PAHO REPORT

Lessons Learned

on IPV Introduction and the Switch from tOPV to bOPV in the Americas

Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

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Abbreviations

AFP	Acute flaccid paralysis
BMGF	Bill & Melinda Gates Foundation
bOPV	Bivalent oral polio vaccine containing type 1 and type 3
CDC	U.S. Centers for Disease Control and Prevention
cVDPV	Circulating VDPV
Endgame Plan	Polio Eradication & Endgame Strategic Plan 2013–2018
EPI	Expanded Program on Immunization
ESAVI	Event supposedly attributable to vaccination or immunization
Gavi	Gavi, the Vaccine Alliance
GCC	Global Commission for the Certification of Poliomyelitis Eradication
GPEI	Global Polio Eradication Initiative
Hib	Haemophilus influenzae type b
ICCPE	International Commission for the Certification of Poliomyelitis Eradication in the Americas
IMG	GPEI Immunization Systems Management Group
IPV	Inactivated polio vaccine
mOPV2	Monovalent oral polio vaccine type 2
NITAG	National Immunization Technical Advisory Group
NIP	National immunization program
NPCC	National Polio Containment Coordinator
NRA	National Regulatory Agency
OPV	Oral polio vaccine
OPV2	Oral polio vaccine type 2
PAHO	Pan American Health Organization
Revolving Fund	PAHO Revolving Fund for Vaccine Procurement
RCC	Regional Certification Commission for the Polio Endgame in the Region of the Americas
SAGE	WHO Strategic Advisory Group of Experts on Immunization
Switch	The globally synchronized switch from tOPV to bOPV
TAG	PAHO Technical Advisory Group on Vaccine-preventable Diseases
TFGH	Task Force for Global Health (Emory University)
tOPV	Trivalent oral polio vaccine containing type 1, type 2, and type 3
UNICEF	United Nations Children's Fund
VAPP	Vaccine-associated paralytic poliomyelitis
VDPV	Vaccine-derived poliovirus
WHA	World Health Assembly
WHO	World Health Organization
WPV	Wild poliovirus
WPV2	Wild poliovirus type 2

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PAHO would like to thank all of the countries and the healthcare workers and everyone involved in the process of the introduction of the inactivated poliovirus vaccine (IPV) and the switch from trivalent oral polio vaccine (tOPV) to the bivalent oral polio vaccine (bOPV) for the amazing commitment and dedication to meet these goals.

We would like to specifically thank the EPI managers for sharing their experience and perspective to enrich this legacy document. We also would like to thank the national health authorities, professionals, and volunteers that contributed to the success of these goals in the following countries: Anguilla, Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, British Virgin Islands, Chile, Colombia, Cuba, Curacao, Dominica, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, St Kitts and Nevis, St Lucia, St Vincent and Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, and Venezuela.

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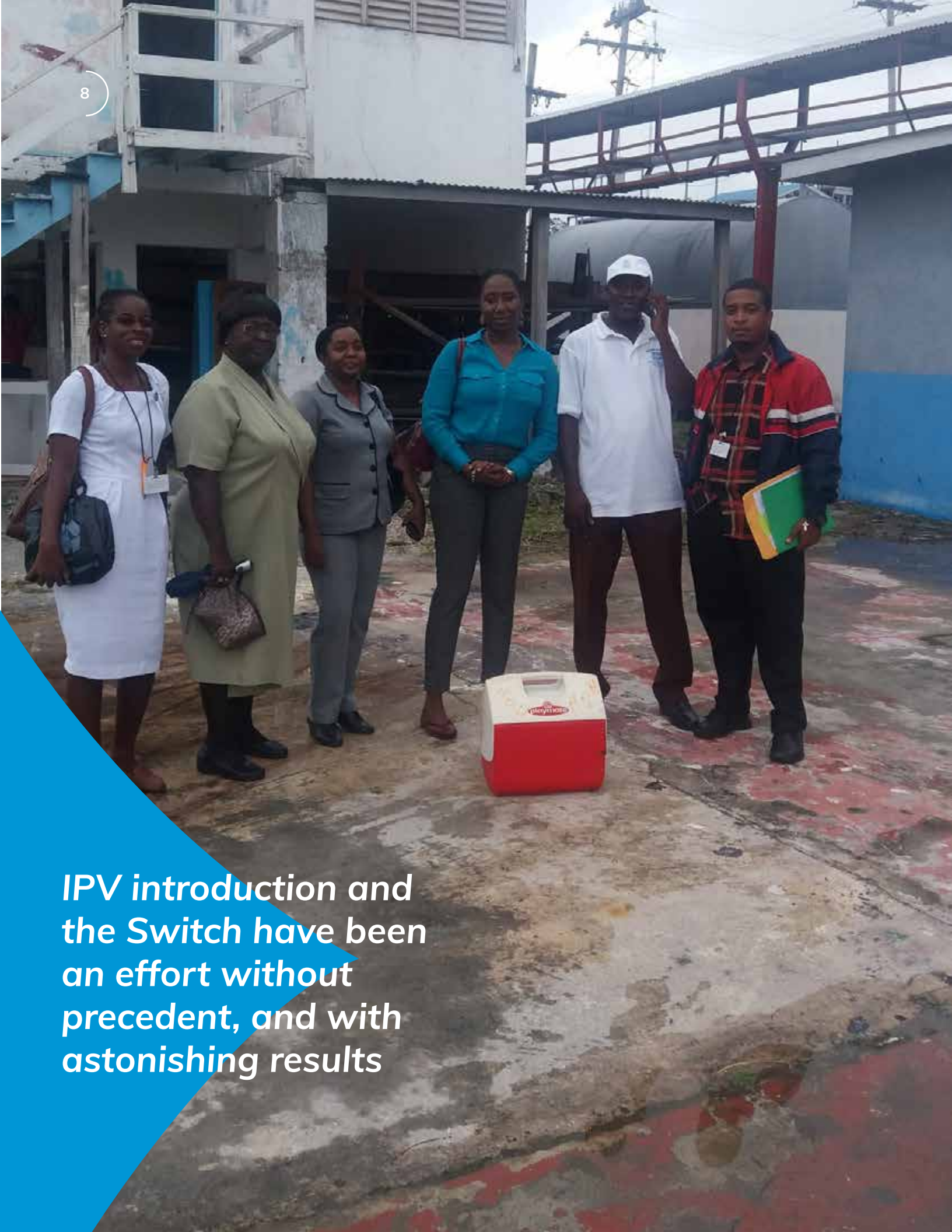


IPV introduction and the Switch have been an effort without precedent, and with astonishing results

Purpose of this report

The introduction of the inactivated polio vaccine (IPV) and synchronized switch from the trivalent oral polio vaccine (tOPV) to the bivalent oral polio vaccine (bOPV) ("the Switch") in the Pan American Health Organization (PAHO) / World Health Organization (WHO) Region of the Americas have been an effort without precedent, with astonishing results. All countries/territories in the Region slated for IPV introduction and the Switch in 2015–2016 (32 and 36 "countries" respectively)[1] managed to carry out the required decision-making, planning and preparation, implementation, and communication tasks, through their national immunization programs (NIPs), within the established timeframe.

To learn more about the facilitators and barriers for this unique achievement, PAHO's Regional Immunizations team conducted two country surveys (one on IPV introduction, and the other on the Switch). The purpose of this report was to document and analyze 1) the information collected from the survey respondents about their experience, including the lessons learned—an important part of Polio Legacy in the Americas, and 2) the processes that led to this highly successful experience in IPV introduction and the Switch. The summary and analysis of lessons learned—from the perspective of the countries in the Region, and PAHO/WHO and their partners—could help guide the introduction of other vaccines or the withdrawal of current ones (e.g., bOPV, once polio eradication has been achieved) by policymakers and health specialists in the Americas and other regions of the world.

[1] The 32 countries/territories that introduced IPV in 2015–2016 were Anguilla, Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Chile, Colombia, Cuba, Curaçao, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Montserrat, Nicaragua, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos, Venezuela, and Virgin Islands (UK). The remaining 19 countries/territories in the Region had already introduced IPV (prior to 2015).

The 36 countries/territories that implemented the Switch in 2015–2016 included the 32 countries listed above plus Brazil, Mexico, Panama, and Peru. The remaining 15 countries/territories in the Region were not using tOPV.

This global strategic plan aims to achieve a polio-free world—eradication

1. Polio Eradication & Endgame Strategic Plan ("Endgame Plan") 2013–2018

The Polio Eradication and Endgame Strategic Plan 2013–2018 ("Endgame Plan") was developed by the Global Polio Eradication Initiative (GPEI)[2] in extensive consultation with national health authorities, global health initiatives, scientific experts, donors, and other stakeholders. This global strategic plan aims to achieve a polio-free world—eradication and containment of all wild polioviruses (WPVs), vaccine-derived polioviruses (VDPV), and Sabin strains, while also taking advantage of the polio effort infrastructure to deliver other health services to the world's most vulnerable children (*1*).

The Endgame Plan has four main objectives:

1. **Detection and interruption of all poliovirus transmission**: This objective seeks to stop all WPV transmission and any new outbreaks due to a cVDPV, within 120 days of confirmation of the index case, by enhancing global poliovirus surveillance, improving oral poliovirus vaccine (OPV) campaign quality to reach children in the remaining endemic countries, and ensuring rapid outbreak response.
2. **Strengthening of routine immunization systems, introduction of IPV and withdrawal of OPV**: This objective seeks to hasten the interruption of all poliovirus transmission and help build a stronger system for the delivery of other lifesaving vaccines. Success in eliminating cVDPVs depends on the eventual withdrawal of all OPV, beginning with the withdrawal of the type 2 component of tOPV, which occurred in April 2016 with the globally synchronized switch from tOPV to bOPV ("the Switch"). As part of this objective, prior to the Switch, the Endgame Plan called for all countries to introduce one dose of IPV in their routine NIP.
3. **Certification of eradication and containment of residual polioviruses**: All 194 WHO Member States will be engaged in the work required to meet this objective—which aims to certify all regions of the world polio-free and ensure that all poliovirus stocks are safely contained. This work includes finalizing international consensus on long-term biocontainment requirements for polioviruses. Making

[2] The Global Polio Eradication Initiative is a public-private partnership led by national governments with five partners—WHO, Rotary International, the U.S. Centers for Disease Control and Prevention (CDC), the United Nations Children's Fund (UNICEF), and the Bill & Melinda Gates Foundation (BMGF).

sure that these standards are applied is a key element of certifying eradication. Through the period of this Plan, all six WHO regions will have their Regional Certification Commissions (RCCs) review documentation from all countries and verify the absence of WPV in the presence of certification-standard surveillance.

4. **Planning for post–polio eradication transition ("legacy planning"):** The final objective is to ensure that the world remains permanently polio-free and that the investment in polio eradication provides public health dividends for future generations. The work includes leveraging lessons learned from the fight against polio for other major health initiatives; and making use of the polio infrastructure as appropriate. (1).

1.1 IPV Introduction and the switch to bOPV ("the Switch")

The second objective of the Endgame Plan indicates that all OPV needs to be removed to allow for complete eradication of all poliovirus transmission, starting with the type 2 component. The plan recommended that all countries that had previously only used tOPV introduce at least one dose of IPV into their routine immunization programs prior to the global switch from trivalent oral polio vaccine (tOPV) that contains all three types of poliovirus, to the bivalent vaccine (bOPV) which contains only types 1 and 3. The objective of introducing at least one dose of IPV in the routine vaccination schedule was to have protection against poliovirus type 2 in case of VDPV type 2 emergence or a failure in containment of poliovirus type in laboratories.

In 2014, the Regional (PAHO) Technical Advisory Group on Vaccine-preventable Diseases (TAG) endorsed IPV introduction and the switch from tOPV to bOPV in the Americas. In October 2015, WHO's Strategic Advisory Group of Experts on Immunization (SAGE) confirmed a two-week window (17 April to 1 May 2016) for the global Switch and called for the withdrawal of tOPV from the world market. Once global eradication of polio is certified, use of bOPV will also cease. Figure 1 shows the timeline for IPV introduction, the Switch, and OPV cessation.

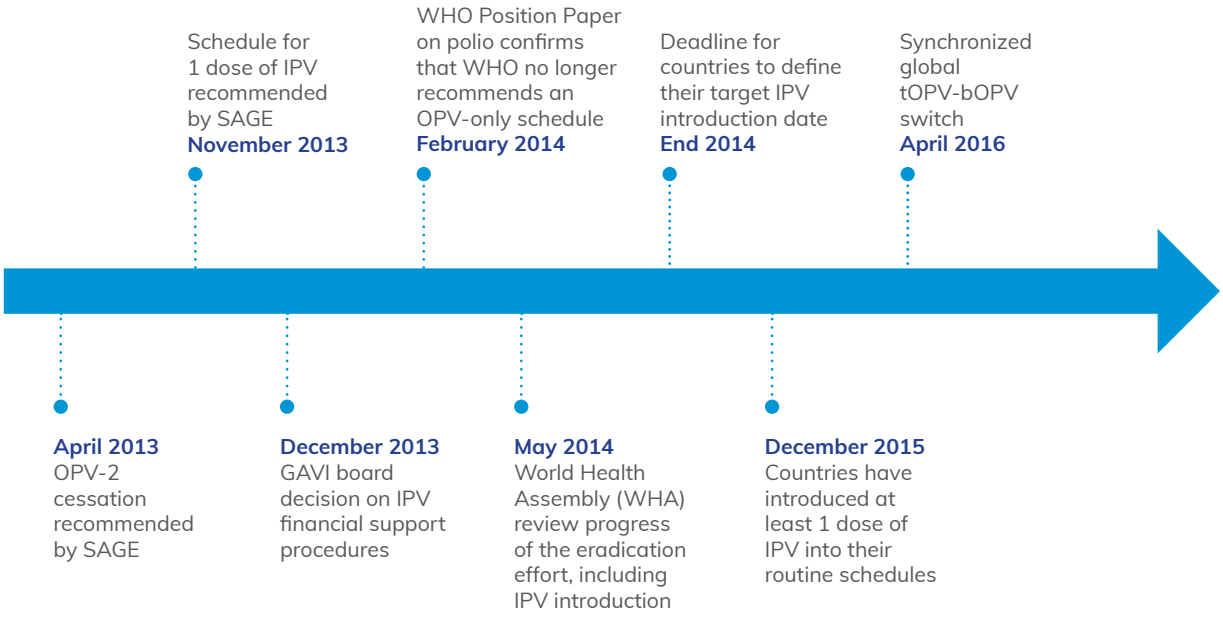
1.2 Progress and remaining challenges

Strong progress toward global polio eradication has been evident in the past few years, with more and more children in the remaining endemic countries now fully protected, and thus a declining number of WPV cases worldwide.

Certification of WHO Regions as polio-free

The Region of the Americas reported its last case of polio in

Figure 1: Timeline for IPV introduction and the Switch



Source: (2).

1991, and was certified by the International Commission for the Certification of Poliomyelitis Eradication for the Americas (ICCPE) as polio-free in 1994. In the 25+ years since the certification of eradication, the Region has had only one outbreak of polio, in Haiti and the Dominican Republic (2000–2001), caused by cVDPV type 1.

WHO's Western Pacific Region (WPRO) was certified polio free in 2000, the European Region (EURO) achieved certification in 2002, and the South-East Asia Region (SEARO),[3] was certified as polio-free in 2014[4]—an impressive achievement given that countries in the region, such as India, were, until recently, endemic for the disease. With this latest achievement in polio eradication, more than 80% of the world's population now lives in polio-free regions. The number of countries with endemic polio has dropped from 125 (in 1988) to the current total of three—Afghanistan, Nigeria, and Pakistan, where only 37 cases were reported in 2016 (3).

[3] Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, and Timor-Leste.

[4] For details about this process see the 27 March 2014 press release from WHO's South-East Asia Region: **http://www.searo.who.int/mediacentre/releases/2014/pr1569/en/**

Nonetheless, vaccine coverage levels are still not optimal, especially in insecure and politically unstable areas. In addition, as polio is an epidemic-prone disease, ongoing endemic transmission in these three countries will continue to threaten polio-free areas everywhere, until the disease is eradicated.

Cessation of OPV

Meeting the global polio eradication goal of eliminating all wild and vaccine-related viruses requires that the use of OPV must eventually be stopped. Until all wild polioviruses are eradicated, however, most countries will continue to use OPV, which is still considered the most effective vaccine against WPVs. The eventual withdrawal of OPV will be done in phases, and has already begun, with the elimination of the type 2 component of tOPV. OPV withdrawal began with type 2 because no cases of WPV2 have been detected since 1999, and the continued use of OPV2 presented more risks than benefits due to the potential for reemergence of type 2 cVDPV. In accordance with the timeline in Figure 1, between 17 April and 1 May 2016, 155 countries worldwide (including the 36 countries in the Americas) simultaneously carried out the Switch—withdrawal of the tOPV, which contains all three types of poliovirus, and replacement with the bOPV, which only contains poliovirus types 1 and 3.

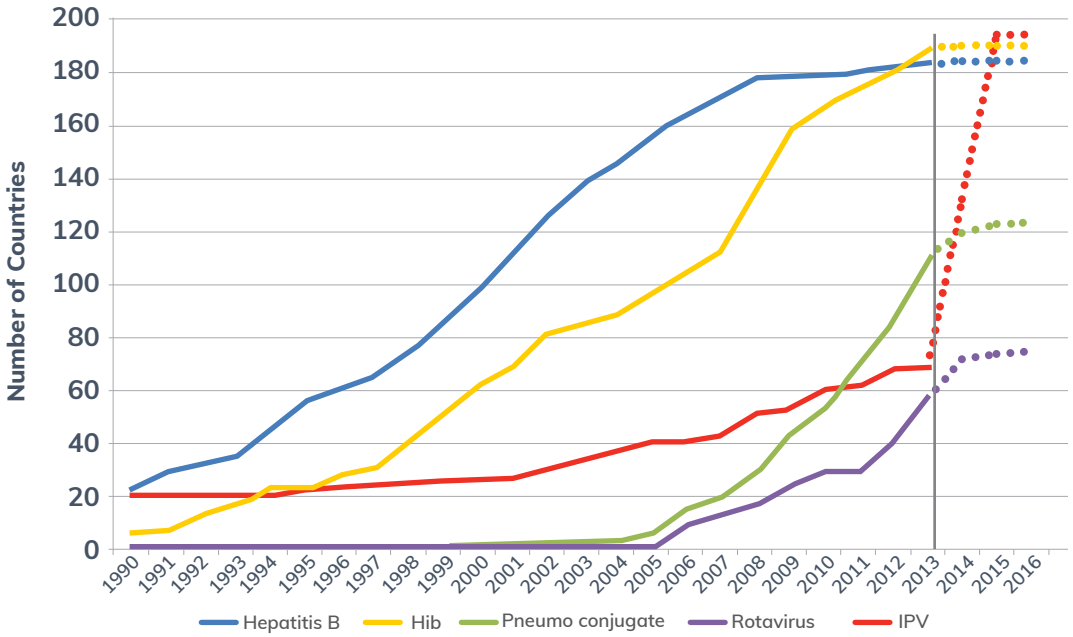
Global introduction of IPV: a public health milestone

Prior to the SAGE recommendation in 2013 that countries include one dose of IPV in their immunization schedules (Figure 1), 126 countries worldwide (including 32 countries in the Americas) did not use IPV. Therefore, 126 countries had to introduce a new vaccine in their routine immunization programs by end of 2015—the fastest and largest global introduction of a vaccine in public health history (1). As shown in Figure 2, the introduction of some vaccines on a global scale has taken more than 10 years.

Shortages in IPV supply

Unfortunately, due to unforeseen global shortages of IPV, 20 countries in other WHO Regions (Africa, Eastern Mediterranean, Europe, and Western Pacific) were unable to introduce the vaccine by the intended deadline, and another 30+ countries experienced inventory shortfalls. In addition, although all 32 countries in the Americas that had not used IPV previously were able to introduce it between early 2015 and early

Figure 2: Timeline for introduction of the hepatitis B, Haemophilus influenzae type B (Hib), pneumococcal conjugate, and inactivated polio vaccines, by year and number of countries, 1990–2013



Source: Global Polio Eradication Initiative.

Material to discard
Colombia 2016

2016, in March 2017, in response to the vaccine shortages, PAHO's TAG recommended that countries in the Region using more than 100,000 doses of IPV per year switch to fractional doses. Details about this recommendation are available in the *Ad-hoc TAG Final Report, March 2017* (4).

TAG requested that PAHO convene a Polio Working Group to adapt the plan for the Region of the Americas

2. IPV Introduction and the Switch in the Americas

In July 2013, after the GPEI's development of the Global Endgame Plan, the Regional (PAHO) TAG requested that PAHO convene a Polio Working Group to adapt the plan for the Region of the Americas. With oversight from TAG, the group was tasked with analyzing 1) polio epidemiology and immunization strategies in the Region, and 2) the various vaccination policy scenarios available in the Region, within the context of the global push toward polio eradication. Based on those assessments, the Polio Working Group made recommendations to TAG on how to adapt the Endgame Plan for the Americas, with a focus on IPV introduction (5).

A WHO position paper on polio vaccines, published in January 2014, recommended a vaccination schedule consisting of a primary series of three OPV doses, and at least one IPV dose, with an additional dose of OPV at birth for endemic countries and countries with high risk of case importation. It also included the following guidelines: "If 1 dose of IPV is used, it should be given from 14 weeks of age (when maternal antibodies have diminished and immunogenicity is significantly higher) and can be co-administered with an OPV dose. Countries may consider alternative schedules based on local epidemiology, including the documented risk of vaccine-associated paralytic polio (VAPP) prior to 4 months of age. In countries with high immunization coverage (e.g., 90%–95%) and low importation risk (neighboring countries and connections with similarly high immunization coverage) an IPV–OPV sequential schedule can be used when VAPP is a significant concern" (6).

Based on these guidelines, and on Regional epidemiology, the Polio Working Group decided that the evidence pointed to recommending IPV as first dose, for maximum benefit, and because about 50% of VAPP cases in the Region are due to the first OPV dose (5, 7). The TAG recommended that countries in the Americas follow a sequential schedule, and included the following guidelines: "Countries should consider two IPV doses followed by two OPV doses. However, if a country is considering only one IPV dose, this should be administered with the first DTP dose and followed by three OPV doses" (8).

Prior to the decision to introduce IPV Region-wide, BMGF conducted an immunological study of the use of one dose of IPV in Chile, and multiple studies of combination OPV-IPV immunization in Cuba, which

served as key evidence in support of the decision-making process in the Region. This study conducted in Chile assessed immunogenicity in infants after two different IPV-bOPV schedules, compared with an all-IPV schedule. The study concluded that seroconversion rates against polioviruses types 1 and 3 after the sequential IPV-bOPV schedules were non-inferior to those found after an all-IPV schedule, and that the proportion of infants with protective antibodies was high after all three schedules (9). Furthermore, one or two doses of bOPV after IPV boosted intestinal immunity for poliovirus type 2, suggesting possible cross-protection (9). The study also showed evidence of humoral priming for type 2 from one dose of IPV, suggesting that after the use of mOPV2 to control outbreaks of wild-type 2 or cVDPV2 after the switch to bOPV, humoral immunity could be achieved in more than 90% of infants previously given one dose of IPV containing type 2 (9).

The written plan was instrumental to avoid excessive bureaucracy within the Ministry of Health for the introduction of the vaccine.

Ecuador

2.1 Implementation of IPV introduction and the Switch

Technical support from PAHO's Regional Immunizations team

After the Polio Working Group was convened in January and March 2014 to adapt the Endgame Plan to the Regional situation, TAG held a virtual meeting in April 2014. Recommendations from the meeting included support of the renewed polio eradication efforts, and Endgame Plan eradication goals, including the permanent withdrawal of OPV from routine vaccination programs, and the use of sequential schedules. In addition, to verify that the requirements for Polio Endgame, the TAG recommended that all countries form National Certification Committees (NCCs) composed of independent experts in different areas of public health (8).

Based on TAG's recommendation, and the urgent need to introduce IPV and carry out the Switch, PAHO's Regional Immunizations team developed a comprehensive technical cooperation strategy. The strategy included organizing and conducting several virtual and face-to-face meetings, and developing and adapting different types of support materials (technical documents, training materials, and communications materials) to maximize the chances of successful implementation of both the IPV introduction and Switch.

PAHO also provided significant

direct technical cooperation, including visits to selected countries before they carried out the Switch, to ensure maximum preparedness and avoid delays.

Meetings/information exchange

In July 2014, TAG met again and reiterated its recommendations related to polio eradication activities. A few weeks later, PAHO conducted a ***virtual meeting*** with the countries to provide more information and convey the need to introduce IPV Region-wide (10). Afterward, a group of immunization experts was convened to develop a PAHO practical guide for IPV introduction (2).

There was constant feedback between the Ministry of Health and the subnational level. We conducted exercises in which regions and territories got together to discuss the technical issues surrounding administration of the vaccine and cold chain.

Colombia

In November 2014, PAHO convened the face-to-face ***First Regional Polio Meeting*** in Cancun, Mexico, to discuss the implementation of the Endgame Plan 2013–2018 for the Americas, with an emphasis on IPV introduction in routine immunization programs. During this meeting, the IPV introduction guide (2) was disseminated and the countries were informed that the global supply of IPV only allowed for the introduction of one dose of the vaccine in each country (except in countries that had already introduced it in their vaccines schedules, in which case the schedules were not changed) (11).

By the first quarter of 2015, PAHO had received a formal commitment from the 32 countries in the Region that had not yet introduced IPV to carry out the introduction of the vaccine. PAHO formed a new Regional Certification Commission (RCC) for the Polio Endgame in the Region of the Americas, tasked with the role of following the implementation of the Endgame in the Americas, which met for the first time in June 2015.

In August 2015, PAHO convened the ***Second Regional Polio Meeting*** in Bogotá, Colombia, to discuss the Endgame Plan, and analyze advances in the development of national plans to carry out the Switch, and discuss the new guidelines to develop plans for detection, notification and response for poliovirus type 2 detection post-Switch (12).

In October 2015, PAHO's Director issued a ***formal letter to Ministries of Health of the Americas*** informing them about the declaration of global eradication of WPV2 by the GCC and noting the significance of the declaration in terms of preparation for the phased removal of OPV, beginning with the Switch, and preceded by the introduction of IPV (13). The letter also stated that SAGE had confirmed the date for the global Switch as April 2016, and that the Ministers' leadership would be crucial to this process (13).

The ***Third Regional Polio Meeting*** was held on 30 November and 1 December 2015 in Brasilia, Brazil. The objectives of the meeting were to update NCCs, about their roles and responsibilities in the final phase of polio eradication, and National Polio Containment Coordinators (NPCCs), about their roles and responsibilities for the containment of poliovirus. Twenty-four countries were represented at the meeting.

Support materials. Part of the countries' success depended on the availability of technical and communication materials to support the IPV introduction process. Due to time and financial constraints, as well as, sometimes, a lack of technical capacity on specific technical issues, countries often find it challenging to develop their own materials.

To help countries overcome this challenge, and to promote the use of uniform materials and communication messages across the Region, PAHO developed a practical guide for IPV introduction (3), and adapted and expanded materials developed by GPEI's Immunization Systems Management Group (IMG).[5] These materials were shared with the countries, in editable formats (Microsoft Word documents or PowerPoint slides), to allow for adaptation as needed.

They included technical documents, training and communications materials.

Technical documents. PAHO's practical guide for IPV introduction, available in English, French and Spanish (2), presents relevant technical information, and describes strategies to help national health teams plan and prepare for the introduction of IPV in their routine vaccination programs. The primary audience for the guide includes national and subnational program managers and decision-makers.

Training materials and tools. The introduction of IPV meant that every frontline health worker across all levels needed to be

[5] Representatives from the polio program and routine immunization program of the following core partners: BMGF; CDC; Gavi, the Vaccine Alliance; Rotary International; Task Force for Global Health (TFGH); UNICEF; and WHO.

trained and equipped with the skills required for proper administration and registration of IPV and communication with caregivers and communities about polio and IPV. To support countries in developing proper training for health care workers, WHO developed training modules to address each required step in IPV introduction—from vaccine administration, to "cold chain," to adverse events, to communication. PAHO then adapted the materials to the Region of the Americas and shared the modules with the countries in an editable format so that countries could further adapt them to their specific needs.

The IPV training materials consist of seven PowerPoint modules (14):

- *Module 1: Introduction to the polio endgame rationale and IPV vaccine*
- *Module 2: Inactivated poliovirus vaccine (IPV) attributes and storage requirements*
- *Module 3: IPV schedule, eligibility, and contraindications*;
- *Module 4: IPV vaccine administration*
- *Module 5: Recording and monitoring administration of the inactivated poliovirus vaccine (IPV)*
- *Module 6: Monitoring Events Supposedly Attributable to Vaccination or Immunization (ESAVIs)*
- *Module 7: Communication with parents, caregivers, and health personnel about IPV and multiple injections*)

Another training document—*Multiple Injections: Acceptability and Safety* (15)—was developed to help health care workers understand the important role they play in the public's acceptance of the IPV, and the evidence of vaccine safety. This document also provides evidence on the safety of vaccine co-administration, and guidelines for introducing a new injectable vaccine, including appropriate answers to common questions from patients and caregivers, in order to improve communications messaging, like the publications listed below.

Communications materials and tools. Various communication materials and tools were developed for use by NIP managers and communication specialists, including the *Issues Management Guide* (16) and the *Media Resource Kit* (17). The *Issues Management Guide* was designed to help countries produce communications material about unexpected situations, and included guidance on 1) providing a rationale for OPV cessation and IPV introduction, 2) determining whether to respond or communicate about a specific issue, 3) best practices for developing a communication plan and key messages, and 4) managing reactive issues. The *Media Resource Kit* contains practical guidance on 1) developing key messages for IPV introduction, including spokesperson question and answers; 2) avoiding common errors in communication activities; 3) writing press releases, and 4) organizing a press conference.

We had a virtual call with communications people from the countries, and we explained the Switch, and the tools that were going to be available. PAHO allowed the countries to adapt the materials as needed, which is crucial. Internal transparent and clear communication was also key to the success of the switch.

Lauren Vulanovic,
Communication Specialist, FGL/PAHO

In 2015, all support materials were made available in English, French, and Spanish, through the PAHO website,[6] and direct email communications to in-country PAHO immunization focal points. In addition, "walk-throughs" of the materials were performed via virtual training sessions and during face-to-face Regional meetings. PAHO's in-country communication focal points and their immunization counterparts were involved in the development of the communication materials to allow for a more integrated approach to the use of the materials in each local setting. Given the multiple languages spoken in the Region, the discussions and training sessions were conducted with simultaneous translation.

Guidelines. WHO sent guidelines for the Switch to PAHO headquarters, where they were translated and then shared with countries. PAHO asked the countries to share their plans for the Switch by mid-2015 so that they could be reviewed by PAHO's Immunizations team to ensure that they were complete.

Dashboard. PAHO also developed a dashboard for monitoring the countries' implementation of key preparation activities for the IPV introduction and Switch. Country representatives were asked to update the dashboard each month with the latest status of these activities. The dashboard listed 41 activities, and the optimal period for their implementation to guarantee a safe vaccine switch, and thus allowed for quick identification of any part of the program falling behind schedule or requiring greater attention. Of the 41 activities, 18 were designated as "milestones"—important steps that once completed helped ensure a successful Switch, whereas failure to meet them compromised the safety of the vaccine switch in the country and, consequently, in the Region. This tool was useful for RCC and NCC members, NIP managers and personnel, and PAHO to follow up with the progress and detect difficulties or delays. Figure 3 shows the steps and milestones from the dashboard.

[6] http://www.paho.org/hq/index.php?option=com_content&view=article&id=10461%3A2015-ipv-training-modules&catid=1875%3Apolio-highlights&Itemid=2244&lang=en

Figure 3: Activities and milestones tracked by the PAHO dashboard to gaurantee a safe Switch

N°	Quarter	Milestone	Activity
1	2015, Q-2		First tOPV Inventory
2	2015, Q-2	*	National Certification Committee is formed
3	2015, Q-3		Estimation of needs of tOPV through April 2016
4	2015, Q-3	*	Estimation of needs of bOPV for April 2016
5	2015, Q-3	*	Development and apporval of National Switch plan, including a timeline and budget
6	2015, Q-3	*	bOPV is licensed, if necessary
7	2015, Q-3		National Coordination Committee is established
8	2015, Q-3		Departmental Coordination Committees are established
9	2015, Q-3		Municipal Coordination Committees are established
10	2015, Q-3		Revision of the country regulations for disposing of vaccines and identification all disposal centers and mechanisms for destructions
11	2015, Q-4		Development of a training plan
12	2015, Q-4	*	Development of training materials for health workers
13	2015, Q-4		Development of training materials for institutions and organizations involved in the process
14	2015, Q-4		Workshop for Health Authorities and technical professionals at the departmental level
15	2015, Q-4		Workshop for Health Authorities and technical professionals at the municipal level
16	2015, Q-4	*	Identification of technical professionals that will support the Switch process
17	2015, Q-4		Adaption of forms and informations systems for vaccine doses applied
18	2015, Q-4		Evaluation the storage capacity at all levels of the cold chain
19	2015, Q-4		Second tOPV inventory
20	2015, Q-4	*	Development of a tOPV withdrawal and disposal plan
21	2015, Q-4		Simple sticker design that says: "DO NOT USE tOPV"
22	2015, Q-4		Development of supervision/monitoring plan
23	2015, Q-4		Development of bOPV distribution plan
24	2016, Q-1	*	Switch funds are available at all levels
25	2016, Q-1	*	Selection and training of Switch Supervisors
26	2016, Q-1	*	Training of health workers at all levels
27	2016, Q-1	*	Arrival of bOPV at the national level
28	2016, Q-1		Inform regions and districts of the nearest disposal sites
29	2016, Q-1	*	Confirmation that disposal sites are ready
30	2016, Q-1		Training of independent switch monitors
31	2016, Q-1	*	Distribution of bOPV and registration forms to all health levels
32	2016, Q-2 Switch	*	Removal of tOPV from cold chain, and placement in boxes/bags with stickers that say "DO NOT USE tOPV"
33	2016, Q-2 Switch		All tOPV from the vaccination posts are returned to the municipal level
34	2016, Q-2 Switch	*	All tOPV is sent to the closest disposal center
35	2016, Q-2 Switch		Supervisor revision that all tOPV has been removed and bOPV is in use
36	2016, Validation		Switch monitor reports are compiled
37	2016, Validation	*	Independent switch monitors confirm the withdrawal of tOPV
38	2016, Validation		Development of Final Switch Report
39	2016, Validation	*	Final Switch Report is sent to the National/Subregional Certification Committee
40	2016, Validation		Declaration confirming withdrawal and disposal of tOPV is drafted
41	2016, Validation	*	Declaration has been sent to National/Subregional Certification Committee

Roles and contributions of other partners

The remarkable success of the IPV introduction and Switch in the Americas would not have been possible without the support of several international and regional partners, particularly through the collaboration of the IMG partners including WHO Headquarters, UNICEF, the CDC, the TFGH, and Gavi. These agencies provided valuable support to the Region, including technical and/or financial support for decision-making, planning and preparation, implementation, and validation for both IPV introduction and the Switch.

The UNICEF Regional Office for Latin America and the Caribbean played a role in advocacy, social mobilization, and preparation and validation for the Switch.

Financial support from multiple international sources was channeled through Gavi and GPEI for some countries. These funds supported gaps in national budgets for IPV introduction and the Switch, principally for coordination, planning and preparation, social mobilization, advocacy, training, human resources, and evaluation.

Some countries reported additional technical and financial support from other partners, such as Rotary International, which played an important role in the promotion of IPV introduction and in independent monitoring of the Switch.

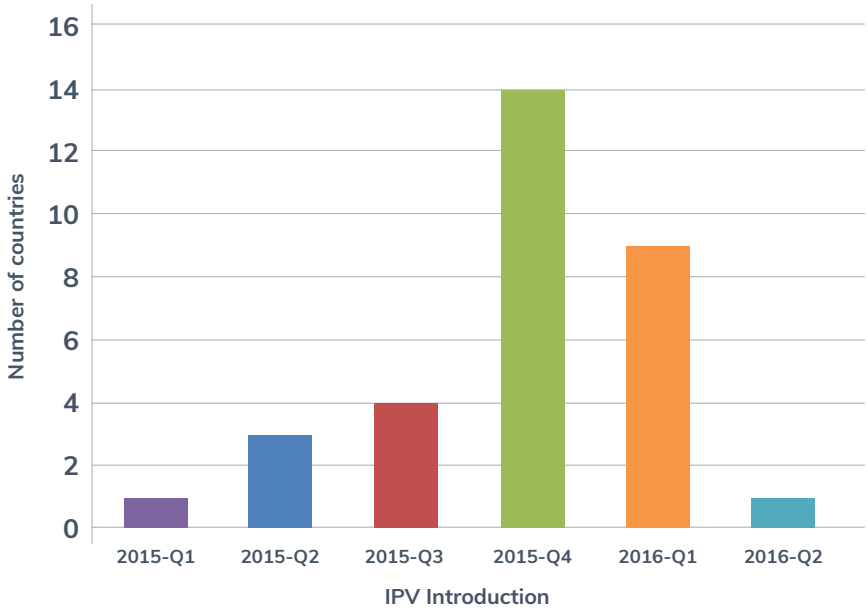
Team responsible for disposal of tOPV
Colombia 2016

2.2 IPV introduction: process, evaluation, analysis, and results

Nineteen countries in the Americas were already using the IPV in their national immunization schedule when TAG recommended the introduction of IPV Region-wide in 2014. The remaining 32 countries introduced IPV over the next two years (22 countries in 2015 and 10 countries in the first four months of 2016). Figure 4 shows the names and number of countries that introduced IPV each quarter during 2015–2016.

Although 12 countries had initially planned to introduce more than one dose of IPV, because of the global vaccine shortage, the PAHO Regional Immunizations polio team ultimately recommended the use of only one dose of IPV in all countries (except those that were using a schedule with multiple IPV doses before 2015).

Figure 4: Timeline for IPV introduction: number of countries per quarter (Q), Region of the Americas, 2015–2016[a]



[a] **2015-Q1**: Colombia; **2015-Q2:** Anguilla, Grenada, Saint Vincent & the Grenadines; **2015-Q3:** Dominica, Guyana, Jamaica, Turks and Caicos; **2015-Q4:** Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominican Republic, Ecuador, Honduras, Nicaragua, Paraguay, Saint Kitts & Nevis, Saint Lucia, Suriname, Trindad and Tobago, Virgin Islands (UK); **2016-Q1:** Bolivia, Chile, Cuba, Curaçao, El Salvador, Guatemala, Haiti, Montserrat, Venezuela; **2016-Q2:** Argentina.

PAHO survey for countries that introduced IPV

To analyze the implementation process, in March 2016, PAHO sent out a survey on IPV introduction via email to the 32 countries in the Region that had completed it in 2015 or 2016 as part of the Endgame Plan. The survey (Annex A) was directed to the immunization focal points in each PAHO country office with the request that the NIP team complete it and return it to PAHO headquarters within one month. Of the 31 survey questions, 11 required either nominal (multiple-choice) or brief descriptive responses (e.g., time involved in the decision-making process, date of IPV introduction, etc.). The other 20 questions were open-ended and requested lengthier descriptive responses about the IPV introduction process, including neutral aspects and facilitators and barriers.

Of the 32 countries in the Region that implemented IPV in 2015–2016, all but one (Montserrat) completed the survey. The 31 respondents included 17 English-speaking countries in the Caribbean, one French-speaking country (Haiti), and 13 Spanish-

speaking countries from Latin America and Spanish-speaking Caribbean countries. Of the 31 respondents, 15 were island countries and 16 were non-island countries. This information helps provide context to the findings, as the island countries have some distinct technical and operational mechanisms that differentiate them from the non-island countries. For example, most of the Caribbean countries do not have a NITAG, and some countries have special logistical and communication challenges due to their geography.

Survey results

The main survey findings are provided below by category (decision-making, planning and preparation, IPV introduction, and communications). Qualitative content analysis was used to evaluate the responses to the open-ended question. One study limitation worth noting is that all countries completed the survey in March 2016 even though the vaccine was introduced at different times (e.g., some countries introduced IPV close to the survey date whereas others introduced it up to one year prior), creating the potential for recall and other types of bias.

Decision-making

One of the greatest successes of IPV introduction in the Region was the unprecedented speed of the countries in adopting the vaccine after the GPEI and TAG recommendation. Of the 31 countries, 26 (86%) made the decision to introduce IPV in six months or less, and 17 of them took only one to three months to introduce the vaccine.

About half of the countries that responded to the survey (15 out of 31) said the NIP was the sole initiator of the decision-making process. The remaining 16 countries said the NIP and Ministry of Health co-initiated the process. Several countries mentioned the Ministry of Health (7 out of 31) and professional associations (6 of 31) as national entities that provided support to the decision-making process. Twenty-four countries out of 31 said that PAHO and 12 other international and regional entities provided support. Not surprisingly, almost all countries (29 of 31) said that Ministry of Health authorities had the final say on the decision to introduce IPV. Only three countries said that the Presidency or the Ministry of Finance (or both) was involved in the final decision.

Partners were PAHO, UNICEF, Rotary Suriname, [and the] Ministry of Health, and where we had to deal with the districts, all [government administrative officials] were heavily involved.

Suriname

With the support of the MoH, we identified strategic key partners to support us throughout the process, and the pediatrics associations together with a political-technical leader were of huge help in this regard. Having this leader as president of the committee was very helpful, and then we went to present the plan to professors of all universities and to the pediatrics associations of the main provinces.

Nicaragua

Despite the World Health Assembly (WHA) mandate to introduce the vaccine, and TAG's recommendation endorsing the introduction, several countries chose to consult their National Immunization Technical Advisory Group (NITAG) prior to making the final decision. Most non-island countries in the Region (13 of 15) involved their NITAG in the process, whereas the Caribbean subregion decided to discuss the issue at their EPI managers meeting, which resulted in a subregional endorsement of both the IPV introduction and the Switch.

Surprisingly, the majority of the countries in the Region (21 of 31) did not report any difficulties in the IPV introduction decision-making process. Only four countries mentioned financial issues as a complication.

Global commitment was the most frequently mentioned factor facilitating the decision to introduce IPV (reported by 9 countries or 29%), followed by national political support and commitment (6 countries or 19%), a TAG recommendation (5 countries or 16%), and availability of supporting evidence to rationalize the change (4 countries or 13%).

The decision to introduce IPV was covered by the media in almost half the countries (14 of 31), with radio as the most popular medium, followed by newspapers, and then TV. In most of the countries that announced the decision through the media (9 of 14), the coverage was positive, but in a few (3 of 14 countries), the media had either expressed concern about adding one more shot to the well-child visit or had a neutral opinion about the introduction (2 of 14 countries).

Planning and preparation

Two-thirds of the countries (20 of 31) did not need to make changes to their EPI infrastructure to prepare for IPV introduction and the remaining one-third (11 of 31) did need to make changes. The required changes included expanding the cold chain (6 of 11 countries) and updating the immunization records and report forms to include IPV (4 of 11 countries).

To prepare health care workers for the introduction, all 31 countries used face-to-face training, and most of the countries (29 of 31) used printed materials. One-third of the 31 countries conducted virtual meetings, and a few used other strategies, including teleconferences.

Most countries (26 of 31) received technical support, about half of the countries (15 of 31) received financial support, and five countries received logistical support.

The staff was very worried about the fact that we had to add another injectable vaccine. So we made a practical demonstration of how to give the child the two injections at the same time to the regional supervisors and they recorded it with their phone and took it back to their health centers. And that gave everybody piece of mind.

Guyana

Vaccine introduction

Logistics. Of the 31 countries responding to the survey, 25 introduced IPV simultaneously nationwide and six countries introduced it in phases. The countries with phased IPV introduction included Barbados, Bolivia, Guyana, Haiti, Saint Kitts and Nevis, and Suriname.
In about two-thirds of the countries (22 of 31), introducing the IPV meant that children would receive three injectable vaccines (instead of two) in a single visit.

Communications

Communications messaging to parents and caregivers about IPV introduction was mostly in the form of printed materials (10 of 31 countries) and face-to-face talks (6 countries); one country also used radio. Health care workers only received printed materials (10 countries) and face-to-face communications (5 countries).
The general public received communication messages about the IPV introduction mostly by radio (16 countries) and printed communication (13 countries), along with TV programming (7 countries).

We had a communication plan for it, so there were flyers printed and posters printed to inform the general public; we worked with Rotary Suriname to get help with funding, and we organized a polio walk to raise awareness with vaccination, especially polio vaccination. Then we did the launch of IPV to mark the first IPV vaccination, which was held at a hospital and the Minister was there, as well as PAHO and UNICEF representatives…

Suriname

A surprising large number of countries (24 of 31) said they did not perceive any challenges in communications about the introduction of IPV. Of the seven countries that did mention challenges, four of them said they were related to the vaccine changing from a drop to a shot.

In about two-thirds of the countries (22 of 31), the public had a positive reaction to the IPV introduction. Representatives of nine of the countries said the public had initial concerns, but after the communication efforts, they embraced the change.

Lessons learned by countries

Several themes emerged from the survey responses about facilitators and barriers in the IPV introduction process. A summary of positive and negative factors is listed below.

Facilitators

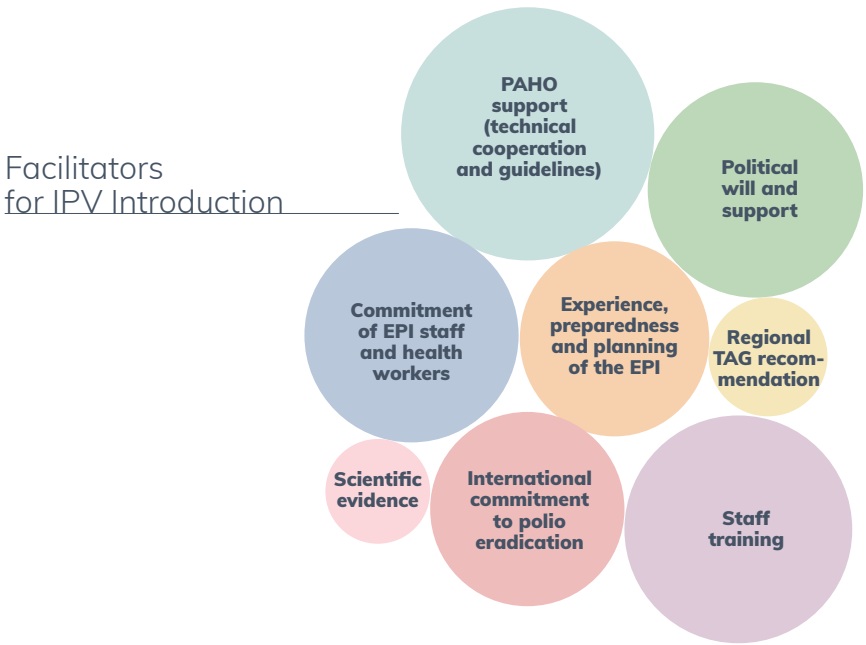
Overall, the dominant themes for facilitators of IPV introduction were 1) commitment, engagement, or buy-in from the different stakeholders, and 2) knowledge about the vaccine among different stakeholders. In terms of specific contributions, the support PAHO provided to the countries through either technical cooperation or

dissemination of guidelines and other materials was the most prominent facilitator for the Regional introduction of IPV, mentioned by more than two-thirds of the countries (23 of 31). Other important positive factors were staff training (mentioned by 19 of 31 countries); political will and support (17 of 31 countries); commitment of staff (17 of 31 countries); international commitment to the need for global IPV introduction to achieve polio eradication (14 of 31 countries); and the experience, preparedness, and planning of the EPI (13 of 31 countries). Figure 5 shows eight facilitators of the IPV introduction process by number of mentions by the 31 countries.

Barriers

The survey respondents mentioned four main barriers to the IPV introduction process, shown in Figure 6. Negative perceptions of the change in the vaccine from drops to a shot and/or the addition of one more shot per health service visit were the barriers most frequently cited (mentioned by 19 of 31 countries). For the majority of the countries (23 of 31), adding IPV to the routine immunization schedule meant three vaccine injections (versus two) for a 2-month-old child in a single visit. However, many countries that expressed concern about an increase in the number of injections per visit (9 of 31) also noted that

Figure 5: Eight facilitators of the IPV introduction process based on number of mentions from country survey respondents (n = 31), Region of the Americas, 2016



The size of each circle is proportional to the frequency in which the facilitator was mentioned by the countries.

after careful communications messaging, and training of health care workers, both the public and the staff felt reassured, and in the end the public had a positive reaction to IPV introduction.

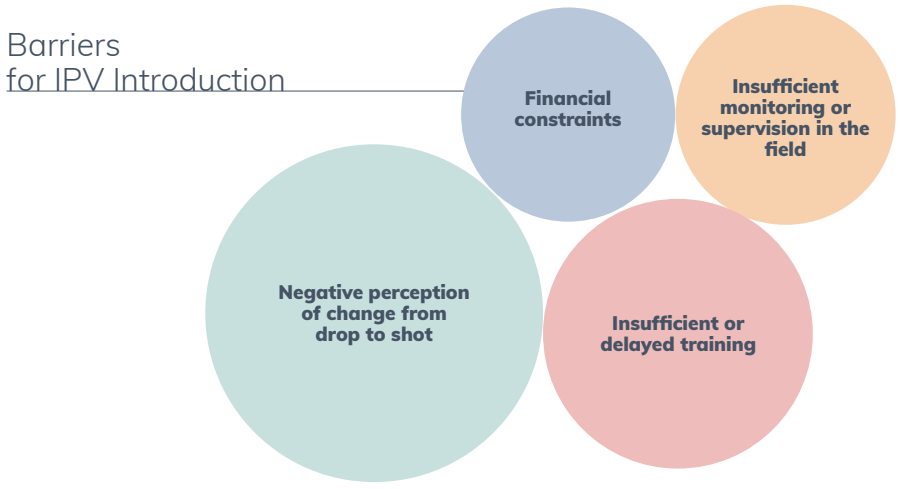
Staff training was the second most frequently mentioned barrier for IPV introduction, along with insufficient or delayed training (with 12 of the 31 countries mentioning one or both of those factors), reinforcing the notion that staff training played a pivotal role in the success of IPV introduction in the Region.

Eight of 31 countries reported financial constraints as a factor that hindered the IPV introduction process. Given this outcome, the commitment of the countries of the Americas to immunization in general, and polio elimination specifically, is clear, as all countries in the Region without exception introduced the vaccine regardless of financial constraints.

Insufficient monitoring or supervision in the field was another factor hindering the IPV introduction process, according to several countries (8 of 31).

A variety of other difficulties were reported, but only by a handful of countries for each one.

Figure 6. Main barriers to the IPV introduction process, by number of mentions from country survey respondents (n = 31), Region of the Americas, 2016



Barriers. The size of each circle is proportional to the frequency in which the facilitator was mentioned by the countries.

Reflections

When asked what they would have done differently in the IPV introduction process, 10 of the 31 country representatives did not state anything that they would have done differently. The rest (21 of 31) said they would make the following changes, among others:

- Increase communication about the vaccine introduction to doctors in the private sector and to other stakeholders (6 of 31 countries);
- Enhance supervision activities (5 of 31);
- Strengthen training of health care workers (4 of 31);
- Conduct earlier, better planning (3 of 31).

PAHO support materials.

More than 90% of the countries in the Region (28 of 31) used PAHO's practical guide for IPV introduction (2), and almost all of them (27) said it was very useful. The same proportion of countries used the technical documents, and 22 (67%) said they were very useful. About 70% of the countries used the IPV training modules (14) and every user said that they were very useful.

Country representatives made the following comments about the PAHO training materials:

- The materials were not as useful as they could have been because some of them arrived late, after we had already finalized our introduction and communication plan.
- There were multiple technical documents, and at times this was confusing. It would have been more efficient if there were only one or two documents, such as the practical guide (2) and guidelines for social communication.
- It would have been helpful to have had a feedback questionnaire to distribute to health workers and parents post-vaccination.

Technical support.

About two-thirds of the respondent countries (20 of 31) did not mention any type of technical support that they thought would have been useful but was not provided. The remaining 11 countries mentioned the need for 1) more in-country support (e.g., more presence of PAHO country office representatives in the field) (4 countries); 2) more support in the communication and dissemination of messages (2 countries); and 3) other types of support (5 countries).

It would have been better if we had a stronger communication plan, because the private sector was not aware of the rationale behind the introduction of IPV.

Ecuador

2.3 tOPV-to-bOPV switch: process, evaluation, analysis, and results

In April 2016, 36 countries in the Americas switched from tOPV to bOPV as part of the global Endgame Plan.

SWITCH DATES		
	Países/Countries	**Switch Date**
1	Anguilla	26-Apr
2	Antigua and Barbuda	26-Apr
3	Argentina	29-Apr
4	Bahamas	26-Apr
5	Barbados	26-Apr
6	Belize	25-Apr
7	Bolivia	18-Apr
8	Chile	27-Apr
9	Colombia	1-May
10	Cuba	19-Apr
11	Curacao	25-Apr
12	Dominica	26-Apr
13	Ecuador	1-May
14	El Salvador	29-Apr
15	Grenada	26-Apr
16	Guatemala	1-May
17	Guyana	26-Apr
18	Haiti	1-May
19	Honduras	29-Apr
20	Jamaica	26-Apr
21	Montserrat	26-Apr
22	Nicaragua	25-Apr
23	Panama	22-Apr
24	Paraguay	18-Apr
25	Peru	1-May
26	Dominican Republic	25-Apr
27	Saint Kitts & Nevis	26-Apr
28	Saint Lucia	26-Apr
29	Saint Vincent and the Grenadines	26-Apr
30	Suriname	26-Apr
31	Trinidad and Tobago	26-Apr
32	Turks and Caicos Islands	26-Apr
33	Venezuela	1-May
34	Virgin Islands (UK)	26-Apr
35	Brazil	Withdrew all tOPV on 31 March / First bOPV campaign in September 2016
36	Mexico	Withdrew all tOPV on 28 February / First bOPV campaign in October 2016

PAHO survey for countries that implemented the Switch

In July 2016, PAHO administered a survey about the Switch (Annex B) to representatives of the 36 countries through the same channels used to carry out the survey on IPV introduction (email communications between PAHO country office representatives and each country's NIP). All 36 countries completed the survey, and PAHO analyzed the information it received using the methodology described in the IPV introduction section above.

Survey results

Decision-making

All countries had Switch coordination committees to facilitate the Switch. In addition, 13 of the 36 countries had Regional-level committees, 10 had department-level committees, and eight had municipal-level committees. Some countries (11 of 36) used subcommittees, including those specializing in logistics, containment, surveillance, and communications, among others, to help coordinate the Switch. A little less than half of the countries (14 of 36) used an already-existing committee for this purpose.

The Ministry of Health departments most frequently involved in the Switch coordination committees included Epidemiology (7 countries), Public Health (6 countries), and Surveillance (3 countries), among others.

Most countries (25 of 36) indicated that other (non–health sector) ministries did not participate in Switch coordination committees. Some countries mentioned participation in the committee(s) by Ministries of Education (3 of 36), along with Ministries of Agriculture, Finance, Natural Resources and Environment, Defense, Interior, and Labor (1 of 36 countries for each one).

A total of 23 of 36 countries said actors outside the government participated in the Switch committee(s), including private institutions and individual professionals as well as members of Rotary International, professional associations, universities, and scientific societies, among others. Beyond their

In terms of the switch, some countries felt a little pressured with the timing, because of other activities that they had to complete, such as containment, a report of sustainability of measles, rubella, and CRS elimination, Vaccination Week in the Americas activities, and the submission of the WHO/UNICEF JRF. However, despite this, countries prioritized the Switch.

PAHO Caribbean Subregional Office

participation in the committees, these actors played a significant role in all stages of the Switch process, with 19 countries reporting participation of regional and international organizations, 10 reporting involvement of scientific societies, 6 reporting involvement of NGOs in the process, and 3 reporting support from Rotary International.

An important factor for our success during the Switch was hiring four independent consultants to verify that staff were trained prior to the Switch, and after the Switch to verify the absence of tOPV in the cold chain.

Nicaragua

Planning and preparation

The countries reported the development of specific plans for a variety of activities related to the Switch, including training (35 of 36 countries); bOPV delivery and distribution, and tOPV withdrawal and destruction (33 of 36); supervision (29 of 36); communication (22 of 36); and information systems (14 of 36).

All countries used face-to-face training as the main training methodology but also reported frequent use of a mixed methodology, including virtual training (29 of 36) and printed materials (27 of 36). More than two-thirds of the countries (27 of 36) used cascade training ("training of trainers") to train health providers participating in the Switch at different levels. The main training materials used were Microsoft PowerPoint presentations (all 36 countries) and printed materials (31 of 36 countries); about one-third of the countries used videos (14 of 36).

Almost half the countries (17 of 36) had to make changes to their information system in order to adapt it to the new schedule.

More than half the countries (20 of 36) said they implemented supplementary vaccination activities to prepare for the Switch. Of those, most (16 of 36) carried them out nationwide.

The Switch, data from LAC suggest that all countries were able to conduct the Switch successfully, which denotes a strong health service infrastructure.

Eliseu Waldman, RCC member

At first people wanted to know why [we were making] the Switch… It took a lot of explanations. We had to go to each region and explain, and share the guidelines.

Guyana

Logistics. Of the 36 countries, 24 received their delivery of bOPV at in-country health facilities before the day of the Switch, and nine received their supply of bOPV on the Switch day. The remaining three countries—Brazil, Cuba, and Mexico—only used OPV in their campaigns, so the logistics of their Switch plans were different. As shown in Table 1, in those three countries, the last tOPV campaign was conducted before the April 2016 Switch date, and the first bOPV campaign was conducted after the Switch date (Table 1).

Communications

A total of 29 of the 36 countries said they had targeted different audiences with specific communication activities. Almost all countries targeted health care workers; some countries also targeted parents and caregivers, the media, and the general public.

Almost all countries (34 of 36) conducted briefings with key stakeholders such as pediatricians, medical associations, and NGOs, before the Switch. Half of the countries (17 of 36) said they had organized or produced media or public communication activities

Table 1: Dates of last tOPV campaign (pre-Switch) and first bOPV campaign (post-Switch) in Brazil, Cuba, and Mexico, Region of the Americas, 2016

Country	Last tOPV campaign	First bOPV campaign
Brazil	August 2015	September 2016
Cuba	March 2016	February 2017
Mexico	February-March 2016	October 2016

One measure we used to know whether the communication was working was to see the tone of the messages in the media, and we saw mostly positive or neutral messages, which was a good indication that things were going well.

Lauren Vulanovic,
Communication Specialist, FGL/PAHO

or materials, such as press releases. In addition, half of the countries (17 of 36) said they had a risk communication or crisis communication plan in place. The most common communication materials reported by the countries were posters or brochures (mentioned by 18 of 36 countries), press releases (mentioned by 11 of 36 countries), and radio spots (mentioned by 10 of 36 countries).

Validation and supervision. All 36 countries validated the Switch through independent monitoring. A total of 30 out of the 36 countries implemented the validation of 100% of warehouses and 10% of vaccination services within the recommended 15-day period following the national Switch date and submitted validation reports to PAHO. The remaining six countries were able to complete the validation of the Switch, but required additional time. After the validation, all 36 countries completed their supervision of the Switch by visiting 100% of warehouses and vaccination services within three months of the Switch date with their regular staff. All country reports were reviewed first by the NCC and subsequently by the RCC (Table 2).

Table 2: Summary of the Switch supervision in warehouses and vaccination services and number of doses of tOPV destroyed, according to the country Switch reports (n = 36), Region of the Americas, 2016

Warehouses (n= 6,132)		Vaccination services (n=98,253)				Doses of tOPV leftover (n=5,995,247)	
# with tOPV in cold chain	# with tOPV outside cold chain without label	# with tOPV in cold chain	# with tOPV outside cold chain without label	% with bOPV[a] availability	% with IPV availability	# destroyed[b]	% destroyed[b]
50	11	11	220	31	95%	5,995,247	100%

a Three of the 36 countries (Brazil, Cuba, and Mexico) were not included in calculation as they only use bOPV in campaigns.
b Most countries used incineration to destroy their supply of tOPV.

Based on the visits to the 6,132 warehouses, 50 (0.8%) still had tOPV in the cold chain while 11 (0.2%) had tOPV outside the cold chain and not properly labeled. Based on the visits to the 98,253 vaccination services, 220 still had tOPV in the cold chain and 31 had tOPV outside the cold chain and not properly labeled. A total of 5,995,247 doses of leftover tOPV from warehouses and vaccine services were destroyed. The most common method of destruction was incineration. Of all service points across the 33 (out of 36) countries that use bOPV in their routine immunizations, 95% had the bOPV vaccine. Of all service points across all 36 countries, 97% had IPV available. Of the 3% of service points that did not have IPV available, 2.5% were in one country, which, at the time of the survey, had difficulty obtaining their supply of IPV.

We are going through a period of high risk of infectious diseases worldwide, and it seems that the containment and switch activities constitute a great learning experience for future challenges.

Eliseu Waldman,
RCC member

Lessons learned by countries

Facilitators

Facilitators ("best practices") for the Switch are shown in Table 3.

We started providing the bOPV to the medical missions in remote areas earlier than the Switch date, but we packed it in a special manner and labeled it to make sure it was not administered prior to the Switch date. Then we did an inspection to ensure that all the tOPV was removed... . We didn't have difficulties except for the fact that the medical missions delivered the tOPV a little bit later than they should have. The three missions that handled it had bad weather, so the boat and car trip had to be delayed a few days...

Barriers

A total of 42% of the countries (15 of 36) said they did not encounter any obstacles in the planning process. About half of the 21 countries that did encounter obstacles mentioned concomitant events as a factor that made the planning more difficult (11 countries).

A total of 39% of the countries (14 of 36) did not mention any obstacles in the implementation of the Switch. Vaccine transportation–related issues (cited by 7 countries) were the most frequently mentioned obstacles.

Of the 36 countries, 11 (30%) did not mention any obstacles in the validation process. The remaining countries mentioned insufficient financial resources to carry it out, or delays in receiving the validation forms from the lower level of the NIP.

Table 3 and Figures 7 and 8 show positive and negative factors (facilitators and barriers) affecting the Switch, from the countries' perspectives.

We should have done an evaluation [beforehand] — sat down with each coordinator and observed each installation — which ones were functioning and which ones were not — and evaluated the cold chain status. We should have verified that the status of health centers in each region was as reported.

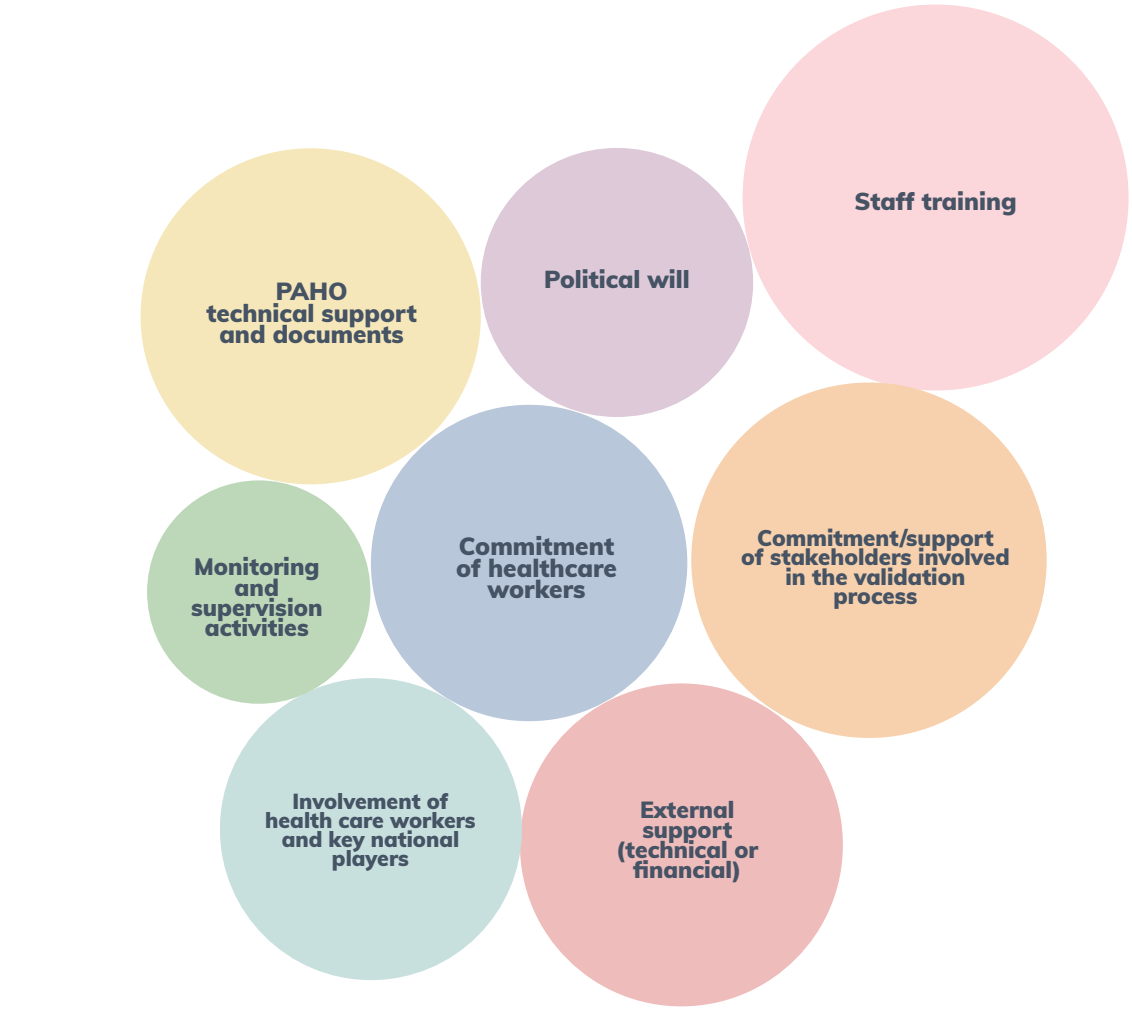
Panama

Mother takes her child to receive bOPV, *Colombia 2016*

Table 3: The tOPV-to-bOPV Switch: "best practices" and recommendations

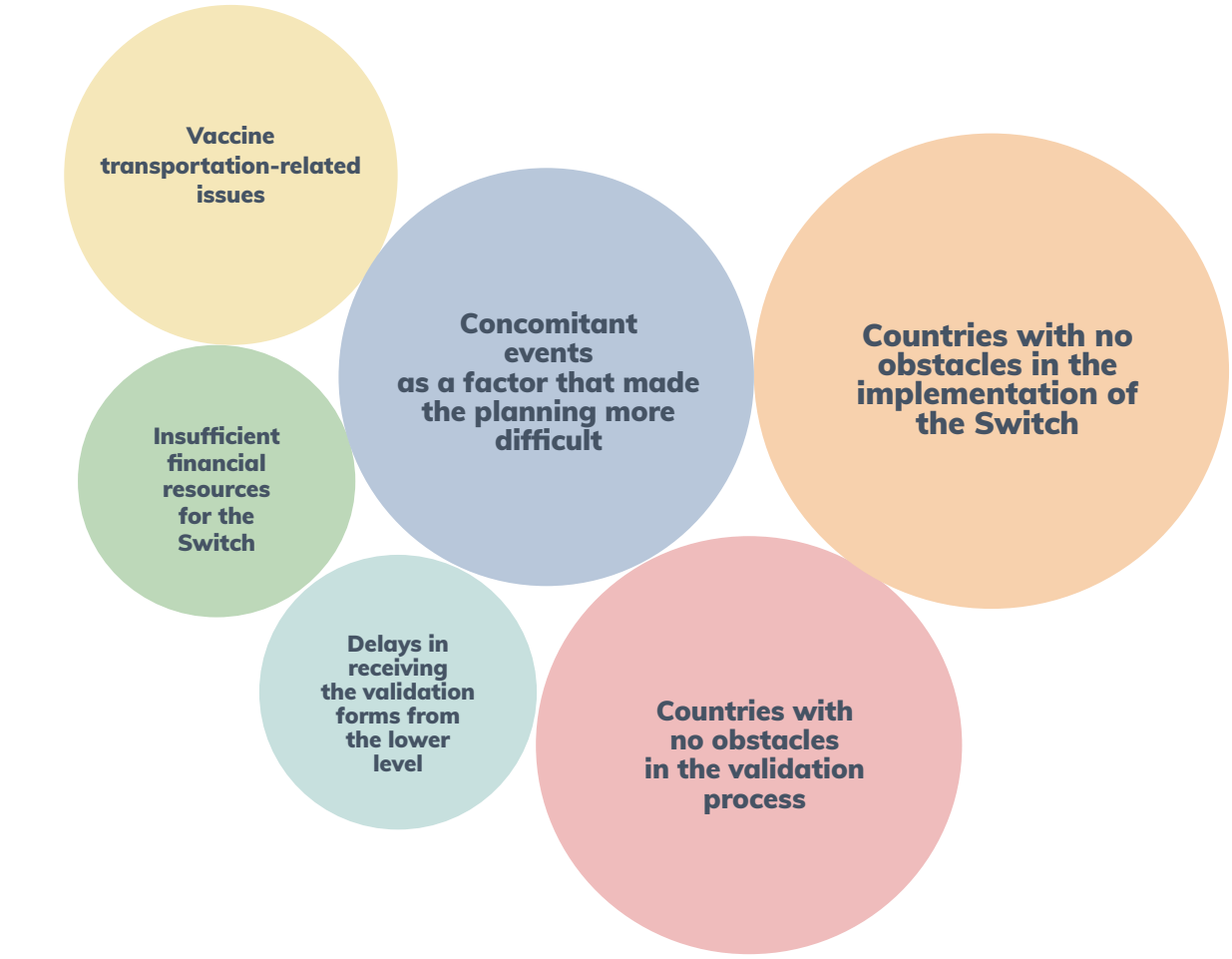
Facilitator mentioned most frequently overall:
Commitment of health care workers (cited by 19 of 36 countries)
Facilitator mentioned most frequently by area:
Planning
Staff training (cited by 15 countries)
PAHO technical support and documents (cited by 11 countries)
Commitment of health care workers (cited by 9 countries)
Involvement of health care workers and key national players (cited by 9 countries)
Political will (cited by 7 countries)
Implementation
Commitment of health care workers (cited by 10 countries)
Monitoring and supervision activities (cited by 5 countries)
Staff training (cited by 4 countries)
Validation
Commitment/support of stakeholders involved in the validation process (cited by 12 countries)
External support (technical or financial) (cited by 10 countries)
Recommendations
Earlier initiation of planning (cited by 5 countries)
More supervision (cited by 5 countries)

Figure 7: Eight facilitators of the Switch based on a survey of countries (*n* = 36), Region of the Americas, 2016



The size of each circle is proportional to the frequency in which the facilitator was mentioned by the countries.

Figure 8: Main barriers to the switch to bOPV based on a survey of countries (*n* = 36), Region of the Americas, 2016



The size of each circle is proportional to the frequency in which the barrier was mentioned by the countries.

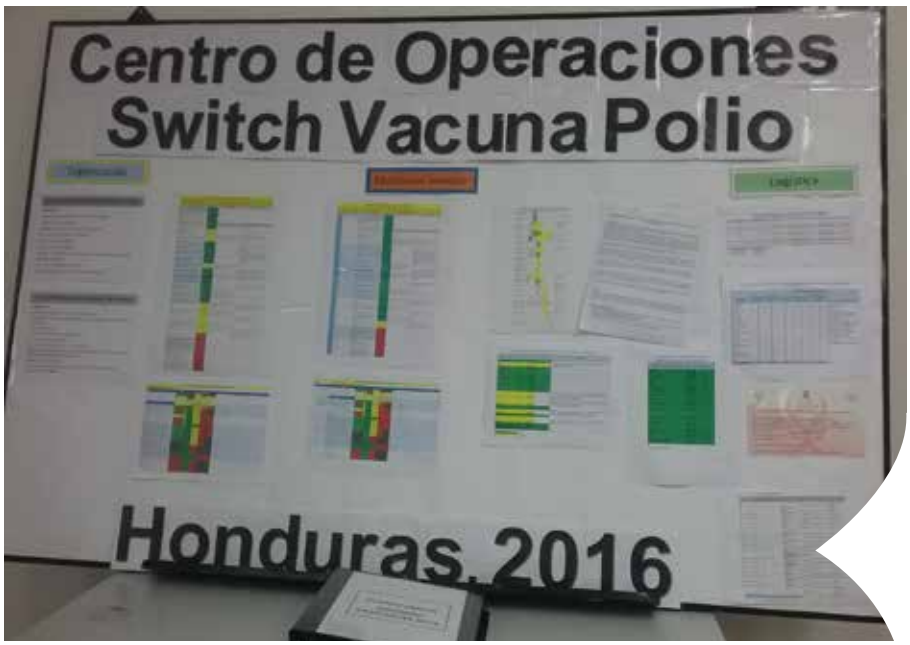
Recommendations

PAHO support. When asked how satisfied they were, in general, with PAHO's support for the Switch, 35 responded, and all 35 countries had a positive view. Two-thirds of the respondent countries (21 of 35) rated PAHO's support as "very good," and the remaining 14 countries rated it as "good." Countries that said the support from PAHO was "good" (and not "very good") mentioned vaccine supply issues (3 of 14 countries) and financial requests issues (2 of 14 countries) as some of the problems encountered with PAHO's support.

Support from PAHO mentioned most frequently by countries included:

- Direct technical support (25 of 36 countries)
- Documents and materials (16 of 36 countries)

Countries were asked to rank different types of PAHO support by degree of importance. The guidelines and supporting documents were deemed the most important type of PAHO support for the Switch (mentioned by 20 of 36 countries) and Regional face-to-face meetings were the next most important PAHO support provided (mentioned by 12 of 36 countries).



Switch Operation Center
Honduras

The level of organization was enormous, and the success obtained unprecedented.

3. Lessons learned by WHO and PAHO

3.1 Perspectives from the IMG[7]

How was Objective 2 of the Endgame coordinated/managed?

To ensure the second objective of the Endgame Plan was successfully implemented-- the introduction of IPV, and the eventual removal of OPV from vaccine schedules, starting with the Switch—the GPEI established the Immunization Management Group (IMG), which was made up the immunization focal point in each GPEI partner agency , a s well as Gavi , During the first meeting of the IMG, in 2013,it became rapidly clear that , to succeed, the IMG would need to be a collective effort across all partners.

What happened after that was extraordinary. Back in the planning stages, many people thought it would be impossible to introduce IPV with the endgame timelines in so many countries while also carrying out a synchronized Switch from trivalent OPV to bivalent OPV shortly thereafter. Despite these doubts, through the effort of national governments, PAHO, WHO an UNICEF regional offices and the coordination of the IMG, these targets were achieved, within

There have obviously been some problems, notably with IPV supply. After requesting all countries to introduce IPV before the Switch, there was an unexpected global shortage of IPV vaccine. To date, many low risk countries have still not been able to introduce IPV. From a political perspective, this has been a huge set back , as many of countries were concerned about the delayed access to the vaccine and the perceived risks this represented , but from a technical perspective, the effort was a success, because we were able to prioritize IPV for those countries at highest risk and the World was able to move forward with the Switch. The risk of any outbreaks in countries that were not able to introduce IPV was and is relatively low, due to the epidemiological characteristics of the countries. In addition, as a backup, there is a global stockpile of mOPV2, which is the best tool for responding to any type 2 virus outbreak.

What were some factors that facilitated this process?

Support for polio eradication across the Region was key to the technical success. The fact that polio

[7] Excerpted from phone interview with Michel Zaffran, current Director of WHO Polio Eradication, and former co-chair of IMG between January 2013 and February 2016. The responses were edited for clarity and length.

eradication is something that many people in the Region have been very involved with for years, it meant they were fully committed and wanted to see the end of the story. But in order to motivate people to implement the necessary work, and ensure all countries and partners were on board, a very specific objective with clear target dates was needed. Both the IPV introduction and Switch served that purpose. These very specific goals reenergized people. In addition, in many regions, the Switch brought routine immunization and polio teams that had been working separately, together.

From the organizational perspective, WHO got on board very quickly, with the regions driving much of the work, together with countries with the goal of using their own mechanisms to move this work forward , if needed, the IMG had the financial and technical for countries to ensure timelines could be met . There was very good communication between the IMG and the regions to ensure that the message was fully aligned, and understood, by all stakeholders. There was also a very strong work plan, and many partners carrying it out in a coordinated fashion—very strong collaboration.

What were some of the barriers?

In the beginning, many countries around the world were hesitant to move forward. For example, in May 2015, Indonesia was hesitant to introduce IPV. Getting a "No" from a large country like Indonesia could have had a domino effect, with many other countries refusing to get on board. Instead, there was very strong solidarity shown by the rest of the countries, who essentially said, "We are going to go ahead, and Indonesia needs to come along." After that, Indonesia was convinced to participate, and there was commitment from all countries.

The Region of the Americas faced many challenges but managed them extremely well. The overall political challenge was to have all countries on board. The Americas had eradicated polio many years ago, so the prevailing sentiment was that it did not make sense to take on the risk of making the Switch, given that other regions had not been able to eradicate the disease. However, the very strong position of the TAG helped convey the need to move in that direction worldwide.

There were some challenges, because countries were initially prepared to introduce a second IPV dose, and the global supply of IPV really hindered that.

Caribbean Subregional Office

The Americas even surmounted the challenges of the vaccine undersupply, by recommending that countries introduce only one dose of IPV, and eventually, based on strong scientific data, encouraging suitable countries to move to fractional dose IPV. It was really inspiring to see how the team in the Americas managed to tackle each and every challenge they faced and keep things on track.

What could have been done differently?

One thing that could have been done differently was the approach to vaccine manufacturers' commitment on supply. The IMG had contracts with the manufacturers that were assumed to be binding. The scale up needed by manufacturers to meet GPEI IP needs was significant . I think that both GPEI and the companies themselves were too optimistic that this would happen indeed . It didn't and we ran continuously into supply reductions which were hugely challenging for the programme. On the other hand, delaying the Switch for a year or two would have meant more unnecessary cVDPV2 outbreaks. In hindsight, IPV should have been introduced much earlier, perhaps 10 years ago. However, at that time, the focus of global polio efforts was on interrupting transmission; there was not much interest in introducing IPV and its cost was also prohibitive at that time .

Any support that would have been needed by regions or countries but was not provided?

Although the IMG was cautious about providing too much support, it still provided all support requested. When some countries had financial difficulties, the funds were made available, but very carefully, and only once the IMG was reassured that all avenues for national funding had been explored.

How was the work and process in the Americas different from the rest of the world?

The Americas are an example for the rest of the world in the field of immunization, and are always at the forefront of new vaccine introductions, polio eradication, and measles elimination. Thanks to PAHO, both IPV introduction and the Switch were successful and with excellent results across the region . During initial planning meetings in Cuba and Cancun, there were many doubts about IPV introduction and the Switch among country representatives. At the Second Regional Meeting in Bogota, however, there were no more doubts; the country representatives were finally discussing the details of the work. The support from PAHO, engagement of the countries, and knowledge base/expertise of the NIPs that helped facilitate the implementation of this ambitious plan was impressive.

3.2 Perspectives from the PAHO Revolving Fund for Vaccine Procurement

The biggest challenge, from the perspective of the PAHO Revolving Fund for Vaccine Procurement, was the availability of the vaccine. The IPV supply problem is not limited to the Region but is a global concern. The main supplier of the vaccine for the Americas (through the Revolving Fund) delayed its vaccine delivery, which in turn delayed the introduction of IPV in certain countries.

The reasons given for the manufacturers' delays included production delays (i.e., the manufacturers had trouble meeting their production goals) and delivery delays (when the National Regulatory Agency (NRA) of the manufacturing country took longer than anticipated to release the vaccine lots for shipments, due to demand overload).

The IPV shortage resulted in an adaptation of the original technical recommendation to the following resolution by the PAHO Regional Immunizations polio team:

- Countries that had already introduced IPV to their national immunization schedules would receive all doses needed as usual.
- Countries that had not previously introduced IPV would only receive one dose of IPV.

The reasons for the successful IPV introduction in the Americas (facilitators) included the following:

- All Member States of the Americas received at least one dose of IPV vaccine, thanks to PAHO's proactive role in anticipating vaccine shortage and developing a plan.
- Transparent and continuous communication with countries regarding the availability of vaccine maintained countries' trust and understanding of the procurement process, and allowed for planning the introduction of the vaccine. During the critical period, at every PAHO planning meeting with countries, the Revolving Fund presented the status of vaccine supply procurement.

Identified opportunities for improvement (barriers) included the following:

- A worldwide strategy of the magnitude of the Endgame Plan should always be backed up with strong and realistic vaccine supply forecasting, with manufacturers that have vaccine production already in place. Having more manufacturers would have been very beneficial to ensure production despite unforeseen circumstances, and to drive the

price down. Therefore, for future efforts, it would be of paramount importance to know the vaccine market, avoid dependency of very few suppliers, and plan ahead.

- In the future, the Revolving Fund could place all orders up front when confronted with a scarce supply situation. This would allow manufacturers to allocate their production plan with more precision, and increase the likelihood that they could comply with it. In order to do that, however, the Revolving Fund would need to require earlier decisions and commitments from the countries of the Americas. The Revolving Fund has begun to ask countries to provide information on the vaccines they are planning to introduce in the upcoming three years.

3.3 Perspectives from the PAHO Regional Immunizations polio team

Even with the very short timeframe provided for the vaccine introduction and Switch, the countries maintained an attitude of positivity and readiness throughout the process, despite some manifestations of concern, particularly about the timeline and the required budget. This is due in part to the Region's commitment to immunization in general, but it is also a result of the tremendous commitment to polio eradication in particular, which has a certain mystique. Countries in the Region have a sense of ownership, and pride, about polio eradication.

One of the most critical factors in the success of this unprecedented Regional effort was ensuring that the countries understood the rationale and scientific basis for the decision to introduce IPV and make the Switch, as well as the risk the Region would face if this did not occur. In that realm, PAHO's technical cooperation to countries was greatly aided by the work of GPEI's IMG, and their technical support materials, which PAHO adapted and enriched to share with countries in the Region to help them introduce the vaccine successfully, and make the Switch, in such short time.

Other factors that contributed to the successful introduction of IPV in the Region were the technical documents and materials that explained the rationale for the change, and the fact that the IPV introduction was to be followed by the Switch throughout the world, a strong impetus for country compliance. Other facilitators of the process included Regional experience with 1) new vaccine introduction; 2) multiple injections in a single visit; and 3) the introduction and use of IPV (in some countries).

Another positive factor worth mentioning is the global structure supporting WHO regions worldwide, including twice-monthly virtual meetings and twice-per-year face-to-face meetings, in addition to direct support as needed. As this was the largest scale-up of vaccine introduction the world has ever seen, many international organizations were collaborating to support the 126 countries across the globe that needed to introduce IPV. The BMGF, CDC, Rotary International, TFGH, UNICEF, and WHO all worked together on the IMG to create the most useful support materials for the countries. The collaboration was very well organized at the global level, with permanent and substantial information exchange between the regions and the IMG.

In turn, PAHO maintained permanent and close contact with the countries, with absolute availability for communications and country missions as requested. The PAHO Revolving Fund was also a game-changer for the Region. Most countries (98%) readily accepted the vaccines, without special in-country registration, as long as they were procured through the Revolving Fund, demonstrating a level of confidence that had a substantial impact on the Switch.

The problems with global vaccine supply and the vaccine delays were major obstacles that had to be dealt with at both at the Regional and national level. Pan Americanism played an important role when the global vaccine shortage did not allow countries to introduce more than one dose of IPV. PAHO had to recommend that all countries that were not already using IPV could only introduce a single dose. Other challenges included the fact that some countries with more centralized government had more difficulty with the initial decision-making required for both the IPV introduction and the Switch.

Nevertheless, in the history of vaccine introductions, no vaccine has even been introduced by so many countries, and in such a short time, as IPV under the Endgame Plan. The subsequent, synchronized Switch was also unique—an unprecedented event in global public health history. All in all, what seemed impossible became possible thanks to countries in the Americas taking ownership of the Endgame Plan's polio eradication goals, enhanced by the Regional support of immunization as a means of improving public health.

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Annexes

Annex A:

Survey to countries regarding the introduction of IPV vaccine

Dear country colleague,

The synchronized introduction of the IPV vaccine has constituted an effort without precedents, and with astonishing results. Within the established timeframe, all countries in our Region have managed to carry out the decision, planning and introduction of this vaccine to their national immunization schedules.

We kindly request you to fill out this survey, which has the objective of systematizing the experience of IPV introduction in the Region of the Americas, so that this experience can be useful for the introduction of new vaccines in our Region and in other regions of the world, and to help our own Region in the future to carry out another synchronized vaccine introduction if necessary.

The report that will be generated based on the analysis of this information will be an important piece in the documentation of the Polio legacy in the Americas, and your country will be adequately recognized for having contributed to it.

We would appreciate receiving your reply by February 26, 2016 at the latest.

Thank you very much for your invaluable contributions to this regional effort.

PAHO Immunization team

SURVEY:

Section 1: National decision-making

1. What governmental entities were involved in the decision-making process? Who initiated it? Who had the final say? Please mark with an X all that applies:

Agency	Initiated the decision-making process	Had the final say in the decision
National Immunization Program		
National Ministry of Health		
Presidency or Vice-presidency		
Other ministries. Please specify:		
Other governmental agencies. Please specify:		

2. Was there a National Immunization Technical Advisory Group (NITAG) involved?

   Yes ☐ No ☐

3. How much time did the decision-making process take?

   _____ months.

4. Where there difficulties in the decision-making process, and if there were, what were the reasons?

   _____

5. Was there an issue in particular that required more discussion?

   _____

6. What do you think helped the decision-making process?

   _____

7. Did the decision have media coverage?

   Yes ☐ No ☐

8. Which type of media?

   ☐ Television

   ☐ Radio

   ☐ Newspapers

   ☐ Other. Please specify: _____

9. What opinion did the media have on the introduction?

   _____

Section 2: Planning and preparing for the introduction

10. What helped the planning process?

_____

11. What made the planning process more difficult?

_____

12. What was the methodology used for staff training? Mark all that apply:

- ☐ Face-to-face trainings
- ☐ Virtual trainings
- ☐ Printed materials
- ☐ Other. Please specify: _____

13. Was it necessary to make changes to the EPI infrastructure (cold chain, service provision, etc.)?

Yes ☐ No ☐

If yes, please specify what EPI infrastructure needed to change: _____

Section 3: Communication

14. Please fill out the table below with the main communications and messaging strategies that were employed in conduction with IPV introduction:

Type of communication (e.g. print, radio, TV, social media, etc.)	Target audience	Materials developed

15. Were there any significant challenges associated with communications surrounding IPV introduction? If yes, please provide details.

Yes ☐ No ☐

16. In general, what has been the public's perception of and reaction to IPV introduction?

_____

Section 4: Vaccine introduction

17. Date of IPV introduction in your country: _____

18. Was the introduction conducted in phases or did it happen simultaneously nationwide?

In phases ☐ Nationwide simultaneous introduction. ☐

19. What factors facilitated the introduction?

_____

20. What factors made the introduction more difficult?

_____

21. Does the introduction of IPV mean children are receiving more than 2 injectable vaccines in a single visit?

Yes ☐ No ☐

If so, has there been any significant resistance or objection to the practice of multiple injections from health care workers and/or care givers?

_____

22. How and by whom is IPV administration being monitored post-introduction?

_____

Section 5: Institutional support from national or international entities

23. Please mention the national or international entities that provided support to the decision-making process and introduction of IPV in your country:

_____

24. What type of support did your country receive?

_____

25. What type of support do you think would have been useful or necessary, but was not provided?

_____

26. Do you have more comments regarding the support received? Your answers will allow us to provide better technical cooperation in the future.

_____

Section 6: Your evaluation of the IPV introduction process in your country

27. Would you do something different to improve the process?

_____

28. What aspects of the IPV introduction were different from the introduction of other vaccines in your country?

_____

29. Do you have additional considerations that have not been previously mentioned?

_____

30. Please mention the three factors that you consider helped the most in the introduction of IPV.

a. –
b. –
c. –

31. Please mention the three factors that you consider made the introduction of IPV more difficult.

a. –
b. –
c. –

Section 7: Use and usefulness of documents provided

PAHO developed or adapted several technical documents, based on documents prepared by WHO or by the Global Polio Eradication Initiative (GPEI), to support countries in the decision-making process, planning, preparation and introduction of IPV vaccine.

We kindly request that you complete the following table on the use and usefulness of these documents in your country:

	Used at national level (Yes/No)	Used at department level (Yes/No)	Used at local level (Yes/No)	Usefulness (High/ Medium/ Low)
TECHNICAL DOCUMENTS				
IPV Introduction Guide				
Background and Technical Rationale for Introduction of one dose of Inactivated Polio Vaccine (IPV) in Routine Immunization Schedule				
Reducing Pain at Time of Vaccination				
TRAINING				
IPV Training Modules:				
1. Introduction to the polio endgame rationale and IPV vaccine				
2. IPV attributes and storage requirements				
3. IPV schedule, eligibility and contraindications				
4. IPV vaccine administration				
5. Recording and monitoring administration of IPV				
6. Monitoring Events Supposedly Attributable to Vaccination or Immunization (ESAVI)				
7. Communicating with parents, caregivers and health personnel about IPV and multiple injections				
Multiple Injections: Acceptability and Safety				
Frequently Asked Questions on the Introduction of IPV				
COMMUNICATION				
Issues Management Guide: To support countries in preparing for unexpected situations with implications for public communications				
Media resource kit: Preparing for IPV introduction				

Annex B:

PAHO survey for countries that implemented the Switch

Pan American Health Organization | World Health Organization Americas | POLIO GLOBAL ERADICATION INITIATIVE

Experience on the Switch from the trivalent oral polio vaccine (tOPV) to the bivalent (bOPV)

Congratulations to your country on the implementation of the switch. The coordinated Switch in 155 countries globally and 36 countries in the Americas is a huge step towards global polio eradication and is a story that deserves recognition. PAHO is going to develop a regional report on the Switch to document the work that went in to the Switch planning and implementation. The responses from your country will be a valuable addition to this report and in it we will mention each contributing country by name.

Country: Click or tap here to enter text.

Name of person/s responding to this survey: Click or tap here to enter text.

Title of person/s responding to this survey: Click or tap here to enter text.

Process

1. Was a committee utilized for Switch coordination at the national level? Yes ☐ No ☐

a. Was an already existing committee used? Yes ☐ No ☐
b. If yes, which committee? (i.e., ICC or other): Click here to enter text.
c. Which departments of the Ministry of Health were part of the committee?
d. Did other ministries participate in the committee?
e. Which other actors outside the public sector participated?

2. Which levels had Switch coordination committees?

- ☐ National
- ☐ Regional
- ☐ Departmental
- ☐ Municipal
- ☐ Other Click here to enter text.

3. Were subcommittees used? Yes ☐ No ☐

a. If yes, please describe Click here to enter text.

4. How were Switch activities funded? Mark all that apply

- ☐ National budget
- ☐ Financial support from partners (Specify which partners) Click here to enter text.
- ☐ Other, describe: Click here to enter text.

5. Were specific plans developed for the following activities (select all that apply)?

- ☐ Training
- ☐ Supervision
- ☐ bOPV delivery and distribution
- ☐ tOPV withdrawal and destruction
- ☐ Information System
- ☐ Communication
- ☐ Other, describe: Click or tap here to enter text.

6. What methodology was used for training? Please mark all that apply:

- ☐ Face to Face trainings
- ☐ Virtual trainings
- ☐ Printed materials

7. Was cascade training used to train different levels?

Yes ☐ No ☐ If no, describe what was used instead: Click or tap here to enter text.

8. What types of training materials were used?

- ☐ PowerPoint Presentations
- ☐ Printed materials
- ☐ Videos
- ☐ Other, describe: Click or tap here to enter text.

9. Did the Switch require any changes to the information systems?

No ☐ Yes ☐ Describe the changes made: Click or tap here to enter text.

10. What partners were involved in the process in your country?

- ☐ Government institutions, please specify: Click or tap here to enter text.
- ☐ International organizations, please specify: Click or tap here to enter text.
- ☐ NGOs, please specify: Click or tap here to enter text.
- ☐ Scientific societies please specify: Click or tap here to enter text.
- ☐ Rotary Club
- ☐ Other, please specify: Click or tap here to enter text.

11. What type of support did your country receive?

- ☐ Technical
- ☐ Logistical
- ☐ Financial
- ☐ Other – Describe:

12. Did your country implement supplementary vaccination activities in preparation for the Switch?

- ☐ No
- ☐ Yes

13. If yes to question 12, at what level?

- ☐ National
- ☐ Sub-National

bOPV-tOPV exchange logistics

14. Which method(s) was/were used for bOPV-tOPV exchange? Mark all that apply.

☐ "Push" Exchange: District delivers bOPV to facilities and picks up tOPV
☐ "Pull" Exchange: Facilities collect bOPV from district and surrender tOPV
☐ bOPV was delivered to Health facilities before Switch day. In this case, please explain what method was used to withdraw tOPV: Click or tap here to enter text.
☐ Other Click or tap here to enter text.

Communications

15. Was there a communication plan?

☐ Yes
☐ No

Comment: Click or tap here to enter text.

16. Which audiences were targeted in the communication plan?

☐ Media
☐ Parents / caregivers
☐ Health workers
☐ The general public
☐ Other - describe:

17. Were there any briefings with key stakeholders (e.g. pediatricians, medical associations, CSOs, NGOs, etc.) conducted in advance?

Yes ☐ No ☐

18. Were there any media or public communication activities (e.g. press release)?

Yes ☐ No ☐

19. Was there a risk communication or crisis communication plan?

Yes ☐ No ☐

20. What types of communication materials were created?

- ☐ Press releases
- ☐ Posters or brochures
- ☐ Radio spots
- ☐ Other - describe them:

21. Please note any other observations about the communications activities implemented to support the Switch, which may be useful for future vaccine switches: Click or tap here to enter text.

Monitoring

22. Who were the monitors? Point all options that apply.

- ☐ Staff of the Ministry of health (not EPI)
- ☐ EPI staff
- ☐ NGO staff
- ☐ Students
- ☐ Other. Please describe:

23. How were the monitoring sites selected? Mark all that apply

- ☐ Risk based
- ☐ Random selection
- ☐ Other, Please Describe: Click here to enter text.

Lessons learned

24. Describe any major obstacles encountered during Switch planning, implementation and validation:

Planning: Click here to enter text.

Implementation: Click here to enter text.

Validation: Click here to enter text.

25. Describe best practices conducted during Switch planning, implementation and validation.

Planning: Click here to enter text.
Implementation: Click here to enter text.
Validation: Click here to enter text.

26. What would you have done differently during the process: Click here to enter text.

27. Please rank the following aspects of PAHO support in order of relevance to your country.

___ Regional meeting - face to face

___ Virtual meetings

___ Visits to the country

___ Guidelines and supporting documents:

28. How do you evaluate the support of PAHO for the Switch?

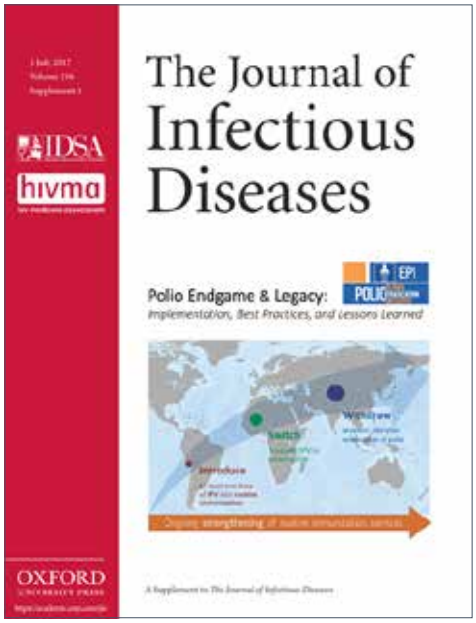
☐ Very bad ☐ Bad ☐ Neutral ☐ Good ☐ Very good

Please justify your answer:

29. Include any other comments and observations about lessons learned during the process: Click here to enter text.

From the WHO webpage:

New journal supplement on the Polio Endgame provides a powerful resource to guide immunization programme planning



10 JULY 2017 - GENEVA

Global polio eradication and immunization partners have today announced the launch of a new supplement to the Journal of Infectious Diseases, *Polio Endgame and Legacy: Implementation, Best Practices, and Lessons Learned*.

The 51 articles in the publication serve as a resource and reference on how to implement large scale, globally synchronized public health activities within ambitious timelines, and provides valuable insights for other initiatives looking to do the same.

This open access supplement represents the achievements and learning of a three-year multi-partner collaboration that was responsible for the activities set by objectives 2 and 4 of the Polio Eradication and Endgame Strategic Plan 2013-2018. This includes efforts to coordinate implementation of inactivated polio vaccine (IPV) introduction, switch oral polio vaccines (OPV), strengthen immunization systems, and ensure that the investments made in polio eradication secure longer term benefits.

Recent years have been marked by defining events that required intensive action towards the accelerated timelines of the Endgame Plan. In April 2016, the withdrawal of the type 2 component in the switch from trivalent to bivalent OPV in 155 countries and territories was described as a “marvellous feat” by Dr Margaret Chan, the former Director General of the World Health Organization. In preparation for the switch, the level of commitment of countries to introduce IPV signified a new collective momentum towards the goal of polio eradication. And as we come closer to achieving eradication, a transition process has been initiated to prepare for a polio-free world.

The effective and timely implementation of these activities speaks for the active engagement of multiple partners who contributed to many years of highly focused undertakings. Papers in the supplement offer detailed assessments of efforts across areas such as strategy and management, planning and implementation, communications, financing, vaccine supply, and routine immunization strengthening. Furthermore, regions and countries have directly contributed a significant number of papers to the supplement, offering a unique insight into the practical challenges that were overcome in a range of diverse settings.

Documentation of these experiences and lessons through the supplement provides an important record and has the potential to greatly inform future similar efforts; from globally coordinated public health initiatives, to the expected withdrawal of all OPVs, vaccine introductions, and polio transition planning.

The supplement can be accessed at no cost by visiting:

https://academic.oup.com/jid/issue/216/suppl_1

Source: http://www.who.int/immunization/diseases/poliomyelitis/JID_supplement_polio_endgame_july2017/en/

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