

Immunization Newsletter

Pan American Health Organization

Volume XL Number 1

Immunize and Protect Your Family

March 2018



Implementation of Fractional Doses of the Inactivated Poliovirus Vaccine

Background

As part of the Polio Eradication and Endgame Strategic Plan, endorsed by all Member States at the World Health Assembly, all countries needed to introduce at least one dose of the inactivated poliovirus vaccine (IPV) prior to the globally synchronized removal of the type two component of the oral polio vaccine (OPV). The Americas committed themselves to meet this goal and between February 2015 and April 2016, 32 countries and territories in the Region that did not already use IPV, introduced one dose of the vaccine into their routine immunization schedule.

Prior to approval of the Plan, the WHO had received signed agreements from two vaccine manufacturers, guaranteeing enough IPV production to provide every new birth cohort with one complete dose at an affordable price. Unfortunately, between 2015 and 2016, both suppliers encountered unexpected production delays and had to reduce their offer. This resulted in 21 low-risk countries in other regions not being able to introduce IPV before the switch and another 29 countries facing stock-out of the vaccine after introduction. The suppliers have continued to face production delays and it is likely this issue will extend through 2020.

Recommendation for fIPV

Considering both the constrained supply situation and the fact that scientific evidence has shown that two fractional doses of IPV (fIPV) administered intradermally present a higher seroconversion for all serotypes than one full dose of IPV administered intramuscularly, WHO's Strategic Advisory Group of Experts (SAGE) on immunization recommended in 2016 that countries consider using fIPV. For an instructional video on fIPV administration, please go to <https://youtu.be/DJ5eABCK6k8>.

fIPV is 1/5 of a full dose of IPV and must be administered intradermally.¹

PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases met in May 2016 and March 2017 to review the global and regional IPV supply situation and the scientific evidence for fIPV immunogenicity, and recommended that all countries that use more than 100,000 doses of IPV each year switch to fractional doses using the following polio vaccination schedule:

Basic Schedule	Booster Schedule				
Dose	1st	2nd	3rd	4th	5th
Age of administration	2 months	4 months	6 months	18 months	4-5 years
Type of vaccine	fIPV	fIPV	bOPV	bOPV	bOPV

bOPV: bivalent oral polio vaccine.

fIPV Training

As of March 2018, nine countries in the Region have started training health workers for fIPV implementation: Colombia, Cuba, Dominican Republic, Guatemala, Ecuador, El Salvador, Honduras,

See [fIPV](#) on page 2

¹ See the job aid "What is a Fractional Dose of IPV?" for more information on fIPV. Immunization Newsletter. 2017. Vol. XXXIX. Number 2. Page 7. Accessible at www.paho.org/immunization/newsletter

IN THIS ISSUE

- 1 Implementation of Fractional Doses of the Inactivated Poliovirus Vaccine
- 1 Strengthening Immunization Program Management and Data Quality with Electronic Immunization Registries in the Caribbean
- 3 Pan American Journal of Public Health Publishes Issue on Immunization in the Americas
- 4 Sentinel Surveillance of Pneumonia and Bacterial Meningitis in Peru's Pediatric Emergency Hospital
- 6 Workshop on Rapid Responses to Yellow Fever Outbreaks in Peru
- 6 PAHO Publishes Tools for Monitoring the Coverage of Integrated Public Health Interventions
- 7 Table 1. Prices for Vaccines Purchased through the PAHO Revolving Fund, 2018
- 7 Table 2. Prices for Syringes Purchased through the PAHO Revolving Fund, 2018-2019
- 8 What I Have Learned... by Gladys Ghisays

Strengthening Immunization Program Management and Data Quality with Electronic Immunization Registries in the Caribbean

Electronic Immunization Registries (EIRs) are tools that facilitate the documentation and monitoring of individual immunization schedules, as well as the storage of individual immunization histories. Consequently, EIRs help to enhance the performance of the Expanded Program on Immunization (EPI) in terms of coverage, efficiency and data quality.

There is evidence that EIRs can be cost-effective tools to increase coverage, improve the timing of vaccination and provide reliable data for decision-making. Moreover, an EIR facilitates monitoring the vaccination process to optimize related activities. EIR development and implementation responds to progress in both immunization programs and information and communications technologies and connectivity, as well as to the EPI's information requirements.

PAHO defines individualized immunization registries as those that identify vaccination data for each person and allow access to everyone's vaccine history, thus facilitating active searches, in addition to supporting the monthly planning for who needs to be vaccinated and monitoring defaulters or dropouts. EIRs are computerized individualized immunization registries that are part of the immunization information system. Depending on their connectivity, EIRs can be defined as online, offline or a combination of both.

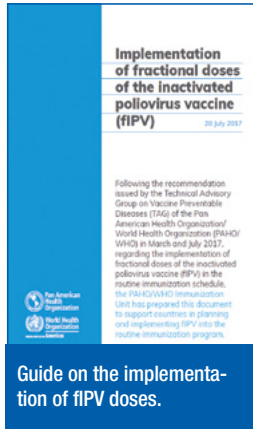
Countries in the Region of the Americas have made great strides in strengthening their immunization information systems, including the Caribbean islands, which have had challenges with the completeness, timeliness and accuracy of their immunization data, despite small populations. Challenges exist with inaccurate denominators due to out-of-country births and duplicated information from both the public and private health sectors. However, some of the Caribbean countries are investing in EIR implementation with the objectives of improving EPI performance monitoring through completeness of the individual immunization schedule and strengthening the quality of the immunization data.

See [EIRs IN THE CARIBBEAN](#) on page 4

fIPV continued from page 1

Nicaragua and Paraguay. Many of these countries are also taking advantage of these trainings to strengthen the overall immunization program in areas like injection safety, the Multi-Dose Open Vial Policy², surveillance of acute flaccid paralysis and polio outbreak response.

Although the introduction date for switching to fractional doses is not yet confirmed, these countries have taken important steps in making sure personnel are equipped with the knowledge they need to move towards fractional doses, when the time becomes necessary.



fIPV Training Materials

Following the SAGE and TAG recommendations to switch to fIPV, PAHO developed various materials to support countries plan and implement this schedule. The first material developed was an **introduction guide** explaining the schedule and administration technique for intradermal vaccination, including specifications on vaccination in special populations, contraindications, advice on inventory management and what to do in case of a stock-out of the vaccine. This document is fully adaptable and allows for countries to use it to develop their own national fIPV guidelines.

An **instructional video** was also developed that can be used in trainings to help explain the administration technique to healthcare workers. A **brochure** discussing polio eradication and fIPV was also developed and used to disseminate information on World Polio Day in October 2017.

Additionally, a **magnet** was designed that countries can adapt, add their own logos to and print in-country to be placed on refrigerators in vaccination centers. This magnet reminds health workers of the procedures that should be followed for WHO's Multi-Dose Open Vial Policy for WHO pre-qualified vaccines. All of these materials are available at: www.paho.org/polio

fIPV Materials and Training in the Region

In addition to the materials that were produced by PAHO headquarters, many countries in the Region took the initiative to develop their own training materials and train healthcare workers on implementing fIPV. Here are some examples of the country materials, also available at www.paho.org/polio.



Colombia

In late 2017, Colombia designed strategies anticipating IPV stock-outs, defining operational guidelines to implement fIPV use. This implementation was done across the national territory, integrating vaccinators, EPI and surveillance coordinators, doctors, pediatricians, academic and scientific societies and other program allies.

Some of the lessons learned from this experience include:

- The importance of involving scientific and academic societies in the training process, like the Colombian Society of Pediatrics;
- Intersectoral coordination with the national regulatory agency, National Institute of Health, National Immunization Technical Advisory Group (NITAG) and National Certification Commission (NCC);
- Adaptation of the cold chain in routine EPI management;
- Optimizing trainings to include other relevant EPI components.

Thanks to the EPI's detailed planning and strengthened framework, 300 departmental meetings and twelve meetings with pediatric doctors

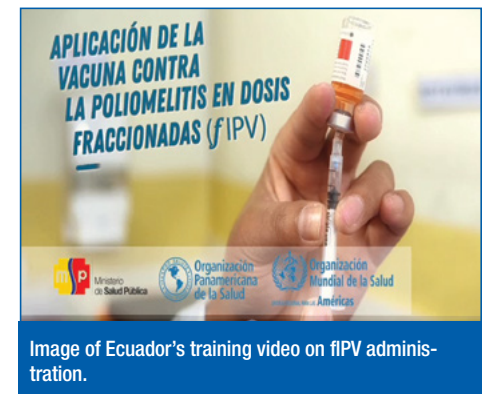
were successfully conducted, reaching a total of 9100 people trained. This demonstrated that Colombia is prepared to introduce fIPV in a timely manner, if the supply situation worsens.

Colombia also developed a **brochure** on polio and fIPV called "The End of Polio is in Your Hands!" ("¡El fin de la polio está en tus manos!"). The complete brochure can be found in Spanish at www.paho.org/polio

Ecuador

Considering the fundamental role of healthcare workers in the process of administering fIPV, immunization experts from the National Immunization Strategy (ENI) trained those responsible for immunization programs in Ecuador's nine health provinces in fIPV administration from September-December 2017. They, in turn, replicated the workshop in the provinces, cantons and operating units under their responsibility.

A **video** with the basic points to train personnel was developed by Ecuador's Ministry of Public Health and distributed to the different management levels to support the training process, along with the corresponding training manual. The video can be found online (in Spanish) at https://youtu.be/S8ISJ_D1Qzs



Once the training had been completed, fIPV administration began on 1 January 2018 in 100% of the country establishments, as part of the Ministry of Public Health's regular vaccination schedule, according to PAHO/WHO recommendations. The introduction of fIPV doses in the schedule has been a success, without any known operational or technical problems to date.

Honduras

During the National Immunization Consulting Conference (CCNI) held in June 2017, a recommendation was made to the Honduran Secretariat of Health (SESAL) to begin preparing to introduce two fIPV doses. This was based on recommendations given during the *ad hoc* TAG meeting held in March 2017, where the subject of IPV shortage and a situational analysis on vaccine supply in the country were addressed. Considering this, the SESAL made the technical

² WHO's Multi-dose Vial Policy, 2014 revision, is accessible in English and French at <http://bit.ly/multidose>

fIPV continued from page 2



National workshop to train regional facilitators, Tegucigalpa, Honduras, 19-20 September 2017. Credit: Dr. Ileana Moya.



National workshop to train regional facilitators, Tegucigalpa, Honduras, 19-20 September 2017. Credit: Dr. Ileana Moya.

and political decision to introduce fIPV use in January 2018.

The SESAL developed an introduction plan with a budget allowing for resource mobilization. As implementation of this plan began between July-December 2017, activities were conducted among all components of the immunization program ensure successful preparation, including the development of technical and operational guidelines, creation and implementation of a training plan for healthcare workers in the public sub-sector at all levels of the service network, socialization of key actors like schools and associations of healthcare professionals, strategy design, production of communication materials and revisions and adjustments to the information system.

SESAL has confidently prepared health personnel for fIPV use and has decided to postpone its introduction.

Paraguay

Paraguay's EPI successfully completed a series of trainings on fIPV in December 2017. There were 19 trainings at the national level and 250 at the sub-national level, consolidating maintenance of the achieved goals, challenges faced during the measles and rubella post-elimination era and the global polio elimination strategy.

With the premise that "no country is exempt from the entry of diseases imported from other latitudes, but we can prevent their spread in our territory," the strategic axes served were: high and homogeneous vaccination coverage, high

surveillance indicators for preventable diseases and an eloquent, effective and efficient rapid response team, for prompt intervention through the interruption of any chain of transmission.

The capacity installed at the operational level to administer intradermal vaccine doses was evaluated in the field and developed the training on fIPV administration or that of another vaccine, where necessary.

The entire process was financed by funds from Paraguay as a sign of empowerment and sustainability. Similarly, primary immunization registries and vaccination notebooks for boys and girls were adapted, prepared and consolidated. ■



fIPV training in Paraguay. Credit: Ministry of Health, Paraguay.



fIPV training in Paraguay. Credit: Ministry of Health, Paraguay.



fIPV training in Paraguay. Credit: Ministry of Health, Paraguay.



fIPV training in Paraguay. Credit: Ministry of Health, Paraguay.



fIPV training in Paraguay. Credit: Ministry of Health, Paraguay.

Colombia: Diego Alejandro García Londoño, EPI manager, Juanita Corral Castillo, national consultant for the EPI; Viviana Andrea Calderón Ramírez, national immunization consultant for PAHO/WHO. **Ecuador:** National Immunization Strategy (ENI), Ministry of Health, Ecuador. **Honduras:** Ida Berenice Molina, EPI manager, and Odalys García, national consultant for PAHO/WHO. **Paraguay:** Sonia Arza F., Mirian Medina, Leticia Nuñez Suárez, Zully Suárez, EPI Paraguay; Fabiana Michel, PAHO/WHO immunization focal point.

The screenshot shows the website for the Pan American Journal of Public Health. It features a header with the journal's name and logos for the Pan American Health Organization and World Health Organization. Below the header, there is a navigation menu and a main content area titled "Special issue on Immunization in the Americas". The content area includes a list of recently published articles, a "Special issue table of contents" section, and a "Metrics" section with a bar chart. The website also displays the journal's 97th anniversary since 1922.

Pan American Journal of Public Health Publishes Issue on Immunization in the Americas

In December 2017, PAHO's *Pan American Journal of Public Health* published a special issue on 40 years of the Expanded Program on Immunization in the Americas. This supplement explores the past, present and future of immunization in the Region of the Americas through a variety of articles, detailing the trajectories that have led to eliminating vaccine-preventable diseases like polio, rubella, congenital rubella syndrome and measles, but also exploring the history of other developments in the Region, like Vaccination Week in the Americas and the introduction of new vaccines to regional immunization programs. The supplement also discusses the future of immunization in the Region and challenges to be overcome.

The articles in the supplement can be found in English, Spanish or Portuguese at the following link <http://bit.ly/PAHOjournalIM>. ■

EIRs IN THE CARIBBEAN continued from page 1

In 2015, to address its immunization data quality issues, Grenada submitted a national EIR establishment proposal to the United States Centers for Disease Control and Prevention (CDC) with technical support from PAHO; the country was successful in receiving a grant to implement the EIR.

During the implementation period of this project, the national EPI team and PAHO established different stages and processes, including planning the implementation and activities and financing to sustain the system; customizing an open-source version of a WHO-commissioned EIR designed by software developers in Albania, who supported the customization process according to the country's context and needs; setting a timeline to provide the system's infrastructure requirements (hardware, electric requirements, furniture, etc.); conducting training workshops to train and sensitize healthcare workers to use the system, including registering the infants at birth and analyzing data; entering historical vaccination data for vaccinated children; implementing communication strategies to support public awareness of the EIR for public and private healthcare providers; among others.

Based on the successful implementation and lessons learned from the customization of the EIR in Grenada, named GLIS (Grenada Immunization Information System), a proposal was submitted to the CDC in 2017 for a grant to expand the EIR to three additional Caribbean countries: St. Kitts and Nevis, Turks and Caicos and Montserrat using the same processes and with technical support from the Information System Manager in Grenada's Ministry of Health. From May to September 2017, site visits were made to these



Participants at the EIR workshop in St. Kitts & Nevis.
Credit: PAHO/WHO.



Participants at the EIR workshop in St. Kitts & Nevis.
Credit: PAHO/WHO.

countries/territories to facilitate the process of dialogue and EIR customization according to their needs.

Intervening challenges due to the impact of severe hurricanes delayed implementation and necessitated a change in plans for the final in-country training. Therefore in November 2017, PAHO carried out a training workshop to implement the EIR in St. Kitts and Nevis including health workers from all health facilities in St. Kitts and Nevis, as well as EPI managers and information technology experts from St. Kitts and Nevis, Montserrat and Turks and Caicos.

During the workshop, PAHO presented the advances that the countries of the Region of the Americas have made using these systems,

as well as the challenges they have faced and lessons they have learned regarding the entire EIR process. The EIR consultant from Grenada taught the main system functions, dividing the workshop into three main areas: nominal and immunization registry; Events Supposedly Attributable to Vaccination or Immunization (ESAVI) and stock management.

Participants had the opportunity to ask questions, make suggestions and provide recommendations and commitments to improve and guarantee the implementation process for each of the countries/territories. This process was very helpful in informing plans for further expansion to other islands in the Caribbean that have expressed interest in improving their own vaccination data quality through EIR implementation.

Countries have been energized by the benefits to having EIRs, specifically by improved vaccination coverage, the identification of vaccination drop-outs and the ability to plan more efficiently for vaccination sessions. Integration of the system with the private sector and real time point-of-service data entry will greatly reduce transcription errors.

Expanding the EIR implemented in Grenada to St. Kitts and Nevis, Turks and Caicos and Montserrat, will improve data quality for the individual countries and the Caribbean, as well as provide experiences that can be shared with other countries and more specifically, other island nations. EIR implementation will also help integrate information across islands, which should help solve some of the data challenges caused by population migration. ■

Sentinel Surveillance of Pneumonia and Bacterial Meningitis in Peru's Pediatric Emergency Hospital

Introduction

The Pediatric Emergency Hospital, a national reference health facility located in Lima that is part of the Peruvian Ministry of Health, has 52 hospital beds and an average of 2,000 discharges per year. In 2009, it began sentinel surveillance of pneumonia and bacterial meningitis among children under five years old, as part of the regional network coordinated by PAHO, and in 2014 joined the WHO global network.

From the beginning, the goal was to institutionalize this surveillance, which was achieved thanks to the following key aspects:

- Institutional commitment from authorities;
- Concerted participation from clinical, laboratory, and epidemiological components;
- Participation from department and service heads on the sentinel surveillance committee;
- Commitment from pediatric medical personnel to capture cases;

- Orientation and in-service training of rotating personnel;
- Continuous monitoring and follow-up of patients;
- Timely sampling and processing;
- Systematic feedback of surveillance results.

To measure all performance indicators proposed by WHO, the hospital overcame challenges to obtain vaccination data, identify all suspected cases, increase the accuracy of a probable bacterial pneumonia case, ensure inputs, increase timeliness of sampling and processing, among others. This made it obtaining quality data on these diseases possible. This is data that can be useful to the whole country, the Region of the Americas and other regions of the world, as pneumonia and bacterial meningitis have a great impact on child morbidity and mortality.

This report provides a descriptive analysis of

pneumonia cases that were first subject to sentinel surveillance in 2016.

Methods

From the emergency service to the inpatient wards and intensive care unit, all clinicians in the hospital are alert to capture every case admitted with suspicion of community-acquired pneumonia. Chest x-rays are given to all suspected pneumonia cases to identify probable cases, the blood of whose is tested for bacterial identification.

To identify the radiological pattern compatible with bacterial pneumonia, the chest x-ray is read with assistance from the radiologist. The hospital has used various initiatives to document vaccine information, from requesting the vaccination card from parents during visits and during admission, to requesting photos of the card via WhatsApp. For surveillance purposes, they used the same case definitions established for the Region of the Americas:

SURVEILLANCE continued from page 4

• Suspected case of pneumonia

Every patient under five years old hospitalized with a clinical diagnosis of community-acquired pneumonia. A hospitalized patient means any patient for whom hospital treatment is indicated.

• Probable case of bacterial pneumonia

Every suspected case with a chest x-ray showing a pattern compatible with bacterial pneumonia.

• Confirmed case of bacterial pneumonia

Every probable case of bacterial pneumonia in which *H. influenzae*, *S. pneumoniae*, or another bacterium has been identified in the blood or pleural fluid.

• Ruled-out case of bacterial pneumonia

Every suspected case with a chest x-ray does not show a radiological pattern compatible with bacterial pneumonia.

Results

During 2016, 319 children under five years old were admitted with suspected pneumonia; 108 (33.9%) were considered to have probable bacterial pneumonia and seven (2.2%) were confirmed. Cases among males (59.9%) and children under two (81.2%) were the most common – more than half of the patients (57.4%) were less than one year old during admission and 23.8% were aged 12-23 months.

No seasonal behavior was identified in the capture of suspected cases, only a slight increase in April, May, September, and November, when more than 40% of cases were captured. Disease duration was one to four days in 44.2% of cases, with an average of 5.8 days and a median of five days. Before admission to the hospital, 40.1% of cases received antibiotics. Three patients died.

The hospital receives cases from various places around the country, but most frequently from the districts of San Juan de Lurigancho (19.8%), El Agustino (11.29%), La Victoria (8.8%), and Santa Anita (6.9%). The majority of patients captured came from districts with average to low resources.

Among probable cases, 85.7% (six) of isolates were pneumococcus and 14.3% (one) were *Haemophilus influenzae* type b (Hib). The patient with Hib pneumonia did not have the complete pentavalent vaccine series for their age. Five (83.3%) of the isolated pneumococci were 19A and one was 15A. Five of the patients with pneumonia from those pneumococci showed their vaccination card: two (40%) had the vaccines scheduled for their age and three (60%) did not.

The two patients with a complete vaccine series became ill from pneumococcus strains (15A and 19A) not present in the 10-valent vaccine received.

In 192 (60.2%) captured cases, the vaccination card was available and in 127 (39.8%) cases it was not. Among those carrying their vaccination card, 27 (14.0%) did not have the vaccines for their age; 119 (62.0%) had complete vaccines for their age; and vaccination was incomplete for 46 (24.0%).

Confirmed bacterial pneumonia cases admitted to the Pediatric Emergency Hospital, 2016

Age (months)	Microorganism	Serotype	Vaccination Status and Date		Complete Vaccines for Age?
			Pneumococcus	Pentavalent (Hib)	
9	<i>S. pneumoniae</i>	19A	Second dose, date unavailable	Third dose, date unavailable	Yes, verbal
21	<i>S. pneumoniae</i>	19A	Second dose on 4/Feb./15	Second dose on 4/Feb./15	No
23	<i>S. pneumoniae</i>	19A	First dose on 20/Dec./14	First dose on 20/Dec./14	No
33	<i>S. pneumoniae</i>	15A	Third dose on 25/Feb./14	Third dose on 3/Sept./14	Yes
38	<i>S. pneumoniae</i>	19A	Third dose on 25/Feb./14	Third dose on 24/Mar./14	Yes
41	<i>S. pneumoniae</i>	19A	First dose on 6/Feb./13	Third dose on 28/May/15	No
20	<i>H. influenzae</i>	8	First dose on 29/May/16	First dose on 29/May/16	No

Bacterial pneumonia cases by radiology and documented vaccination in the Pediatric Emergency Hospital, 2016

Vaccination for Age	Probable Bacterial Pneumonia	Non-bacterial Pneumonia	Total
Complete	33	84	117
Incomplete	21	22	43
Total	54	106	160

The odds ratio (OR) for those who had complete vaccination for their age and the presence of bacterial pneumonia radiologically was 0.41.

Conclusions

- The isolation rate was very low, restricting analyses of confirmed cases. *Streptococcus pneumoniae* was the most frequent isolate, and the majority were serotype 19A.
- Only 40% of patients with *Streptococcus pneumoniae* isolation had a history of complete vaccines for their age verified by vaccination card.
- Two-thirds of captured patients showed a vaccination card, of which only 61.98% had complete vaccines for their age.
- For patients with vaccination documented

by card, it had been found that the vaccine had a protective effect against confirmed and probable bacterial pneumonia, by comparing probable bacterial pneumonia cases with those of other pneumonias, based on a radiological pattern.

Recommendations

- Optimize case-finding strategies with the vaccination cards of captured patients, with participation from the Office of Nursing and Social Service.
- Carry out local and national actions to improve proportions of children with complete vaccination for their ages. ■

Contributed by: Dr. Hugo Antonio Mezarina Esquivel, Chief of the Office of Epidemiology at the Pediatric Emergency Hospital in Lima, Peru.

Workshop on Rapid Responses to Yellow Fever Outbreaks in Peru

The regional health management in Uycacali, Peru (*DIRESA-Uycacali*), Peru's Ministry of Health and PAHO successfully organized and developed a workshop on rapid responses to yellow fever outbreaks, emphasizing immunization actions and aiming to train technical teams in the *DIRESA-Uycacali* health networks and strengthen rapid responses to yellow fever outbreaks. The workshop was evaluated and validated by the *DIRESA-Uycacali*.



Yellow fever response workshop in Peru. Credit: Monica Pun, PAHO/WHO.

This workshop was conducted on 21-22 February in Pucallpa with participation from national and foreign speakers like Samia Samad, international immunization consultant for PAHO/WHO in Peru, Monica Pun, national health emergencies consultant for PAHO/WHO in Peru, Greta Arias from PAHO/WHO's technical immunization team, Maria Ticona from the immunization department in the Ministry of Health, Gladys Turpo from the National Center for Epidemiology, Disease Control and Prevention (CDC-Peru), Cayo Leveau, director of epidemiology in the *DIRESA-Uycacali* and Roberto Aron, regional immunization coordinator for the *DIRESA-Uycacali*.

Health personnel from the epidemiology,

immunization and laboratory technical areas in the Coronel Portillo, Federico Basadre, Atalaya and Aguatia health networks, as well as representatives from eHealth and *DIRESA-Uycacali*, actively participated in developing the best strategies to strengthen yellow fever vaccination as it is the most important activity to control this highly lethal disease.



Yellow fever response workshop in Peru. Credit: Monica Pun, PAHO/WHO.

Henry Lobato, Regional Director of *DIRESA-Uycacali*, opened the workshop by thanking PAHO/WHO and Peru's Ministry of Health for their support and emphasizing that the purpose



Yellow fever response workshop in Peru. Credit: Monica Pun, PAHO/WHO.



Yellow fever response workshop in Peru. Credit: Monica Pun, PAHO/WHO.



Yellow fever response workshop in Peru. Credit: Monica Pun, PAHO/WHO.

of this event was to strengthen personnel capacity when facing a yellow fever outbreak by covering areas at risk in Uycacali, given that there is a yellow fever epidemic currently developing in Brazil and that the Peruvian population's mobility could increase the risk.

By the end of the workshop, each technical team had developed a situational analysis of their networks, which will serve as a reference to structure the immunization work plan and all its components (epidemiology, laboratory, health promotion, communications, statistics and cold chain). ■

PAHO Publishes Tools for Monitoring the Coverage of Integrated Public Health Interventions



To improve the population's well-being and bridge gaps in health service delivery, it is necessary to guarantee access to various health interventions, including proven strategies such as vaccination and deworming. Meeting the coverage goals of the immunization program, however, depends on identifying and reaching target populations. This means promoting universal access to healthcare using integrated approaches and a more efficient use of resources. Health services must adopt monitoring and systematic analyses of coverage as indispensable activities.

PAHO's Comprehensive Family Immunization Unit (IM) and Regional Program on Neglected Infectious Diseases (NIDs) have highlighted the need to systematize and integrate methods to monitor coverage of health interventions among pre-school and school-age populations and are offering strategies and opportunities for collaboration.

The publication *Tools for monitoring the coverage of integrated public health interventions* is the result of reviewing and integrating concepts and methodologies that draw on the experiences and lessons learned in countries, with a view towards facilitating joint interventions and monitoring activities under various health programs and platforms.

It is expected that the concepts, methods and tools in each of the modules will be incorporated into ongoing processes to improve the quality of coverage registries, build capacity in appropriate data analysis and make timely use of the resulting information for decision-making and the implementation of interventions that provide effective access to healthcare. ■

The modules can be accessed at <http://iris.paho.org/xmlui/handle/123456789/34510>

Table 1. Prices for Vaccines Purchased through the PAHO Revolving Fund, 2018 (prices in US\$)

VACCINE		DOSES PER VIAL	AVERAGE COST PER DOSE
BCG		10	\$0.2073
Bivalent Oral Polio (bOPV)		10	\$0.1700
		20	\$0.1292
Cholera		1	\$1.8500
DPT		10	\$0.1685
DT	Pediatric	10	\$0.1670
DTaP Triple Acellular	Pediatric	1	\$15.0000
DTaP-IPV	Tetravalent Acellular	1	\$11.5000
DTaP-IPV-Hib	Pentavalent Acellular (pre-filled syringe)	1	\$14.2000
DTaP-IPV-Hep B-Hib	Hexavalent Acellular	1	\$20.6000
DTP	Hib Lyophilized	1	\$2.6500
DTP Hepatitis B Hib Pentavalent	Liquid	1	\$1.0830
Hepatitis A	Pediatric	1	\$8.1150
	Adult	1	\$13.2000
Hepatitis B (Recombinant)	Adult	10	\$0.1815
	Adult	1	\$0.3264
	Pediatric	1	\$0.2165
Hib	Lyophilized	1	\$2.0500
Human Papilloma Virus (HPV)	Bivalent	1	\$8.5000
	Quadrivalent	1	\$9.5800
Inactivated Polio (IPV)		1	\$5.3000
		5	\$2.0000
Measles-Rubella		1	\$2.2500
		10	\$0.6160
Measles/Mumps (Jeryl-Lynn Strain)/Rubella		1	\$5.5900
Measles/Mumps (Zagreb Strain)/Rubella		1	\$2.7500
		5	\$1.4300
Meningococcal ACYW135		1	\$20.3000
Pneumococcal Conjugated Pediatric	10-valent (PCV-10)	1	\$12.8500
	13-valent (PCV-13)	1	\$14.5000

VACCINE		DOSES PER VIAL	AVERAGE COST PER DOSE
Pneumococcal Unconjugated	Adult 23-valent	1	\$7.9800
Rabies Human Use (Vero Cells)		1	\$12.8000
Rotavirus, Liquid	2-dose immunization schedule	1	\$6.5000
Seasonal Influenza Quadrivalent Southern Hemisphere 2018	Adult	10	\$6.0000
	Pediatric	20	\$2.5700
Seasonal Influenza Trivalent Southern Hemisphere 2018	Adult Korean Origin	1	\$4.2400
	Adult French Origin	1	\$3.5000
	Adult Korean Origin	10	\$2.1500
	Adult French Origin	10	\$2.6500
	Pediatric Korean Origin	20	\$1.0750
Pediatric French Origin	20	\$1.3250	
Td	Adult	10	\$0.0935
Tdap Triple Acellular	Adolescent/Adult	1	\$11.4653
Typhoid Polysaccharide		20	\$9.0000
Varicella		1	\$14.4590
Yellow Fever		10	\$1.4300
		5	\$1.2800

2018 Vaccine Prices Amendment I

Member States will be billed according to these prices, unless otherwise stipulated in country agreements. PAHO invoices will include the cost of the vaccine, a 4.25% service charge (applicable only to the cost of the biological product) and actual charges for packing, freight and insurance.

PAHO/WHO Representatives are encouraged to issue proforma invoices based on the "FCA" average prices (indicated in the price list). For estimating the cost of packaging, insurance and freight, use 15% of the value of the biological products for budgetary purposes. This is due, in part, to the origin of the product. The actual cost of these services may vary and will be reflected in the PAHO invoice, which is issued approximately 30 days after the order has been delivered. Delivery lead time is approximately 60 days after the requisition is received by PAHO's Procurement and Supply Management Department (PRO).

Please continue to work closely with the Revolving Fund for Vaccine Procurement in updating quarterly vaccine requirements from Member States. The accuracy and availability of this information is critical to PAHO's work with suppliers to ensure the timely manufacturing and availability of the products.

Table 2. Prices for Syringes Purchased through the PAHO Revolving Fund, 2018-2019 (prices in US\$)

DISPOSABLE SYRINGES		
SIZE	PACKED PER CASE	PRICE PER UNIT*
1cc 22G x 1 1/2"	2400	\$0.0232
	2000	\$0.0311
	1400	\$0.0290
1cc 23G x 1"	3200	\$0.0315
	2000	\$0.0318
	1400	\$0.0219
3cc 23G x 1***	1800	\$0.0330
	1800	\$0.0311
	2400	\$0.0232
5cc 22G x 1 1/2"	1800	\$0.0330
	1200	\$0.0235

2018-2019 Syringe Prices Amendment I

Member States will be billed according to these prices. PAHO invoices will include the cost of the syringes, a 4.25% service charge (applicable only to the cost of the syringes), and actual charges for packing, freight and insurance.

PAHO/WHO Representatives are encouraged to issue proforma invoices based on the "FCA" prices.

For estimating the cost of packing, insurance and freight, use 25% of the value of the syringes for ocean shipments and use 110% of the value of the syringes for air shipments. This is due, in part, to the origin of the product, the weight and the shipping mode — air or sea. The actual cost of these services may vary, and will be reflected in the PAHO invoice, which is issued approximately 30 days after the order has been delivered. Delivery lead time is approximately 30 days by air and 100 days by ocean after the requisition has been received by PAHO's Procurement and Supply Management Department (PRO).

Please continue to work closely with the Revolving Fund for Vaccine Procurement in updating quarterly syringes requirements from Member States. The accuracy and availability of this information is critical to PRO's work with suppliers to ensure the timely manufacturing and availability of syringes. ■

AUTO-DISABLE SYRINGES		
SIZE	PACKED PER CASE	PRICE PER UNIT*
0.5cc 22G x 1 1/2"***	3000	\$0.0480
	3000	\$0.0656
0.5cc 23G x 1"***	3000	\$0.0299
	3000	\$0.0338
	3000	\$0.0282
0.5cc 25G x 5/8"***	4000	\$0.0300
	3000	\$0.0380
	3000	\$0.0390
0.5cc 26G x 3/8"	3000	\$0.0282
	3000	\$0.0380
0.1cc 27G x 3/8"***	3000	\$0.0380
	3000	\$0.0390
	2000	\$0.0395

* Prices FCA (Free Carrier) for each syringe.

** If the amount and size of syringes are the same but have different prices, this is generally due to different suppliers.

The Immunization Newsletter is published four times a year, in English, Spanish and French by the Comprehensive Family Immunization Unit of the Pan American Health Organization (PAHO), Regional Office for the Americas of the World Health Organization (WHO). The purpose of the Immunization Newsletter is to facilitate the exchange of ideas and information concerning immunization programs in the Region and beyond.

An electronic compilation of the Newsletter, "Thirty years of Immunization Newsletter: the History of the EPI in the Americas," is available at: www.paho.org/inb.

References to commercial products and the publication of signed articles in this Newsletter do not constitute endorsement by PAHO/WHO, nor do they necessarily represent the policy of the Organization.

ISSN 1814-6244

Volume XL Number 1 • March 2018

Editors: Octavia Silva, Martha Velandia and Cuauhtemoc Ruiz Matus

©Pan American Health Organization, 2018.
All rights reserved.

Comprehensive Family Immunization Unit

525 Twenty-third Street, N.W.
Washington, D.C. 20037 U.S.A.
<http://www.paho.org/immunization>



**Pan American
Health
Organization**



**World Health
Organization**

REGIONAL OFFICE FOR THE **Americas**

What I Have Learned...

by Gladys Ghisays, former epidemiological surveillance nurse in the Ministry of Health in Córdoba, Colombia and former PAHO immunization focal point

One of my first jobs was as chief nurse of the pediatric wards in the hospital in Montería, Colombia. In this position, I saw how children were admitted with acute malnutrition, cachexia, and often hairless. If they did have hair, it was very fine. After three or four months of intensive treatment, they were discharged, nourished and had grown hair; however, the next month they returned having relapsed.



Gladys Ghisays.

This challenged my role in medicine. I thought that outside the hospital, I could do something more effective to break this vicious cycle. So when I found out that the Ministry of Health would be interviewing professional nurses for public health, I immediately applied. I interviewed and was offered a position in mental health that led to another in epidemiological

surveillance with an incredible challenge: coordinate the epidemiological surveillance and immunization programs in the Province of Córdoba's Ministry of Health. I would be working on the elimination of neonatal tetanus and measles and polio eradication! During this job, I achieved great success and was rewarded by the Provincial Secretary of Health at that time, Dr. Roger Alean Madrid, with a fellowship to study epidemiology at the School of Public Health at the University of Antioquia.

I remember one moment with vaccine-preventable disease (VPD) surveillance. I had created a small initiative for

reporting measles and neonatal tetanus cases and deaths with community leaders in Córdoba's municipalities, which had low coverage. Every month, we met at the provincial level where they reported on coverage in their communities, how many neonatal tetanus and measles deaths they had had that month, regretting when they occurred and being proud when they hadn't. One day, the eldest leader from the most remote community who always had to report deaths, arrived very happy. When it was finally her turn to speak, she proudly shouted: "THIS MONTH THERE WERE NO DECEASEMENTS!" We all laughed and her unique phrasing was adopted then and there for all future meetings.

After almost eight years working as an epidemiologist in the Córdoba Ministry of Health and after carrying out several epidemiological research projects and coordinating programs for immunization, HIV, cutaneous and visceral leishmaniasis, malaria, yellow fever and dengue, I became known in the Ministry of Health thanks to an investigation report on the last case of polio. The Ministry and PAHO called on me to support epidemiologists in other regions with immunization and VPD monitoring, as they were not obtaining the results they desired, while still working as an epidemiologist in Córdoba. I worked a full week with colleagues in each province, side by side. No one knew more than anybody else; we formed teams and helped each other.

As my work at the national level grew, my time in Córdoba decreased. After three years, I had to make one of the hardest decisions in my life: resign from my job in Córdoba and from my job stability, leaving my children for weeks at a time to sign annual employment contracts with PAHO and devote myself completely to the job I had been doing, which I adored. A year later, I was offered a position as a VPD epidemiologist at PAHO.

I went from immunization to running a PAHO field office on the Atlantic coast with the emergency and disaster program.

This momentarily kept me away from immunization – what I have always loved – to work with people displaced by the violence in my province.

I was grateful for that marvelous experience. We worked so hard that the PAHO/WHO representative in Colombia was decorated by the Governor of the Province "for work carried out by PAHO for those displaced by violence in that area of the country." That same day, like something out of a movie, Dr. Ciro de Cuadros called me from PAHO HQ, asking me to be an international consultant in Paraguay. In 2002, I started working as a temporary immunization consultant in Paraguay and then full time after facing stiff competition.

I was determined to not let down those who believed in me and I devoted myself to fulfilling my commitment to PAHO until the last minute and I fought to defend it; thus, I worked in Paraguay, Venezuela and Ecuador. Today after 27 years, I am happily retiring, realized as a person, a woman and a professional, and I cannot find a word other than "Thanks!" to say what I want to express to PAHO. Thanks for existing, thanks for believing in people, thanks for doing good and for struggling so that others can, too. Thank you for all the wonderful colleagues I have had in all the countries and in HQ, and a special thanks to my Paraguayan, Venezuelan and Ecuadorian families. I will always carry them in my heart. ■

The objective of the "What I Have Learned" column is to provide a space for immunization professionals from across the Americas to share their unique experiences and lessons learned. Individuals who are interested in authoring a column are encouraged to contact Octavia Silva at silvao@paho.org