A REPORT OF THE CSIS GLOBAL HEALTH POLICY CENTER

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Cover photo: A boy is vaccinated against polio with 'monovalent oral polio vaccine type 1' (mOPV1) outside Poli Clinic in the Herat Bazaar neighbourhood of the southern city of Kandahar, photo by UNICEF Sverige, http://www.flickr.com/photos/unicefsverige/4415954257/.

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ERADICATING POLIO IN AFGHANISTAN AND PAKISTAN

April Chang, Edgar Chavez, Sadika Hameed, Robert D. Lamb, and Kathryn Mixon¹

Polio has a real possibility of being eradicated worldwide. Efforts to eradicate the virus have proved largely successful, in part thanks to the Global Polio Eradication Initiative (GPEI), launched by the international community in 1988. GPEI is a partnership of governments, private foundations, development banks, humanitarian organizations, nongovernmental organizations, and corporate partners. It is led by the World Health Organization (WHO), Rotary International, the U.S. Centers for Disease Control and Prevention (CDC), and the UN Children's Fund (UNICEF).²

The number of new cases has dropped in the past decade, even in countries where the virus has never been eradicated. India was removed from the WHO list of polio endemic countries in February 2012; its last reported case was in January 2011. Bangladesh recovered from an outbreak in 2006 and is considered polio free. In 2003, when polio was confined to only six countries, clerics in one of those countries, Nigeria, banned the vaccine, and as a result, the Nigerian strain spread to 16 countries worldwide, including Angola, Chad, and the Democratic Republic of the Congo, which had previously been declared polio free.³ GPEI battled new outbreaks in eight additional African countries in 2011 and successfully interrupted transmission in all of them. Today, there are only three countries in the world where the polio virus remains endemic: Afghanistan, Nigeria, and Pakistan.⁴

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² Global Polio Eradication Initiative (GPEI), *Financial Resource Requirements 2012–2013: As of 1 May 2012* (Geneva: World Health Organization [WHO], May 2012), http://www.polioeradication.org/Portals/0/ Document/FRR/FRR_ENG.pdf.

³ Jeffry Klugger, "The Taliban Halts Polio Vaccines—and Pakistan's Kids Will Pay," *Time*, June 19, 2012, http://world.time.com/2012/06/19/the-taliban-halts-polio-vaccines-and-pakistans-kids-will-pay/?iid=gs-x-mostpop1.

⁴ Associated Press, "India Declared Polio-free by World Health Org.," CBS News, February 27, 2012, http://www.cbsnews.com/8301-202_162-57385542/india-declared-polio-free-by-world-health-org; WHO, "Polio Eradication in Bangladesh," *Newsletter of the Regional Office for South-East Asia of the World Health*

Afghanistan and Pakistan share a long, generally uncontrolled border traversing a region that has experienced repeated conflicts for more than three decades. Both countries have weak governments and poor health infrastructure. Significant cross-border activity, including the movement of refugees fleeing conflict, facilitates transmission of the polio virus. Since the launch of GPEI, newly reported cases of polio have declined steeply in both countries, due in part to coordination between the national and local governments and the international community, as well as the occasional engagement of armed insurgents, such as the Taliban. But that progress has reversed in the past few years. Between 2010 and 2011, the number of new cases in Pakistan increased from 144 to 198 and in Afghanistan from 30 to 76.⁵

The increase in new cases underscores the challenges that remain in both countries. The persistence of conflict in key polio sanctuaries limits the territorial coverage of vaccination teams, generates population displacements (within the two countries and across their borders) that contribute to the spread of the virus, and perpetuates conditions of poverty. Misunderstandings and rumors about the vaccine limit participation and acceptance in some communities. Because of the porous nature of the border, success in either country will depend in part on efforts made in the other. This paper reviews the eradication efforts in Afghanistan and Pakistan, including the challenges that both countries encounter and the strategies that are being used to overcome them.

Surveillance of wild poliovirus cases is undertaken in both countries by monitoring children with acute flaccid paralysis (AFP), the main symptom of polio, and collecting stool specimens to be tested for the virus. Surveillance teams also collect social and demographic details about each potential case of polio, the vaccination status of the child, and the number of oral polio vaccine (OPV) doses received by non-polio AFP case patients. Separately, vaccination teams typically go from door to door to administer either a trivalent oral polio vaccination (tOPV) or a bivalent oral polio vaccine (bOPV), both of which contain live but weakened strains of the virus. Conflict and security are the biggest obstacles to monitoring and vaccination, but GPEI and its government partners are adapting programs to reach communities in need.

Polio Eradication in Afghanistan

Through 2004, reports showed that polio incidence in Afghanistan was in decline (see figure 1). When GPEI reported only 30 new cases in 2010, the program was widely hailed as effective and on the road to complete success. However, GPEI and the Afghan Ministry of Health reported 76 new cases at the end of 2011. The increase alarmed public health officials, who noted that some

Organization, http://www.searo.who.int/LinkFiles/Advocacy_Efforts_Polio_Eradication_in_Bangladesh_ Aug07.pdf; Jennifer G. Cooke and Farha Tahir, *Polio in Nigeria: The Race to Eradication* (Washington, DC: CSIS, February 2012), http://csis.org/files/publication/120210_Cooke_PolioNigeria_Web.pdf. ⁵ GPEI, "Polio this week," May 2, 2012, http://www.polioeradication.org/Dataandmonitoring/ Poliothisweek.aspx.

new cases were in provinces with no recent history of the disease.⁶ The recent increase of cases in Afghanistan is linked to the recent increases in Pakistan, and health officials consider the two countries to be part of the same epidemiological area.



Figure 1: Reported Cases of Polio in Afghanistan (2000–2011)⁷

Several international actors have focused on the eradication effort in Afghanistan. The Afghan government, supported by members of GPEI, has spearheaded the effort to eradicate polio since 2001. One of the largest international donors to the eradication effort in Afghanistan is the government of Canada, which allotted nearly \$60 million between 2009 and 2011. The Afghan Ministry of Public Health coordinates with GPEI and other international actors to set vaccination goals and agendas, and then works with teams at the provincial and district level to implement strategies to reach all children under five years of age.

While most of Afghanistan remains polio free, the virus has proved most resilient in the southern provinces of Helmand and Kandahar, which are near the border with Pakistan, and in the northern province of Uruzgan. All are sites of persistent conflict, and 80 to 90 percent of confirmed cases over the last three years have come from "high-risk" districts within the southern provinces. Instability and violence in those areas, coupled with limited government oversight and

⁶ Rod Nordland, "After Years in Decline, Polio Cases in Afghanistan Triple in a Year," *New York Times*, January 17, 2012, http://www.nytimes.com/2012/01/18/world/asia/after-years-of-decline-polio-cases-in-afghanistan-rise.html?_r=1.

⁷ WHO, "Afghanistan reported cases," October 3, 2011, http://apps.who.int/immunization_monitoring/ en/globalsummary/timeseries/TSincidenceByCountry.cfm?C=AFG.

accountability, have hindered the reach of GPEI vaccination teams and complicated efforts to track the spread of the virus and stop ongoing endemic transmission. According to UNICEF, the number of unreached children during vaccination campaigns in these provinces reaches as high as 272,905.⁸

Polio Eradication in Pakistan

Since 2010, Pakistan has reported the highest number of paralytic polio cases among the three remaining polio-endemic countries, with approximately 198 cases reported in 2011. The areas of persistent polio transmission in Pakistan are geographically clustered into four areas: the districts of Quetta, Pishin, and Killah Abdullah in Balochistan; Peshawar in Khyber Paktunkhwa (KPK) Province; the tribal agencies of Bajaur, Khyber, and Mohmand in the Federally Administered Tribal Areas (FATA); and the Gadap, Buldia, and Gulshan-e-Iabal areas of Karachi in Sindh Province.⁹ These polio reservoirs are the sources of two-thirds of reported cases.

Eradication efforts have reduced the incidence of the disease from 2,980 reported cases in 1980 to 198 in 2011. Despite this progress, recent cases jumped from 32 to 117 from 2007 to 2008 due to poor planning, weakened accountability mechanisms, and the deteriorating security situation along the Afghanistan-Pakistan border (see figure 2). The number of cases jumped again in 2010, possibly due to the flooding disaster that affected over a fifth of the country and resulted in a wave of internally displaced persons. In December 2010, 144 new cases were reported, underscoring the serious challenges that natural disasters can cause.¹⁰

Members of GPEI partner with the Polio Cell established in the office of Pakistan's prime minister, which is headed by the prime minister's special adviser. Some of the major actors and donors are WHO, UNICEF, the United Kingdom, Canada, CDC, the Bill and Melinda Gates Foundation, Rotary International, and the World Bank.¹¹ The prime minister's office heads the Task Force for Polio Eradication, which is the main driving force behind the vaccination effort.

⁸ Cornelia Walther, "Eradicating Polio in Afghanistan takes Persuasion, Participation and Peace," UN Children's Fund (UNICEF), September 17, 2009, http://www.unicef.org/infobycountry/ afghanistan_51171.html.

⁹ Altaf Bosan, "Update on Polio Eradication in Pakistan" (presentation at second meeting of the Independent Monitoring Board, March 31–April 1, 2011, WHO, Geneva),

http://www.polioeradication.org/Portals/0/Document/AboutUs/Governance/IMB/deliberations/Presentations/2IMB_Pakistan_presentation_201103.pdf.

¹⁰ Human Development Unit, South Asia Region, "Emergency Project Paper on a Proposed Additional Credit in the Amount of SDR 26.1 Million to the Islamic Republic of Pakistan for a Third Partnership for Polio Eradication Project," World Bank, April 6, 2011, http://www-wds.worldbank.org/external/ default/WDSContentServer/WDSP/IB/2011/04/13/000333037_20110413005343/Rendered/INDEX/603290 PJPR0P121e0only1910BOX358335B.txt.

¹¹ World Bank, "WB's Additional Support for Pakistan's Polio Eradication Initiative: US\$21.14 Million," June 8, 2007, http://siteresources.worldbank.org/INTPAKISTAN/Resources/Polioeradication.pdf.

The task force additionally includes representatives from the offices of the president, the Ministry of Inter-provincial Coordination, provincial governments, and GPEI. District coordination officers, who are responsible for the operational implementation of eradication efforts, meet monthly with their superiors.





Challenges to Eradication

Polio eradication efforts in both countries face several serious challenges that hamper the drive to eliminate the virus from the region. First, a lack of oversight and accountability in all levels of government affects programming. In a 2011 report, for example, the Independent Monitoring Board of the GPEI criticized the Pakistani program, emphasizing that there was a defined lack of commitment and few, if any, accountability mechanisms. According to the board, the lack of interest and ownership at the local level essentially nullified any high-level commitments made by the federal authorities with GPEI partners.¹³

¹² WHO, "Pakistan Reported Cases," October 3, 2011, http://apps.who.int/immunization_monitoring/en/globalsummary/timeseries/TSincidenceByCountry.cfm?C=PAK.

¹³ Liam Donaldson et al., *Independent Monitoring Board of the Global Polio Eradication Initiative: Report* (Geneva: GPEI, October 2011), http://www.polioeradication.org/portals/0/document/aboutus/governance/imb/4imbmeeting/imbreportoctober2011.pdf.

Second, the security environment puts polio workers in danger and makes some areas inaccessible. They are frequently threatened by nonstate armed groups or face difficulties gaining entry to UN "no go" zones, where government authority is limited to district centers. Program staffers are under threat of kidnappings, beatings, harassment, and even assassinations in conflict zones. In mid-July 2012, two WHO workers participating in the polio campaign were injured, and a few days later another one was killed, by unknown attackers in Karachi.¹⁴ In September 2008, two Afghan medical officers working with a GPEI team were killed in a suicide attack in Kandahar while on assignment.¹⁵ A precarious security environment increases the number of missed children during vaccination rounds. CDC estimates that between 5.4 percent and 20.5 percent of children are missed during initial vaccination rounds at the national level.¹⁶

Third, natural disasters and persistent conflict compromise health infrastructure and expose large groups to unhygienic conditions.¹⁷ Although health officials have attempted to limit polio to the areas of persistent transmission in Karachi, Balochistan, and FATA, the movement of internally displaced persons has hampered efforts to quarantine the virus.¹⁸ Karachi in particular has witnessed high rates of in-migration from other regions, with new migrants concentrated in urban slums. The Pashtuns, who comprise a large portion of the population in each of the areas of persistent transmission, are five times more likely to contract polio. In 2011 alone, 77 percent of the reported cases in Pakistan emerged from Pashtun populations.¹⁹

Finally, refusal rates in some Muslim communities in Pakistan remain chronically high. Some religious and political leaders have denounced vaccination efforts as a Western conspiracy or have publicly claimed that the vaccines cause infertility. This has motivated some parents to refuse vaccinations for their children on religious grounds. Further, a negative perception about vaccination efforts has resulted from the CIA's use of vaccination programs to gain access to Osama bin Laden.²⁰

¹⁴ Leslie Roberts, "Polio Workers Shot in Pakistan," ScienceInsider, July 23, 2012,

http://news.sciencemag.org/scienceinsider/2012/07/polio-workers-shot-in-pakistan.html?ref=hp.

¹⁵ GPEI, "Polio workers killed in the line of duty," September 14, 2008,

http://www.polioeradication.org/Mediaroom/Newsstories/Newsstories2008/tabid/166/iid/33/Default.aspx. ¹⁶ Centers for Disease Control and Prevention (CDC), "Progress Reports of the GPEI Major Process Indicators for 2011: 4th Quarter 2011," January 24, 2012, http://www.polioeradication.org/Portals/0/

 $Document/Data \& Monitoring/RiskAssessment/CDCR is kAssmt_MPI_ProgressReport_Q4_20120124.pdf.$

¹⁷ Bruce Aylward, author interview, June 13, 2012; Human Development Unit, South Asia Region, "Emergency Project Paper."

¹⁸ Pakistan Technical Advisory Group (TAG), "First Meeting of the Pakistan Technical Advisory Group on Polio Eradication: Brief Summary and Recommendations," WHO, March 21–22, 2012,

http://www.who.int/immunization/sage/meetings/2012/april/Polio_PAK_Summary_Report.pdf. ¹⁹ Ibid.

²⁰ Alex Rodriguez, "In Pakistan, polio vaccines cause for fear," *Los Angeles Times*, October 17, 2011, http://articles.latimes.com/2011/oct/17/world/la-fg-pakistan-polio-20111017.

The Pakistani Taliban announced in June 2012 that it would place a ban on all vaccinations until the United States ended drone strikes. The vaccination campaign, which would have reached an estimated 161,000 children in North Waziristan's tribal area, was subsequently cancelled. Refusal rates remain more of an issue in Pakistan than in Afghanistan; the support of the Afghan Quetta Shura Taliban for polio vaccinations has been instrumental in contributing to high acceptance rates by local communities in Afghanistan for the polio vaccine. Refusal rates in Afghanistan are traditionally very low.

Strategies to Address Challenges

Security Environment and Natural Disasters

GPEI members and the governments of Afghanistan and Pakistan have designed several innovative strategies to address the problems created by both the security environment and natural disasters. First, while GPEI members maintain strict neutrality in the conflicts to politicization of the vaccination campaign, they have at times coordinated their work with international and Afghan security forces to ensure the safety of their local staff.²¹ GPEI has also coordinated with the International Committee of the Red Cross (ICRC), which has helped vaccination teams reach conflict zones.

Second, GPEI has also engaged with nontraditional actors to gain access to otherwise inaccessible areas. Local teams engage community leaders, and occasionally armed insurgents, such as the Quetta Shura Taliban, in their efforts to reach children in unstable areas. The support of the Taliban is an unprecedented, albeit unofficial, example of their cooperating with branches of the Afghan government and the international community. Mullah Omar, the Taliban's leader, wrote and signed letters approving several campaigns (the Taliban offered 10 letters of endorsement in 2009 alone).²² WHO officials claim the letters have helped them enter dozens of previously out-of-bounds villages in southern Afghanistan and have protected some teams from militants who were suspicious of their activity.²³

²¹ WHO, "Report on the Meeting of the Technical Advisory Group on Poliomyelitis Eradication in Afghanistan and Pakistan," Islamabad, March 24–25, 2011, http://www.polioeradication.org/Portals/0/ Document/AboutUs/Governance/IMB/3rdIMBMeeting/2.12.pdf.

²² Christopher R. Albon, "Vaccination Diplomacy," *Conflict Health*, August 26, 2010, http://conflicthealth.com/vaccination-diplomacy/.

²³ According to Khushhal Zaman, WHO's leader for four eastern Afghan provinces, "[if workers] have any problems, they just show the Taliban letter, and it works." Yaroslav Trofimov, "Risky Ally in War on Polio: the Taliban," *Wall Street Journal*, January 15, 2012, http://online.wsj.com/article/

SB126298998237022117.html; Rod Nordland, "After Years in Decline, Polio Cases in Afghanistan Triple in a Year," *New York Times*, January 17, 2012, http://www.nytimes.com/2012/01/18/world/asia/after-years-of-decline-polio-cases-in-afghanistan-rise.html?_r=1.

Third, vaccination teams have learned to take advantage of lulls in violence and focus on making short-term efforts as effective as possible. Strategies include blanket vaccination of all children crossing the border, engaging community leaders, and setting up vaccination teams in places where children might gather, such as shrines or picnic sites. Permanent vaccination teams are now being piloted in areas of Afghanistan where health workers from local communities are recruited to monitor the virus continually and vaccinate children on a regular basis. Short interval additional dose (SIAD) campaigns are conducted in quick succession during lulls in violence to rapidly boost immunity levels. GPEI additionally targets a wider age range in conflict areas during vaccination campaigns.

Fourth, GPEI has focused attention on vaccinating children on the border in response to seasonal migrations and refugees crossing to escape conflict. For example, the Canadian government's Polio Eradication Signature Project heavily invested in stopping transmission at the Afghanistan-Pakistan border, vaccinating an estimated 22,000 children. The project set up 11 border posts to vaccinate all children crossing in either direction.

Oversight and Accountability

In response to the report from the Independent Monitoring Board criticizing the Pakistani eradication program, Pakistan announced a National Emergency Action Plan (NEAP) in 2011. The objectives of the NEAP were to achieve better government oversight and accountability at every administrative level, ensure sustained access to children, and interrupt transmission by the end of 2011. When those goals were not reached, an augmented NEAP was announced for 2012. The augmented NEAP calls for increased participation of the offices of the prime minister and president and intensified oversight in the provinces. The prime minister's task force was created to coordinate activities across the provinces, including micro-plans for monitoring high-risk districts using locally tailored, innovative strategies for social mobilization. These include collaboration between the public and private sectors, the armed forces, and civil society in conflict-affected regions, as well as renewed engagement with religious leaders.²⁴ After three months of the augmented NEAP, the Pakistan Technical Advisory Group (TAG) reported improvement in oversight and integration of district-level administration in campaign activities.²⁵

Parental Refusal Rates

To address parental refusals, UNICEF is teaming up with religious scholars, clerics, and local doctors to conduct house-to-house visits, coordinate community dialogues, and conduct mass

²⁴ Speech by Bruce Aylward, WHO director-general for polio, emergencies, and country collaboration, at the 2012 Rotary International Convention, Bangkok, May 8, 2012, http://www.rotary.org/RIdocuments/ en_pdf/c12_speech_aylward_en.pdf.

²⁵ GPEI, "Festivities for a polio-free Pakistan," March 21, 2012, http://www.polioeradication.org/tabid/ 461/iid/205/Default.aspx; TAG, "First Meeting of the Pakistan Technical Advisory Group on Polio Eradication."

media campaigns to ensure national visibility.²⁶ Female health workers are particularly valuable for this communication strategy, as Muslim homes can be inaccessible to men when the husband is not present. Local health workers are responsible for conducting tasks such as micro census, tracking population movements, and working with elders and parents.²⁷ UNICEF additionally launched an outreach effort using an evidence-based communication strategy to address concerns about the vaccines and how they work. The communication network is composed of mullahs and other religious leaders, elders, teachers, and community health workers.²⁸

Conclusion

On May 26, 2012, GPEI launched a new global Polio Emergency Action plan for 2012–2013. These actions reflect the perception that the global effort against the disease is at a perilous point. It is evident that the World Health Assembly's target of eradicating polio by the end of 2012 will not be met. This was demonstrated by the increasing number of cases in Afghanistan, Nigeria, and Pakistan and the spread of the virus to neighboring countries in 2011. Tajikistan, China, and the Democratic Republic of the Congo recorded outbreaks, including polio among adults and up to a 30 percent fatality rate. At the same time, the initiative runs the risk of losing momentum and faces an estimated funding gap of \$1 billion through 2013 if donors lose interest.²⁹

The emergency plan targets high-risk areas in the three remaining polio-endemic countries to ensure that vaccination activities are sufficient to stop transmission.³⁰ The plan calls for intensified government oversight, enhanced accountability, and increased access to children. For example, the deployment of permanent vaccination teams in high-risk areas (as in Afghanistan), innovative methods for tracking movements of migrant and nomadic populations (as in Pakistan), and the use of geographic information system (GIS) and/or global positioning system (GPS) technology to monitor the work of vaccinators (as in Nigeria).

This reinvigorated effort to align and strengthen the work of all partners is an important step, but the main challenge for both countries will be to ensure sustainability. Ongoing conflict is likely to remain a central obstacle to proper vaccination procedures, particularly in light of the upcoming withdrawal of U.S. troops from Afghanistan in 2014 and the growing conflicts within Pakistan. But sustainability is not only about dealing effectively with conflict. The recent setbacks in the

²⁶ Rafael Obregon, "Achieving polio eradication: a review of health communication evidence and lessons learned in India and Pakistan," *Bulletin of the World Health Organization*, February 6, 2009, http://www.who.int/bulletin/volumes/87/8/08-060863/en/.

nttp://www.wno.int/bulletin/volumes/8//8/08-060863

²⁷ Elias Durry, author interview, May 25, 2012.

²⁸ UNICEF, "Polio in Afghanistan 2011," fact sheet, http://www.polioinfo.org/downloads/ reports/Polio_Factsheet.pdf.

²⁹ GPEI, "Polio eradication shifts into emergency mode," May 24, 2012, http://www.polioeradication.org/ tabid/461/iid/219/Default.aspx.

³⁰ In Pakistan this means achieving immunity levels above 90 percent of the targeted population. Bruce Aylward, author interview, June 13, 2012.

fight against polio in Afghanistan and Pakistan underscore the fact that, even if vaccination teams are able to gain access to insecure areas, success is ultimately dependent on the quality of implementation. Neither country has fully put in place the mechanisms needed to ensure that stakeholders, especially at the local level, are resourced, committed, and accountable. Until permanent institutions are capable of ongoing work, the medium-term outreach strategies of vaccination campaigns will need to be adapted to the circumstances faced in each target community. This will be particularly challenging in places with both high conflict and high migration, such as Karachi, which will serve as an important test case.

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