

US investments in global immunization

Leading efforts to improve health for the world's most vulnerable populations

The challenge

Vaccines save 2.5 million children's lives every year and are among the most cost-effective health interventions,¹ with an economic return of 18 to 30 percent.² For its part, the United States has a deep history of leadership in immunization through multilateral and bilateral support—both of which play a complementary role. These investments cover a full range of immunization activities as part of a package of essential services that are critical to promoting the health of women, children, families, and communities across the globe.

Despite such investments, in 2008 the World Health Organization (WHO) estimated that 1.5 million deaths among children under the age of five were due to diseases that could have been prevented by vaccines.³ It is important for the United States to maintain its existing commitments and activities in global immunization to continue to address these challenges.

US multilateral support

GAVI Alliance

The GAVI Alliance was launched in 2000 to fund vaccines for children in the world's 70 poorest countries. Over the past 12 years, **GAVI's support to these countries has ensured that an additional 370 million children have been immunized against deadly diseases, and 5.5 million deaths have been prevented.**⁴ In 2011, GAVI launched a new ambitious goal of immunizing 250 million more children against life-threatening diseases, including targeting pneumonia and diarrhea, by 2015 and preventing 4 million premature deaths. The United States, both at the leadership level of the Administration and Congress on a bipartisan basis has expressed strong support for GAVI's mission and goals.

United Nations Children's Fund

The United Nations Children's Fund (UNICEF) is the largest buyer of vaccines in the world. UNICEF works with governments, partners, and communities to increase demand for immunization, establish better cold chain and logistic systems, procure vaccines at affordable prices while maintaining a healthy market, and design approaches to "reach the unreached." In addition, UNICEF procures vaccines for GAVI and also buys all vaccines and related supplies for global campaigns. **In 2012, UNICEF procured close to 2 billion doses of vaccine and more than 500 million syringes—reaching 36 percent of the world's children.**¹

World Health Organization

WHO's work in immunization covers a range of activities, including research and development, strengthening routine programs to reach unimmunized populations, improving national capacity to introduce new vaccines, and immunization system strengthening. Additionally, WHO convenes a number of technical advisory groups that recommend evidenced-based policies for immunization.

Since the launch of WHO's Expanded Programme on Immunization (EPI) in 1974, **millions of deaths have been prevented every year by delivery of infant immunization through national immunization programs.**⁵ WHO also supports immunization programs for threats to both children and adults, like meningitis A.

Immunization facts

- Immunization prevents between 2 to 3 million deaths every year.
- More than 1 million infants and young children die every year from pneumococcal disease and diarrhea caused by rotavirus; a large number of these deaths could be prevented through vaccination.
- Worldwide, 22 million children under the age of five remain unimmunized.

SOURCE: WHO

US bilateral support

US Agency for International Development

The US Agency for International Development (USAID) has provided technical and commodity assistance to more than 100 countries in support of national child immunization programs. This assistance has been directed at increasing demand for immunization services, training health workers, strengthening planning capacity, improving the quality of services delivered, and upgrading vaccine logistics. USAID also invests in vaccine research directed at major killers of children, as well as global threats such as malaria and HIV. To help end preventable child deaths from pneumonia and diarrhea, USAID is supporting the introduction of new vaccines, such as pneumococcal and rotavirus vaccines, to children most in need.

Thanks to USAID and partner support, **more than 100 million children receive a set of basic immunizations each year**, and tens of millions more receive supplemental immunizations against polio, measles, and other killer diseases.

US Centers for Disease Control and Prevention

The US Centers for Disease Control and Prevention's (CDC's) Center for Global Immunization Division provides technical assistance and surveillance support to country ministries of health, with a focus on eradicating polio, reducing measles deaths, and strengthening routine vaccine delivery. The CDC's global health work is also rooted in rigorous science and effective partnerships. As a key partner in the Measles and Rubella Initiative, the CDC supported vaccinations for children against measles, **which led to a 71 percent reduction in measles infections deaths worldwide, from an estimated 548,000 deaths in 2000 to 157,000 in 2011.**⁶ Also, as a lead scientific agency for US government efforts toward global polio eradication, the CDC has contributed significantly to the more than 99 percent decline in polio cases: from more than 350,000 cases reported annually in 1988 to 233 cases reported in 2012.

US National Institutes of Health

The National Institutes of Health (NIH) engages in global health throughout all of its 27 institutes and centers. The National Institute for Allergy and Infectious Disease (NIAID) has played a pivotal role in researching vaccines for dengue fever, malaria, tuberculosis, and other diseases. For example, NIH has developed various dengue vaccine strains that have been licensed to manufacturers and show promising results for new vaccine candidates in the near future. Additionally, the Office of AIDS Research conducts pivotal research, the Fogarty International Center provides support to vaccine researchers, and the new National Center for Advancing Translational Science translates promising vaccine technologies into products.

US Food and Drug Administration

The Food and Drug Administration (FDA) regulates a wide variety of products, including vaccines and vaccine delivery technologies. In addition to regulating vaccines produced in other countries and used in the United States, the FDA works with less experienced countries to build their capacity to regulate the development and production of vaccines in their own countries. Experts from the FDA's Center for Biologics Evaluation and Research (CBER) serve as mentors within the African Vaccine Regulators Forum to help developing countries monitor vaccine clinical trials in their

countries and assess vaccine clinical data to determine whether to license vaccines for use. During the 2009 influenza pandemic, the WHO called upon CBER to be the "Reference National Regulatory Authority" for five influenza vaccines under review, four of which CBER approved within three months. Scientists from CBER were also instrumental in developing an affordable vaccine against meningitis A—the first vaccine ever developed specifically for Africa.

US Department of Defense

The US Department of Defense (DoD) works to safeguard and improve civilian and military health in areas where troops may be deployed and **has participated in the development of one of every four vaccines approved by the FDA in the last century.** DoD conducts research into developing new vaccines for global health threats like malaria and HIV. The US Military HIV Research Project led the first HIV vaccine clinical trial to provide proof that a vaccine could prevent HIV infection, which showed a reduction in the risk of HIV infection in humans and reinvigorated the global search for an HIV vaccine. Early research at the Walter Reed Army Institute of Research contributed to the development of the first-ever effective malaria vaccine candidate. The Defense Threat Reduction Agency is conducting groundbreaking work on vaccine thermo-stabilization. The DoD is also a world leader in neglected tropical disease vaccine research and development.

¹ World Health Organization (WHO), United Nations Children's Fund (UNICEF), World Bank. *State of the World's Vaccines and Immunization, 3rd ed.* Geneva: WHO, 2009.

² Bloom, D., Canning, D., and Weston, M. The value of vaccination. *World Economics*. 2005; 6 (3): 15-39.

³ Black, et al. Global, regional and national cases of child mortality in 2008: a systematic analysis. *The Lancet*, 2010; 375, (9730): 1969-1987.

⁴ WHO Department of Immunization, Vaccines and Biologicals. *Estimates and projections*. November 2011

⁵ WHO Immunization Website. Available at: <http://www.who.int/immunization/delivery/vaccines/en/>. Accessed April 15, 2013.

⁶ Centers for Disease Control and Prevention. *Global control and regional elimination of measles, 2001 – 2011*. MMWR, 2013; 62: 27-31

