Enhancing U.S. Leadership in a New Era of Global Immunization

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THE ISSUE
The U.S. government plays a leading role in supporting immunization services worldwide, an investment that helps increase global stability and prosperity while protecting Americans from potentially epidemic-prone diseases. While tremendous progress has been made in improving vaccine coverage, momentum has stalled over the last decade. New approaches are needed to reach populations that chronically lack access to health services and those in volatile and conflict-affected settings. The authors offer recommendations to enhance U.S. policy as key global immunization partners are developing new strategies to expand global vaccine coverage.

ENHANCING U.S. LEADERSHIP IN A NEW ERA OF GLOBAL IMMUNIZATION
Immunization is one of the most effective and cost-effective disease control and prevention tools. Recognizing the unprecedented power of vaccines, the U.S. government has long been a leading supporter of immunization programs around the world. This investment benefits the United States directly by preventing and controlling potentially epidemic-prone diseases at their source, thus protecting Americans at home and abroad. Immunizations also contribute to global stability and economic growth by improving health worldwide.

While global immunization coverage is at its highest level ever, rates have stalled over the last decade and even regressed in some places. New approaches are needed to jump start further progress. Expanded immunization coverage not only prevents disease and saves lives but is essential to the global push for improved primary health care, universal health coverage, and health security.

Key multilateral organizations, including Gavi, the Vaccine Alliance, and the World Health Organization (WHO), are spearheading development of new strategies to increase global immunization coverage. These organizations and the many countries they assist have been enormously successful in improving equitable access to immunization services. But additional advances will be especially challenging since they require reaching populations that have persistently lacked access to health services and finding ways to connect with those in volatile and conflict-affected settings. This new era of global immunization will require broader collaboration across a range of partners, as well as stronger commitment from country leaders at all levels, to move beyond siloed approaches to broad-based sustainable systems that provide comprehensive health services tailored to and endorsed by local communities.

Expanded immunization coverage not only prevents disease and saves lives but is essential to the global push for improved primary health care, universal health coverage, and health security.
As Gavi and the WHO consider their next steps, U.S. agencies are examining how best to continue and supplement their leadership roles, both directly with other countries and through multilateral organizations. To facilitate this process, GHPC in late July 2019 convened a roundtable of experts in immunization and related subjects. Based on participant input and their own analyses, the authors offer the following recommendations to policymakers on how best to marshal U.S. technical, policy, and financial resources toward enhanced U.S. leadership in global immunization:

- Support multilateral organizations
- Sustain U.S.-supported ground presence
- Reevaluate strategic approaches based on improved coverage data and novel vaccines
- Link disease-specific programs with systems-based, locally operated, and sustainable health services
- Foster innovation in all arenas
- Promote public understanding of the connection between immunization and health security
NEW TOOLS, NEW CHALLENGES
The WHO estimates that immunization currently prevents 2 to 3 million deaths each year. The $54 to $1 return on vaccination investments contributes to cognitive and productivity improvements, societal stability, and even global security. New tools promise further progress: vaccine candidates are in development for over a dozen pathogens; innovations in vaccine delivery will make it easier to administer vaccines in resource-poor settings; new data collection systems help to better pinpoint where additional attention and resources are needed; and new vaccine manufacturing approaches will speed availability and increase supply. An additional 1.5 million deaths could be prevented in future years if coverage is improved.

But there also are new challenges. Climate change, population expansions and movements, conflict, and hyper-urbanization increase the potential for disease outbreaks. Geopolitical shifts—including an inward turn in major donor countries—instability, and growing institutional distrust hamper both disease prevention and outbreak response. These strains are added to chronic immunization obstacles including lack of financing and national and local leadership, weak health systems, and ineffective management.

CRITICAL ALLIES IN GLOBAL IMMUNIZATION
Immunization support to low- and middle-income countries is provided through a partnership of multilateral organizations, donor countries, the private sector, and foundations. The United States supports global immunization both directly to countries through specialized agencies—principally the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Agency for International Development (USAID)—and by collaborating with other immunization partners.

Two primary U.S. immunization partners, Gavi, the Vaccine Alliance and the World Health Organization, are developing new 5-year and 10-year strategies, respectively.

Gavi brings together the public and private sectors to improve access to vaccines, especially new and underused products, in low-income countries worldwide. Since its inception in 2000, it has provided $16 billion in immunization support to 76 low- and middle-income countries, reaching more than 760 million people. The United States is an early, essential, and ongoing supporter of Gavi and has provided more than $2.2 billion to the organization since 2001. As a key donor, USAID is represented on the Gavi governance board and provides policy guidance and oversight to its secretariat. The CDC is also a core partner, represented on the board through the constituency of research, technical, and health institutions. Both help design, implement, and evaluate programs in the field. Since the Gavi Secretariat does not have in-country staff, the United States, the WHO, UNICEF, and other partners support country health systems to facilitate delivery and uptake of Gavi-funded vaccines.

As it looks to its next five-year strategic cycle, referred to as Gavi 5.0, the alliance is putting an increased focus on scaling up new approaches to increase equity in immunization. It will prioritize vaccine delivery to those now missing out, including zero-dose children, impoverished communities living in urban slums, and children in inaccessible conflict settings or remote rural areas. Further, it will focus efforts on strengthening health systems through a more targeted subnational approach, ensuring equitable coverage to all regions in each country. An increased focus on community engagement, implementation, and oversight of immunization programs will enhance local trust in vaccines.

The WHO’s immunization work for the past decade was based on goals developed for the Global Vaccine Action Plan (GVAP). GVAP was written by immunization experts in 2010 to accelerate progress in global immunization coverage. Its major goals were to eradicate polio; eliminate maternal and neonatal tetanus and measles and rubella; improve vaccination coverage; encourage the introduction of new vaccines and technologies; and reduce child mortality. While progress on the goals has been mixed, the GVAP served as an important rallying point to push for expanded immunization.

The WHO is now leading a coalition to develop the successor to the GVAP, called the Immunization Agenda 2030 (IA2030). This new strategy is intended as a framework to link all immunization partners with country- and disease-specific strategies. In an effort to enhance commitment to the resulting immunization goals, the WHO has greatly expanded opportunities for input into the document, soliciting public comments on drafts over the past few months. IA2030 will update the GVAP in several ways, including by emphasizing country-based strategies, highlighting the importance of subnational goals, and linking more directly with programs contributing to universal health coverage. In addition, IA2030 will delineate stronger accountability mechanisms and promote specific lines of responsibility within countries and across the WHO and other partners to align country, regional, and global efforts.

While there will be considerable complementarity between
Gavi 5.0 and IA2030, the strategies have different audiences and strategic directions. IA2030 is broader in scope and covers all vaccines and all countries. Its audience is ministers of health and other country-level leaders, as well as the broader international health community. Gavi 5.0 is focused on Gavi-eligible countries; its target audience is the Gavi Board and its network of partners.

The CDC’s core strengths include epidemiologic surveillance; laboratory capacity; data quality and analysis for systems strengthening; certification of disease elimination; research; and technical assistance, especially for capacity building and workforce development. CDC experts help countries and global organizations develop policy and guidelines, especially for outbreak response and prevention of international disease transmission.

The agency is in the process of developing a new immunization strategy to cover 2021-2030. The strategy will emphasize the CDC’s core strengths and comparative advantages in linking with the goals of IA2030. In addition to focusing on polio eradication, an initiative for which the CDC is a core international partner, the agency will prioritize building national immunization program capacities to expand vaccination coverage. The CDC’s work will focus particularly on countries with the most unvaccinated children and the highest disease burden.

While the CDC provides technical and policy support for specific diseases, USAID is one of the world’s leading government development agencies. It works more broadly to advance U.S. national security and global economic growth with an aim toward increasing country capacity and self-reliance. USAID’s work in immunization is conducted as part of a health systems approach, with routine vaccine delivery as the backbone of integrated, primary health services. Its greatest strength revolves around its efforts at the national, subnational and local levels, where it supports host-country programs through a wide network of public, non-government, and private partners. Programs focus on improving health among the poorest and most vulnerable communities in 25 countries.

Global immunization is a priority for the agency, with 40 percent of total funding appropriated for maternal and child health allotted to Gavi and polio eradication alone. The agency also provides funding for new technologies for vaccine delivery and invests in innovation.

Going forward, USAID will continue to tailor its work to hand.
its partner countries’ national immunization goals and global strategies to help immunization services become more accessible and reliable. USAID will continue to offer grants to accelerate successful maternal and child health programs at the local level; strengthen partnerships with other immunization partners to improve governance and align investments; and collaborate more with the WHO’s immunization department to guide strategic investments and help countries implement global and regional initiatives. It will continue to invest resources in routine immunization, focusing on areas with low coverage rates, such as poor urban and peri-urban districts. As it concentrates on improving governance, the agency is pushing for better understanding of accountability at the local, national, and global levels to strengthen routine immunization. It also is working to improve data quality and surveillance to inform evidence-based local programming. In the development of Gavi 5.0 and IA 2030, USAID supports the exploration of catalytic support to middle-income countries, implementation of more locally tailored approaches to reaching the unvaccinated, and a focus on immunizations across the life course.

RECOMMENDATIONS TO ENHANCE U.S. LEADERSHIP

To ensure continued U.S. leadership and collaboration toward global immunization goals, the authors, in conjunction with the immunization roundtable participants, recommended the following:

Support multilateral organizations: Gavi, the Vaccine Alliance, UNICEF, and the WHO are reliable, trusted providers of immunization support worldwide. The United States contributes critical technical and financial resources to all of them, enabling their work and allowing U.S. experts to help shape organizational goals and strategies. The United States should continue its leading role in these valuable multilateral organizations to create the broadest possible protection against epidemic-prone diseases and to increase global stability by improving health worldwide.

Ensuring availability and use of high-quality vaccines is a complex undertaking. The vaccine ecosystem requires qualified manufacturers, supply logistics, proper handling and storage protocols and equipment, a trained workforce, and safe administration and disposal. Reaching populations in areas with weak or no health infrastructure requires a network of partners that includes local health providers, national leadership and financing, civil society and humanitarian groups, and a web of supportive global organizations. Multilateral organizations focused on vaccine coverage harness the power of multiple donors, providing economies of scale for vaccine supply and pooling technical and policy expertise. The United States has long been a top financial supporter of key immunization organizations. Those investments leverage and strengthen U.S. bilateral
efforts and are essential to expanding vaccination coverage, especially in low-resource settings. A global partnership linking U.S. funding and expertise with multilateral partners helps provide the range of tools and expertise needed to reach all populations with life-saving vaccines.

**Sustain U.S.-supported ground presence:** Largely through the CDC and USAID, the United States plays a pivotal role in supporting national immunization systems in low-income countries. These long-standing in-country relationships with governments and local actors facilitate the work of multilateral organizations and allow the United States to help build self-sustaining country systems and rapidly identify and respond to potential health emergencies. Consistent, reliable funding is required to maintain these important connections, which are critical to increasing global immunization coverage.

At $11 billion a year, U.S. global health funding is less than 1 percent of total federal spending but produces outsized dividends. This funding supports the U.S. government’s substantial in-country staff, consisting of U.S. and locally employed technical personnel who engage with national ministries of health and use their collective expertise to strengthen local immunization delivery. This collaboration promotes goodwill, strengthens local leadership, and helps protect Americans from infectious disease by creating long-standing, trusted relationships with national health officials. As one example, U.S. in-country staff in Nigeria were able to work quickly with national officials to bring urgent attention to a potentially catastrophic Ebola outbreak in Lagos in 2014. Long-standing relationships with health officials helped engender a quick response to the threat, and the outbreak was halted with minimal loss.

**Reevaluate strategic approaches based on improved coverage data and novel vaccines:** While U.S. immunization policy has rightfully focused on children in the poorest countries, a more nuanced direction is now required to sustain and expand vaccination coverage. Some of the largest populations of the under- and unvaccinated are in middle-income countries grappling with health inequities as their economies grow. U.S. policy should support those governments and multilateral organizations as they develop vaccination delivery models that reach all populations, including adolescents and adults.

While a U.S. focus on low-resource countries should continue, efforts should also closely follow data and tailor support to where the largest vaccination deficits are occurring, regardless of a country’s economic status. New data collection and analysis tools allow for a more detailed and precise accounting of disease outbreaks and vaccine administration. U.S. health experts should develop strategies using outbreak and vaccination coverage data as their primary guide. Further, while most vaccinations are geared toward children, some new vaccinations, such as the HPV vaccine against the virus that causes cervical cancer, are primarily targeted at older children and adolescents. Promoting vaccination across the life course gives individuals more contact with their primary healthcare providers, strengthening the entire health system. Policy may need to be altered to ensure the most effective use of new vaccines.

**Link disease-specific programs with systems-based, locally operated, and sustainable health services:** The United States has long championed specific, top-down programs for individual diseases including polio, HIV, and malaria. While that approach has garnered significant advancements, further progress calls for improved national health infrastructure and a need for stronger local and community engagement. Toward that end, disease-specific approaches should be pursued in ways that strengthen national systems even as they address particular conditions. As global and national health leaders focus on primary health care and universal health coverage over the next decade, the United States should continue to support approaches that deliver an inclusive set of immunization and health services endorsed by local communities.

The President’s Emergency Plan for AIDS Relief, the President’s Malaria Initiative, and the Global Polio Eradication Initiative were all created by or are strongly supported by the U.S. government. While these programs have been extraordinarily successful in preventing illness and saving lives throughout the world, many work in parallel to national health systems. This has allowed the United States to better control funding and operations related to HIV and malaria. To move more toward comprehensive health services and country self-reliance, the United States should expand efforts to link programs with national health systems. The next era of global immunization will require working through national systems with an eye toward helping them improve management and financial sustainability. A key feature of that move will require involving local communities in determining a range of health services that address

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their daily needs. Experience with polio in Afghanistan and Pakistan and in responding to the Ebola epidemic in the Democratic Republic of the Congo shows that local distrust of outside health providers and a time-limited, single disease focus severely hamper prevention and response efforts. In addition, communities should be viewed broadly to include networks of all types including cyber communities, which can rapidly spread health messages and further either positive or negative reactions to health services.

**Foster innovation in all arenas:** New ideas in vaccine development and delivery, program management, community engagement, building trust in vaccines, communications, private-sector collaborations, financing, and other areas are essential to meeting global immunization goals. In particular, the United States should support innovative approaches to distributing vaccines and delivering immunization services in order to ensure that existing and new products reach the most remote and hard-to-reach communities. To address leadership and management capacity deficits, the United States should explore new avenues, including through multilateral organizations, to encourage transparency, accountability, and good management practices that engage health economists and ministers of finance to develop solid investment cases and secure sustainable financing.

While new techniques and products in manufacturing and service delivery are essential to improving vaccine coverage in low-resource areas, the United States should encourage innovation in all areas of immunization. For example, grants to facilitate private-sector collaboration, including with civil society organizations, could pull that valuable but underused sector more into the immunization architecture. Models such as the International Finance Facility for Immunization and the Global Financing Facility for Women, Children, and Adolescents are essential and could catalyze greater support for delivery and management systems. Expertise and new ideas outside of traditional immunization partners are needed to achieve further advancements in vaccination coverage. More focus on creative ways to improve program performance, operations, and management would also provide a critical boost to immunization system strengthening.

**Promote public understanding of the connection between immunization and health security:** The CDC and USAID provide a public health approach to immunization which emphasizes maternal health and ending preventable child deaths. Both agencies also support the Global Health Security Agenda, a key tenet of which is broad global immunization coverage. Given the current political climate, both agencies should better link these two arms of their work and encourage greater understanding of the effects of global health on the health and security of Americans.

The global community is entirely interconnected. This is especially true in health. Given the volume and speed of international travel in the modern age, outbreaks anywhere can affect Americans at home and abroad. The current worldwide spate of measles outbreaks globally and in the United States is a prime example. The U.S. government’s Global Health Security Strategy recognizes the critical role that immunization and related disease surveillance plays in preventing and controlling potentially epidemic-prone diseases. While U.S. efforts to improve maternal and child health are laudable, many Americans today are more focused on domestic concerns. Better illustrating the link between global and U.S. health is critical to better understanding, support, and funding for U.S. global health activities.

**ENSURING HEALTH SECURITY THROUGH A NEW ERA OF GLOBAL IMMUNIZATION**

Broad-based, accessible immunization provides a healthier, more stable world. Global organizations are providing new energy and focus on ensuring life-saving vaccines are available to everyone, everywhere. The United States provides critical funding, policy guidance, and technical expertise to the endeavor and should continue and enhance its leadership role in improving vaccine coverage. While there are daunting challenges ahead, there are also innovative tools and ideas that will aid national and global leaders to develop reliable, self-sustaining immunization systems to reach all populations. U.S. policymakers should champion support for global immunization to promote a healthier, more productive world and to enhance global health security.
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ENDNOTES


10. For more information on the specific links between climate change and rising malaria epidemics, visit: Bradfield Lyon et al., “Temperature Suitability for Malaria Climbing the Ethiopian Highlands,” Environmental Research Letters 12, no. 6 (June 2017), https://doi.org/10.1088/1748-9326/aa6466; For information on the impact of climate change on dengue, chikungunya, and Zika, visit: Sadie J. Ryan et al., “Global Expansion and Redistribution of Aedes-Borne Virus Transmission Risk with Climate Change,” PLOS Neglected Tropical Diseases 13, no. 3 (March 2019), https://doi.org/10.1371/journal.pntd.0007213.


20. “Gavi, the Vaccine Alliance Board,” Gavi, the Vaccine Alliance, June 6, 2018, https://www.gavi.org/about/governance/gavi-board/.

21. The CDC is a member of Gavi’s Partners’ Engagement Framework, which clarifies the strengths and responsibilities of each alliance partner to better target Gavi funding. The PEF uses joint appraisals across a range of in-country partners to determine local needs and bring in a bottom-up approach to technical assistance planning. It channels funding to either targeted country assistance, strategic investments (in supply chain, data, or sustainability), and support to global and regional implementing partners. “Partners’ engagement framework,” Gavi, the Vaccine Alliance, https://www.gavi.org/support/pef/. Also see https://www.gavi.org/library/news/gavi-features/2017/engaging-partners-for-success/ for additional clarification.


26. Ibid.

27. While other U.S. government departments and agencies, including the National Institutes of Health, the Food and Drug Administration, and the Department of Defense, are engaged with global immunization activities in various ways, this paper focuses on those most involved with in-country program implementation and vaccine delivery.

28. The CDC and USAID each have a set of priority countries where they focus their immunization work. USAID works in 25 countries through its maternal and child health program: “Priority Countries,” USAID, July 19, 2019, https://www.usaid.gov/global-health/health-areas/maternal-and-child-health/priority-countries. The CDC works in seven priority countries: Afghanistan, Democratic Republic of the Congo, Ethiopia, India, Indonesia, Nigeria, and Pakistan, which include the 3 polio endemic countries and account for over 50 percent of unvaccinated children and 75 percent of measles deaths globally. They also work in 28 additional “tier 2” countries.

30. “Priority Countries,” USAID.


