



POLIO ERADICATION ...

Why It Matters. Every child deserves the right to walk, run, and play without fear of paralysis due to infection with polio virus. Although polio is largely unknown in industrialized nations, it is a disease that still robs children of that right in other parts of the world. It is transmitted via contaminated water and food supplies, enters through a child's mouth, and then multiplies in the throat and intestines. In a matter of hours, the poliovirus can enter the brain and spinal cord, destroying the cells that enable muscles to contract and causing paralysis. In 5% to 10% of cases, the child dies.

The good news is that polio is completely preventable. Since the virus only infects humans and cannot live long outside the human body, the proper immunization of children can not only prevent the disease, it can eradicate it by stopping transmission of the virus. Although polio currently circulates in only a few countries, it is a highly infectious disease and spreads rapidly. As long as polio threatens even one child anywhere in the world, children everywhere are at risk. Only the complete eradication of polio will ensure that no child ever again suffers polio's cruel effects.

Rotary's Role. Rotary International is an organization of business, professional and community leaders with 1.2 million members worldwide in more than 200 countries and geographic regions. Since 1985 Rotarians have served as grassroots mobilizers for polio eradication, motivating international groups, governments, private organizations, communities and individuals to join the global effort to rid the world of polio. Rotary works with partners in the Global Polio Eradication Initiative (GPEI), including the World Health Organization (WHO), the US Centers for Disease Control (CDC), United Nations Children's Fund (UNICEF), the Bill & Melinda Gates Foundation and the governments of the world to achieve this important public health goal. As part of that effort, Rotarians raise funds, advocate for government support, serve as volunteers to help immunize children, and raise awareness in their communities. As indicated by the "plus" in PolioPlus, Rotarians also provide support for related health services, such as distributing Vitamin A, zinc tablets and providing bed nets to prevent the spread of malaria.

How We Achieve It. The GPEI works to interrupt transmission of the wild polio virus by pursuing the four pillars of eradication:

1. **Routine immunization** – Immunization coverage of more than 80% of children in the first year of life, with at least three doses of the oral polio vaccine as part of national immunization schedules.
2. **Supplementary immunization activities** – Mass immunization campaigns, known as National Immunization Days (NIDs) or supplementary immunization activities (SIAs) intended to complement – not replace – routine immunization. They interrupt circulation of the virus by immunizing children under five with two doses of oral polio vaccine, regardless of previous immunization status.
3. **Surveillance** – Staff in all health facilities and health workers in the field must identify and promptly report every case of acute flaccid paralysis (sudden weakness which may be caused by the polio virus). To test for polio, stool samples are sent to a special laboratory to determine whether the "wild" poliovirus is present and where it comes from.

Environmental surveillance involves testing sewage or other environmental samples for the presence of polio virus. This provides important supplementary surveillance data.

4. **Targeted mop-up campaigns** – Door-to-door immunization campaigns that are conducted in specific areas where the poliovirus is known to be present or is suspected of circulating. These are often areas with high population density, poor sanitation, or low routine immunization coverage.

Where We Are Today. When Rotary launched the PolioPlus program in 1985, there were over 350,000 cases of polio worldwide in more than 125 countries. Since then, Rotary has worked with the GPEI to help immunize more than two billion children and reduced the number of polio cases by 99%. The term "endemic" refers to an area where transmission of the polio virus has never been interrupted, and in 1985 there were over 125 polio endemic countries. Today there are only three endemic countries – Afghanistan, Nigeria, and Pakistan – and within these countries the virus is being contained within increasingly smaller geographic areas. In 2012, the GPEI vaccinated more than 429 million children in 45 countries using more than two billion doses of the polio vaccine. For more details on the program, please go to <http://www.polioeradication.org>.

What We Are Doing Going Forward. In 2012, recognizing both the epidemiological opportunity for success but also the consequences of potential failure (200,000 new cases every year, within ten years), the World Health Assembly declared the completion of polio eradication a programmatic emergency for global public health. It also called for the development of a comprehensive polio endgame strategy, aimed at securing a lasting polio-free world. In broad consultation with polio-infected

countries, stakeholders, donors and advisory bodies, the GPEI has developed a new *Polio Eradication and Endgame Strategic Plan 2013-2018* (<http://www.polioeradication.org/resourcelibrary/strategyandwork.aspx>). This new plan was presented at a Global Vaccine Summit in Abu Dhabi in April 2013 and endorsed by the World Health Assembly in May 2013.

The new *Polio Endgame* provides a comprehensive approach to ensure the rapid and simultaneous eradication of all polioviruses (wild and vaccine-derived), and addresses the long-term risks of polio, which includes phasing out use of the oral polio vaccine and ensuring the biocontainment of polioviruses. In this way, full implementation and financing of the *Polio Endgame* would result in a lasting polio-free world.

What The Significant Challenges Are. As long as the wild polio virus circulates in the remaining endemic countries, the risk of international spread of poliovirus remains high. Particularly vulnerable are high-risk countries, i.e. those bordering endemic areas, those with security challenges, those with close socio-cultural-economic ties to endemic areas and those with low routine immunization levels. Experience since 2003 has shown that outbreaks can be rapidly stopped, if internationally-agreed outbreak response guidelines are fully implemented. However, failure to fully implement these guidelines can result in persistent outbreaks, i.e. where transmission of imported poliovirus persists for >12 months. In 2013 and 2014, new outbreaks occurred in Cameroon, the Horn of Africa (centered around Somalia); and in the Middle East, with cases confirmed in Syria and Iraq. Aggressive and comprehensive outbreak response activities are successfully ongoing across these regions to rapidly stop these outbreaks.

Special Challenges of the Circulating Vaccine Derived Polio Virus (cVDPV). Wild Polio Virus type 2 (WPV2) was eradicated in 1999. Circulating Vaccine Derived Polio Virus (cVDPV) has become a significant cause of paralytic polio. More than 90% of the cVDPV cases in recent years were caused by the live vaccine derived type 2 virus. To deal with this problem, all countries have been asked to introduce at least one dose of Inactivated Polio Vaccine (IPV) in their routine immunization program by 2015 and then withdraw Oral Polio Vaccine type 2 (OPV2) by 2016. At that point Trivalent Oral Polio Virus Vaccine (tOPV) which has been used in the past will be replaced by Bivalent Oral Polio Vaccine (bOPV) which contains vaccines for Polio types 1 and 3.

How Rotarians Contribute. Rotary's contributions to the global polio eradication effort now exceed US\$1.3 billion. Rotary's contribution to the GPEI since 1988 accounts for nearly 11% of all contributions to the global budget through 2013 and represents approximately 42% of private sector contributions to the Initiative.

In addition to fundraising efforts, more than one million Rotarians have contributed personally to the effort, serving as grassroots mobilizers and volunteers to make sure that children everywhere are reached with the polio vaccine. In 1995, Rotary launched a task force to advocate the cause of polio eradication to donor governments which now works closely with the GPEI's Polio Advocacy Group. This work has resulted in more than US\$10 billion to date in contributions and commitments from donor governments to the GPEI.

How Funds Are Spent. In the initial stages of PolioPlus, Rotary paid for oral polio vaccine and supported start-up costs for Rotarians' social mobilization efforts in endemic countries. Since the mid-1990s, Rotary has conferred continuously with its spearheading partners (WHO, UNICEF and CDC) to determine how best to deploy PolioPlus funds to achieve the greatest impact on global program needs. Currently, Rotary funding supports the following areas: salaries for technical advisers, operational support, surveillance, social mobilization and stipends for the millions of volunteers who conduct NIDs and perform house-to-house follow-up visits and research into new products and approaches to facilitate eradication.

What Will Polio Eradication Cost. From 2013 through 2018, an estimated US\$5.5 billion from all sources is needed in donor contributions to fully implement the activities of the *Polio Endgame*. We have so far received almost US\$2 billion with another US\$3 billion committed. The funding gap is currently approximately US\$500 million.

Why We Need Your Help. We have made a lot of progress in the fight to end polio, but our work is not yet done. Rotary's strength is its membership, and it is through engagement at the local level that we can have the strongest impact. Rotary has committed to raising US\$35 million per year through 2018. Many clubs organize creative fundraising campaigns in their local communities and educate the public about the ongoing fight to eradicate polio through targeted public relations campaigns. Rotarians can write to their government representatives, make a donation, share stories on our <http://www.endpolio.org/> website, and encourage others to join our cause. Once we've eradicated polio, these same ideas can be used to tackle other important public health challenges. When you join the fight to eradicate polio, you are not just helping end a disease you are helping change the face of public health forever.

Rotary's Legacy. The world will be declared polio free when an independent commission considers global certification after no infection with wild polio virus occurs for at least three years in the presence of certification-standard surveillance. Once polio has been officially eradicated, the world will reap substantial financial, as well as humanitarian, dividends due to foregone polio treatment and rehabilitation costs. Depending on national decisions on the future use of polio vaccines, these savings could exceed US\$1 billion per year, savings that can be used to fund other public health priorities. A study published in November 2010 in the leading medical journal, *Vaccine*, estimates the economic benefits of the GPEI at between US\$40-50 billion based on activities from 1988 to 2035. The *Polio Eradication and End Game Strategic Plan 2013-2018* provides a framework for maximizing these benefits and preserving the legacy of the polio eradication effort.