USAID
FROM THE AMERICAN PEOPLE

Maternal and Child Survival Program

Report on MCSP Support for the Polio Switch in April 2016

www.mcsprogram.org

Report date: September 1, 2016

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under the terms of the Cooperative Agreement AID-OAA-A-14-00028. The contents are the responsibility of the Maternal and Child Survival Program and do not necessarily reflect the views of USAID or the United States Government.

Table of Contents

Abbreviations

bOPV	Bivalent oral polio vaccine
IPV	Inactivated polio vaccine
MCSP	Maternal Child Survival Program
tOPV	Trivalent oral polio vaccine
USAID	U.S. Agency for International Development
WHO	World Health Organization

Introduction

In April 2016, the largest and fastest globally-coordinated project in the history of immunization was carried out in 155 countries and territories.[1] Known as "the switch," this activity entailed replacing trivalent oral polio vaccine (tOPV), which protects against all three strains of the poliovirus, with the bivalent form (bOPV) which protects against two strains, types 1 and 3. The last case of polio due to type 2 wild virus was detected in 1999, and the virus was declared eradicated in 2015. This switch, synchronized with the introduction of inactivated polio vaccine (IPV), will help to achieve the aim of global eradication of polio while eliminating the risk of vaccine-associated paralytic polio and circulating vaccine-derived polio virus due to type 2 virus. [2,3]

The global effort to eradicate polio, spearheaded by Rotary International, the U.S. Centers for Disease Control and Prevention, the World Health Organization (WHO), UNICEF, and the Bill & Melinda Gates Foundation began in earnest 26 years ago. The U.S. Government has provided about $2 billion of the $11 billion spent thus far on polio eradication. The U.S. Agency for International Development (USAID) has played a critical role, recognizing and raising the importance of mobile populations, cross-border coordination, communications, and the need for more women vaccinators. In fact, working with local community organizations, women's groups, and self-help groups, the messages have gone well beyond polio to address other immunizations, water and sanitation, breastfeeding, and handwashing. USAID's support for facility-based and community-based disease surveillance provides the data and verification that the immunization efforts are working. Increasingly, these networks of disease surveillance officers are also searching for cases of other vaccine preventable diseases and are at the front lines during any disease outbreak or natural disaster. USAID's steady financial support and technical leadership has contributed to this success and laid the foundation for a lasting legacy.

USAID supports the Global Polio Eradication Initiative Endgame and Strategic Plan that aims to:

- Detect and interrupt all polio transmission,
- Strengthen immunization systems and begin phased withdrawal of oral polio vaccines,
- Contain the polio virus and certify interruption of transmission, and
- Plan polio's legacy.

The Maternal Child Survival Program (MCSP) is USAID'S global flagship program to further the Agency's goal of ending preventable child and maternal deaths. MCSP is implemented by Jhpiego, in partnership with John Snow, Inc., Save the Children, ICF/MACRO, PATH, Results for Development, PSI, Broad Branch Associates, and other collaborating agencies. MCSP works with other global, regional, and country partners to improve the coverage, quality, and sustainability of high-impact reproductive, maternal, newborn, and child health interventions at scale. Health systems strengthening, equity, gender, community, the engagement of civil society organizations, behavior change communications, and closing the innovation gap are all part of the program's cross-cutting approach.

In immunization, MCSP works to build institutional and individual capacity to manage routine immunization programs, strengthen routine immunization systems, and implement innovative and tailored approaches in countries for sustainable and equitable access to immunization. Using a life cycle approach, MCSP also works to strengthen integration where this makes the most sense and provide evidence for expanding this work. At

the global and regional levels, MCSP brings its learning from the field to influence policy and strategy formulation and, in turn, adapts those global approaches to field use.

MCSP provides technical support to USAID polio eradication efforts and disease control in a number of countries and at the global level. The key areas of intervention in the Program include increasing the birth dose of the oral polio vaccine (OPV), introducing IPV, documenting and sharing lessons learned, providing technical support to outbreak response, and providing inputs to advisory groups including legacy planning.

To systematically document MCSP's contribution to the switch and IPV introduction, a survey was sent to MCSP field staff in the 11 countries where MCSP supported the process. These countries were: Haiti, Kenya, Liberia, Madagascar, Malawi, Mozambique, Nigeria, Pakistan, Tanzania, Uganda, and Zimbabwe.*

This report summarizes the findings from the survey including the national and international agencies involved, the role of MCSP in the switch, challenges and successes of the switch, IPV supply/distribution problems, and tOPV supply/distribution problems. Individual country-specific sheets have been developed and are available to read about the switch for a specific MCSP-supported country.

The switch from tOPV to bOPV was scheduled to occur in the second half of April 2016. All countries interviewed were successful in carrying out the switch by this time. In Zimbabwe, it occurred with a slight delay on 1 May 2016.

By the end of April 2016, IPV had been introduced in seven of these 11 countries: Haiti, Kenya, Madagascar, Mozambique, Nigeria, Pakistan, and Uganda. The first country to introduce IPV was Nigeria in February 2015, and the last was Uganda in April 2016 (see Table 1 for date information for each country). In Tanzania, Malawi, and Zimbabwe, IPV could not be introduced in April 2016 because of a global shortage of IPV; these countries were not considered high risk by WHO, and therefore, were given lower priority for needing the vaccine. In 2017, IPV may be introduced in these countries depending upon vaccine availability. In Liberia, IPV introduction was postponed because of the Ebola outbreak and is due to be introduced by the end of 2016.

Table 1. IPV introduction in country date

MCSP Country	Month	Year
Haiti	March	2015
Kenya	December	2015
Madagascar	May	2015
Mozambique	November	2015
Nigeria	February	2015
Pakistan	August	2015
Uganda	April	2016

* Pakistan and Zimbabwe are MCHIP Associate Awards countries, but will be referred to throughout this document as MCSP-supported countries.

Role of National Institutions

In all 11 countries, the Expanded Program on Immunization under the ministries of health played the central coordinating and implementing role for the switch. See Table 2 for information on national institutions involved in each country. Institutions had varied roles within each country; in general, they were responsible for resource mobilization, planning and coordinating the switch, training, and producing and updating materials.

Table 2. National institutions involved in polio switch in MCSP-supported countries

National institution	HAI	KEN	LIB	MAD	MLW	MOZ	NGI	PAK	TAN	UGA	ZIM
MOH	X	X	X	X	X	X	X	X	X	X	X
Zimbabwe Organizations - Medicines Control Authority - University Dept of Health Sciences - Environmental Health Dept - Epidemiology & Disease Control Dept. - Pediatric Association											X
Kenya Organizations - Pharmacy and Poisons board - National Immunization Technical Advisory Group		X									
Nigeria Organizations -Primary Healthcare Organization Agency - Solina Health - eHealth Africa and Alpacko - NAFDAC -PAN							X				
Polio eradication committees		X					X				

Role of International Agencies

In all MCSP-supported countries, WHO and UNICEF were the key international agencies that supported the switch. UNICEF's main role was technical support and vaccine supply.

WHO's role was to provide training, technical assistance, financial support, and logistic support. Gavi provided support to all countries that introduced IPV: Haiti, Kenya, Madagascar, Mozambique, Nigeria, Pakistan, and Uganda. Supporting switch management, technical support, logistic support, and financial management were the main roles listed by the countries. Other partners that played a role include: U.S. Centers for Disease Control and Prevention, Clinton Health Access Initiative, and International Red Cross. See Table 3 for a full list of international agencies by country.

Table 3. International agencies involved in switch in MCSP supported countries

National institution	HAI	KEN	LIB	MAD	MLW	MOZ	NGI	PAK	TAN	UGA	ZIM
WHO	X	X	X	X	X	X	X		X	X	X
UNICEF	X	X	X	X	X	X	X		X	X	X
CDC		X					X				
European Union							X				
Gavi	X	X		X	X	X	X	X			
Bill & Melinda Gates Foundation								X			
International NGOs -CHAI -HC3 -Village Reach -Red Cross		X	X			X	X				

Maternal and Child Survival Program Role

Countries defined five ways in which MCSP was essential: training technical support, general technical support, planning and coordinating meetings, general logistic support, and switch supervision. See Table 4 for information on the role MCSP played in each country. MCSP provided general technical support to nine countries: Haiti, Kenya, Liberia, Madagascar, Nigeria, Pakistan, Tanzania, Uganda, and Zimbabwe. Furthermore, MCSP provided training technical support to six countries: Kenya, Madagascar, Malawi, Tanzania, Uganda, and Zimbabwe. MCSP staff reported participating in planning and coordination meetings for five countries: Liberia, Madagascar, Malawi, Nigeria, and Uganda. Similarly, MCSP provided general logistic support and switch supervision for three countries and five countries, respectively. In Pakistan, MCSP works only in one province, Sindh, where it was involved in the switch supervision and general technical support.

Table 4. MCSP country-defined role in polio switch

MCSP Role	HAI	KEN	LIB	MAD	MLW	MOZ	NGI	PAK*	TAN	UGA	ZIM
Technical Support: Training		X		X	X				X	X	X
Technical Support: General	X	X	X	X			X	X	X	X	X
Planning and Coordinating Meetings			X	X	X		X		X	X	X
Logistic Support: General	X			X						X	
Switch Supervision				X		X		X		X	X

*in Sindh province only

Successes of Switch

Haiti, Nigeria, Uganda, and Zimbabwe highlighted successes relating to training, including synchronized, organized, and successful completion. Haiti, Kenya, Nigeria, and Zimbabwe all reported successes relating to establishment and functioning of switch committees, stakeholders, districts, and local government agencies regarding their preparedness and acceptance for the switch. Success with development and distribution of training materials was reported by Malawi, Mozambique, Pakistan, and Zimbabwe. Kenya and Tanzania listed successful collection and disposal of tOPV. Four countries, Kenya, Malawi, Mozambique, and Tanzania, listed success with the timely arrival of bOPV to health facilities and the switch in general. Kenya and Uganda listed the availability of IPV during the switch as a success. Finally, Mozambique listed population acceptance as a success of the switch.

Challenges of Switch

Mozambique and Tanzania reported no significant challenges with the switch. Malawi, Nigeria, Pakistan, Uganda, and Zimbabwe listed funding problems as a challenge. Malawi, Nigeria, and Zimbabwe all listed that the funding was inadequate for the switch process. Pakistan listed their funding problem was a lack of budget availability. Uganda stated that there was a delay in the release of funds from the Ministry of Health to the districts. Haiti, Kenya, Madagascar, Nigeria, and Zimbabwe listed problems related to tOPV, including issues with collecting tOPV stock for destruction or clarity about the destruction method. Nigeria and Haiti both listed the timeframe as too short for proper processing of the switch. Kenya, Pakistan, Liberia, Nigeria, and Uganda listed issues with documentation. Nigeria listed template revisions without notice and delays in reports from local government agencies as issues. Liberia listed the development of an immunization improvement plan as an issue. Pakistan was delayed in receiving inventories. Kenya stated there was a lack of focus on the switch in trainings. Uganda listed the training materials and communications coming in separate pieces as an issue. Kenya and Zimbabwe reported challenges relating to the training and health workers/monitors, specifically that training was incomplete or lacking, leading to some confusion among health workers. In Zimbabwe, there was a challenge with finding unbiased monitors. Liberia listed competing priorities: polio national immunization days, introduction of rotavirus vaccine, and the human papilloma virus vaccine pilot. Finally, Zimbabwe stated that inadequate transport was a challenge that stemmed from lack of funding.

Effect on Related Immunization Activities

The focus on the switch had an impact on MCSP's ability to implement a planned support program in country. Kenya, Madagascar, and Uganda reported disruptions in regular activities during switch activities. Liberia reported that extra focus on immunization activities due to the switch was an opportunity that allowed workers to take note of other issues, such as the presence of expired vaccines in country cold stores. Polio switch activities drew extra attention and had some impact on the ability to implement regular support programs in country for a period, resulting in some delayed activities.

Inactivated Polio Vaccine Supply or Distribution Issues

Only seven of 11 countries had introduced IPV, and five of them had issues: Haiti, Kenya, Madagascar, Mozambique, and Nigeria. These countries had three major supply or distribution problems with IPV: transportation, vaccine stock-outs at subnational level or national level, and lack of storage capacity (see Table 5). Madagascar listed transportation as its only issue. Haiti listed transportation, subnational stock-outs, and storage capacity as issues. Kenya (national) and Mozambique (subnational) listed supplies being out of stock as their only issue. The remaining five countries did not list any supply or distribution problems with IPV. Four of these remaining countries did not introduce IPV so no challenges were expected, and only one country, Pakistan, did not have any noticeable distribution problems to report.

.

Table 5. Supply or distribution problems with IPV

	HAI	KEN	MAD	MOZ	NGI
Transportation	X		X		
National Stock-out		X			X
Subnational Stock-out	X			X	X
Storage Capacity	X				

Trivalent Oral Polio Vaccine Supply or Distribution Issues

Two countries, Kenya and Zimbabwe, reported stock-outs of tOPV in the months before the switch. Kenya was able to solve this temporary problem by redistributing the available tOPV stocks among health facilities. Zimbabwe experienced temporary vaccine stock-outs due to the shift in the date of bOPV introduction, but an emergency order of tOPV remedied the stock-out. The remaining countries reported no issues in the supply or distribution of tOPV, indicating that there was adequate stock and preparation before the switch.

Polio Switch in Ukraine

Although Ukraine was not included in the MCSP survey of polio switch activities, MCSP served as an independent monitor of the polio switch in Ukraine, which took place with the coordinated switch in April 2016. The review team visited two oblasts (regions) in the country and concluded that the areas were well prepared for the collection and destruction of tOPV. IPV was mostly available, but not always in the correct quantities for the catchment area.

Recommendations

Given the massive logistical, technical, and coordination effort involved in implementing the switch within the month of April, several areas could be addressed differently based on this experience.

- Stronger engagement with regulatory bodies for the licensing of bOPV, as in the case of Ukraine.
- Greater use of the opportunity presented to draw attention beyond the logistics of the vaccine supplies, but also on strengthening the routine immunization system and delivering key messages for overall improvement in performance, as was seen in Liberia.
- Better mechanisms and advanced planning processes that maximize human resources without disrupting regular delivery of health services could also be adapted in any future exercise of such nature.

Conclusion

In April 2016, a coordinated polio switch occurred in 155 countries and territories, in which all countries currently using tOPV switched to using bOPV.[1] This switch, synchronized with the introduction of the IPV, will help to achieve global polio eradication while eliminating the risk of vaccine-associated paralytic polio and circulating vaccine-derived polio virus due to type 2 virus.[2,3] The current global shortage of IPV will have an impact on future rollout and implementation of IPV introduction in focal countries as part of the endgame strategy in the global polio eradication effort. Furthermore, the delayed introduction due to the shortage leaves countries that cannot introduce IPV at increased risk.[4]

USAID has played a critical role in the global polio eradication effort, and has provided technical assistance through MCSP in 11 countries in this historic effort to introduce bOPV and withdraw the tOPV in the single largest global logistic effort ever. Overall, all 11 countries completed the tOPV to bOPV switch, and seven countries introduced IPV into their routine immunization schedules in April 2016.

References

1. Polio Global Eradication Initiative news. Polio Global Eradication Initiative website. http://www.polioeradication.org/Portals/0/Document/Media/Newsletter/PN201604_EN.pdf. Published April 2016. Accessed August 23, 2016.
2. Replacing trivalent OPV with bivalent OPV. World Health Organization website. http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/oral_polio_vaccine/en/Published 2016. Accessed August 23, 2016.
3. Replacing trivalent OPV with bivalent OPV: the switch. World Health Organization website. http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/oral_polio_vaccine/OPV-switch-quick-reference-summary-Aug2015.pdf?ua=1. Published August 2015. Accessed August 23, 2016.
4. The Introduction of IPV, the switch, and risk mitigation. World Health Organization website. http://www.who.int/immunization/diseases/poliomyelitis/endgame_objective2/inactivated_polio_vaccine/Update_on_supply_constraints_for_IPV-APRIL2016.pdf. Accessed August 23, 2016.