funding to WHO helps support disease surveillance, supervision, routine immunization strengthening, and polio vaccination campaigns (see Figure 1).

**Figure 1. Location of WHO Polio-Funded Staff in Ethiopia**

![Map of WHO polio-funded staff in Ethiopia](image)

Source: WHO Ethiopia EPI Team, presentation, 2015.

WHO provides technical assistance nationally, and then focuses resources in the border areas of Somali, Afar, Benishangul-Gumuz, Southern Nations, Nationalities, and People’s Region (SNNPR), and Oromia. WHO funding supports 10 surveillance medical officers who work with health facilities to monitor for polio, measles, and neonatal tetanus.47 Another 40 immunization officers conduct routine immunization activities as well as polio eradication. An additional 75 WHO staff were deployed to conduct surveillance and immunization activities during the recent polio outbreak.48 Overall polio funding to Ethiopia jumped from $18 million in 2013 to $36 million in 2014 to help address the outbreak, dropping to $26 million in 2015.49 As the “surge” funding continues to decline,

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48 Ibid.
so will support for surveillance officers, particularly in the Somali region, a situation that foreshadows how surveillance and other health capacities will decline as polio funding diminishes.

Working in Ethiopia since 2001, the CORE Group Polio Project includes Catholic Relief Services, the International Rescue Committee, CARE, World Vision, and Save the Children International among its 10 partner organizations.\(^50\) CORE Group works exclusively in the border areas and provides an important link between the GPEI partners and day-to-day operations on the ground (see Figure 2).

**Figure 2. CORE Group–Ethiopia Operational Zones**

*Shaded areas represent CORE Group Ethiopia operational zones.

The group is on its third project period in Ethiopia, which runs from 2012–2017.\(^51\) CORE helps train vaccinators and supervisors. It also identifies and helps address health services gaps that can hinder effective vaccine coverage. For example, it contributes to cold chain support, including fuel and refrigerator maintenance, and provides vehicles

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to transport vaccine and personnel to vaccination sites. Working through Ethiopia’s Health Extension Workers, CORE Group provides training that promotes routine and polio vaccination through advocacy meetings, health education discussions, and social mobilization activities. It also trained a cadre of nearly 8,000 health workers and community volunteers to conduct health education campaigns and contribute to community-based surveillance by monitoring for cases of paralysis, maternal and neonatal tetanus, and measles.\textsuperscript{52}

CORE Group operates in a secretariat model, which means that all the NGOs involved coordinate through a central organizational structure. Advantages to this approach include rapid and standardized information dissemination from the government and GPEI partners to the NGOs and a single entity representing the groups at higher-level meetings. The CORE Group director is well known among regional- and national-level government officials and represents NGO viewpoints and concerns, which often are the most reflective of on-the-ground realities. With more than a decade of operations in Ethiopia, the CORE Group Polio Project has become a stable and trusted partner to the Ethiopian health system.

\textbf{CORE Group in Benishangul-Gumuz}

CORE’s work in the western border region of Benishangul-Gumuz shows how NGOs supported through U.S. polio funding add important health infrastructure to an underdeveloped region. Benishangul-Gumuz has poor transportation and communications systems and weak health services. Its mortality rate for children under 5 was the highest in the country in the latest Demographic and Health Survey (2011) at 169 per 1,000 live births.\textsuperscript{53} The region is largely home to agrarian or pastoralist communities representing several different ethnicities, languages, and religions. CORE Group supervisors have long-standing relationships with regional and local health officials. They train and monitor government health workers in the region to improve health education dissemination and immunization practices. Health Extension Workers travel house-to-house to monitor for disease, forming the front line of community-based surveillance programs. They refer complex patients and feed surveillance findings to a nearby health clinic.

Several of CORE’s member NGOs work in Benishangul-Gumuz, dividing their duties among different villages. Under the CORE Group Polio Project, World Vision covers four districts with a total population of 242,000.\textsuperscript{54} It conducts health worker training covering immunization practices, cold chain maintenance, and newborn tracking procedures. For both routine immunization and polio campaign activities, it provides spare parts and

\begin{flushleft}
\textsuperscript{52} Author communication with Filimona Bisrat, director, CORE Group Polio Project Ethiopia, January 18, 2016.
\textsuperscript{54} Author communication with Filimona Bisrat, director, CORE Group Polio Project Ethiopia, January 18, 2016.
\end{flushleft}
tires for motorbikes to transport personnel and supplies. It also pays for fuel for vehicles and kerosene to run refrigerators critical to cold chain maintenance.\footnote{55 World Vision, “WVE, BG CPO.CGPG progress Highlight Report,” PowerPoint presentation, October 30, 2015.}

Data compiled by World Vision show its work contributing to increases not only in polio immunization coverage, but also to immunization for other diseases, including measles. In four districts, data show the percentage of fully immunized children increasing by 5–28 percentage points between 2013 and 2015.\footnote{56 Ibid.} House-to-house surveillance activities monitored for neonatal tetanus in addition to polio and identified 84 suspected cases of measles.\footnote{57 Ibid.}

### Polio Assets Contribute to Other Health Activities

As the World Vision example shows, while focusing primarily on polio-related activities, Ethiopia polio-funded staff and resources both at the CORE Group and through WHO also contribute to broader immunization and health programs. Surveys conducted in 2014–2015 by the Boston Consulting Group found that while polio-funded personnel in Ethiopia reported spending 44 percent of their time on polio-related activities, they also devoted 21 percent to measles and rubella activities (vaccination campaign support, case surveillance), the highest of any of the 10 countries included in the study.\footnote{58 Boston Consulting Group, “Polio funded personnel’s involvement in routine immunization and broader immunization goals,” May 2015, 10.} They also spent an additional 17 percent on activities related to routine immunization (capacity building, monitoring and supervision of immunization sessions, data management and analysis, design/implementation of communalizations strategies). Other activities included new vaccine introduction, participating in child health days, maternal newborn and child health, and natural disaster aid.

Consultations with WHO and USAID staff involved with the polio program indicated that polio personnel and resources supported the Ethiopian government’s infrastructure for disease surveillance and response, especially at the regional and local level. Polio resources are fully integrated into routine immunization and other public health programs and are providing valuable lessons to other programs in laboratory specimen transportation, integrated training, and supervision.\footnote{59 Kathleen Gallagher, WHO Ethiopia, Monitoring and Evaluation, “Polio Legacy Planning in Ethiopia,” PowerPoint presentation, October 22, 2015.}

In examining which of Ethiopia’s polio-funded assets were the most valuable, staff cited:

- Relationships with existing community structures including local Ethiopian health workers for social mobilization planning and campaign support for polio and routine immunization;
- Expansion of measles laboratory capacity in the regional capitals of Bahir Dar and Hawassa;

\footnote{55 World Vision, “WVE, BG CPO.CGPG progress Highlight Report,” PowerPoint presentation, October 30, 2015.}

\footnote{56 Ibid.}

\footnote{57 Ibid.}

\footnote{58 Boston Consulting Group, “Polio funded personnel’s involvement in routine immunization and broader immunization goals,” May 2015, 10.}

\footnote{59 Kathleen Gallagher, WHO Ethiopia, Monitoring and Evaluation, “Polio Legacy Planning in Ethiopia,” PowerPoint presentation, October 22, 2015.}
• Polio infrastructure and personnel who supported outbreak control, strengthening of routine immunization, and national and community-based disease surveillance;

• Use of integrated personal digital assistant (PDA) checklists by WHO officers to monitor field activities and provide supervision for a range of immunization activities;

• Strengthening social mobilization platforms/networks;

• Success in establishing cross-border meetings and synchronization;

• Establishment of permanent vaccination sites; and

• Supporting complicated outbreak response activities in the Somali region.60 61

These assets are at risk as program funding decreases. Specific assets that could be lost without a transition plan in place include WHO surveillance officers, CORE Group supervisors, community-based surveillance initiatives that focus on hard-to-reach areas, district-level immunization planning support, cross-border coordination, and immunization technical assistance.62 Continuing and even expanding these resources is paramount, especially given Ethiopia’s ongoing struggle to provide adequate immunization coverage and its particular vulnerability to disease outbreaks.

Polio Assets Help Achieve Both Ethiopian and U.S. Global Health Goals

U.S.-funded polio assets provide important health system support in Ethiopia and have contributed to the country achieving Millennium Development Goal 4, related to child mortality reductions. They also have the potential to contribute to future improvements, including those called for in the Ethiopian government’s five-year Health Sector Transformation Plan released in October 2015.63 The overarching themes of the plan are improving health care quality and equity. Particular goals include reducing under-5, infant, and neonatal mortality rates.64 Another focus is improving health emergency risk management, which involves improving disease surveillance. U.S. polio-funded assets provide valuable tools for addressing those issues. The resources can help improve the quality of vaccine services by providing technical assistance to ensure vaccines are delivered correctly and at recommended intervals. U.S. polio-funded resources also address equity since they are concentrated on the hardest-to-reach, most disadvantaged

62 Ibid.
63 MOH, Health Sector Transformation Plan.
64 Ibid., 13.
populations in the country. Enhanced immunization services, such as those fostered by polio-related assets, reduce child mortality rates.

Improved child health and global disease surveillance are also high-profile global health goals for the United States. USAID is spearheading a global campaign to end preventable maternal and child deaths. Ethiopia is a country leader in the endeavor along with the government of India. Increasing immunization coverage is one of the key interventions cited in the effort.65 The agency also focuses programs on protecting communities from infectious disease and reaching underserved population.

Improving global immunization rates is also an important goal for CDC. In addition to ensuring global polio eradication, the agency’s draft Strategic Framework for Global Immunization, 2016–2020 calls for eliminating measles and rubella virus transmission, developing and implementing goals related to other vaccine preventable diseases, and strengthening immunization and health systems.66

Ethiopia and the United States also share goals related to disease surveillance and response. The Ethiopian government is a partner in the Obama administration’s Global Health Security Agenda (GHSA), an effort to accelerate progress toward global disease prevention, detection, and response capabilities. The GHSA program has developed 11 “action packages” contributing toward different aspects of global health security. Ethiopia plans activities in most of the action packages with priority focus on four: enhancing national laboratory capacity; improving disease surveillance systems; workforce development; and establishment of a public health emergency operations center to improve coordination of disease response efforts.67 As part of the effort, CDC in September awarded $2.225 million to the Ethiopian Public Health Institute to strengthen emergency management and establish emergency operations centers, strengthen laboratories, improve surveillance systems, and engage in workforce development.68

The Challenges of Planning Polio Asset Transitions

Although polio assets support both Ethiopian and U.S. health goals, and there is broad recognition that losing them would be a waste of valuable health resources, ensuring a thoughtful transition is likely to be a challenge. It will involve keen commitment from government officials as well as representatives of major donors and GPEI partners. In discussing potential obstacles, WHO staff listed:

- Numerous competing immunization activities that have more urgency;
- Lack of technical capacity to take on this additional complex task;

68 Author communication with Adam Brush, team lead, Office for the Associate Director for Policy, Center for Global Health, Centers for Disease Control and Prevention, October 15, 2015.
• Significant risk that critical activities supported by the polio program will be negatively affected without careful post-eradication planning; and

• Tough decisions that need to be made about which elements of the program are worth transitioning, how they will be paid for, and how long-term sustainability can be assured.⁶⁹

Ethiopian government officials indicated that the polio program’s primary contributions to the health system are in human resource development, surveillance, mass vaccination campaigns, and developing cold chain capacity. They confirmed that polio assets already are contributing to broader immunization and health education efforts in the country’s pastoralist and agrarian regions where a significant number of children remain unvaccinated. Continuing to build routine immunization and surveillance capacities is a national priority, they said, and additional work is needed particularly at the community level in hard-to-reach areas and with a focus on improving maternal and child health.

Officials said the government will be forming a technical committee in 2016 to examine its polio transition priorities. They also noted that health and development partner strategies must align with priorities of the Ethiopian government to have a sustained impact. While Ethiopia faces significant health system funding gaps and is likely to need the support of health and development partners for the foreseeable future, government officials should explore opportunities to fold polio assets securely into their health systems to ensure sustainable disease prevention and control capabilities.

Making the Most of Polio Assets: Recommendations to Policymakers

The U.S. is making a substantial investment in improving the health of Ethiopians and helping the government enhance capacities to prevent and respond to infectious disease. Polio-funded assets contribute toward priorities of the Ethiopian government, including improving equity and quality of health services and expanding disease surveillance and response capabilities. They also benefit the United States by improving global immunization and disease surveillance while contributing toward the long-time humanitarian goal of increasing child survival.

Despite the health advantages created by polio assets and desire among both the Ethiopian government and its international polio partners for them to continue, ensuring their successful transition will require concerted effort. Toward that end, we recommend the following:

1. To support rational planning by the Ethiopian government, USAID and CDC should jointly catalog their polio-funded assets in Ethiopia and document their respective contributions to health activities beyond eradication. Beyond physical assets, the agencies should document lessons learned through polio eradication.

⁶⁹ Gallagher, “Polio Legacy Planning in Ethiopia.”
and disseminate innovations—such as approaches for reaching remote populations—to other health activities. Further, U.S. personnel should actively encourage other polio donors to become involved in transition planning.

2. The Ethiopian government should take the lead in early 2016 in convening a polio asset transition planning process that explores first which assets Ethiopia can fund itself, thus ensuring government ownership and promoting sustainability. Most pressing is taking into the Ethiopian public health system those assets necessary to maintain population immunity for polio, ensure containment of polioviruses in facility settings, and continuing polio surveillance.

3. With the Ethiopian government in the lead, donors and international organizations should then negotiate continued support for polio assets deemed valuable to other health activities. Participants should include major polio program donors and international organizations, but also organizations not immediately involved in polio eradication yet active in related activities, such as immunization, child health, and disease prevention and control.

4. After a mutually agreed-upon polio transition plan is formulated, U.S. staff should work with the Ethiopian government to ensure its implementation. This will involve USAID and CDC determining how their funding streams currently earmarked for polio eradication can be altered to support polio assets deemed worthy of continuation. Many of the assets would appropriately fit into child health, immunization, and global health security programs, and achieving their transfer into those particular programs should be explored.

5. Planning for global transition of polio assets is an unprecedented undertaking and likely to be messy and complicated. While countries must take the lead, the GPEI and other global partners should offer thorough guidance along with technical and financial support to ensure success.

6. While the CORE Group is filling critical gaps in the immunization system—including cold chain maintenance and transportation—the system would benefit from a more holistic approach. With its focus on improved child health and quality of services, the Ethiopian government should consider enhancements to its immunization services to ensure the system is more comprehensive and reliable. For example, investments in sustainable cold chain equipment, such as solar refrigerators, could go a long way toward improving vaccine availability.

7. As the Ethiopian government is able to assume more polio resources itself, including surveillance capacity and laboratories, and as it expands its Health Extension workforce, WHO and CORE Group training and supervisory roles should be continued to provide external quality assurance. This will be especially critical in remote areas where health worker turnover is high and educational attainment of health workers is lower.
8. The CORE Group Polio Project provides a successful coordination and supervisory model that is capable of identifying and responding to challenges in hard-to-reach areas. Efforts should be made to keep the organization intact and expand its operations to other health activities at least until the Ethiopian government can fulfill its ambitious plans to improve health services’ equity and quality.

Successful Polio Asset Transition Will Be a Boon to Global Public Health

The global eradication of polio will be a major milestone for public health. While the endeavor has taken years longer and cost much more than originally planned, the eradication process has created a wealth of important health resources and capacities. For the full value of polio eradication to be realized, assets that can contribute to long-term polio-related activities and other health goals should be continued. Doing so would successfully capitalize on important collaborations developed through the initiative, ensure vital public health knowledge is properly retained and disseminated, bolster global immunization rates, and improve global disease surveillance. Legacy planning will occur on a country-by-country basis and be led by national health officials. U.S. government staff should support these efforts in Ethiopia and elsewhere as a way to fully leverage the substantial U.S. investments in global polio eradication and to further U.S. global health aspirations.
Appendix: Additional Readings on Polio Legacy


*For additional CSIS material on global polio eradication, please visit our website at http://csis.org/program/polio.*
Bolstering Public Health Capacities through Global Polio Eradication

Planning Transition of Polio Program Assets in Ethiopia

A Report of the CSIS Global Health Policy Center

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