

Immunization Newsletter

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Comprehensive Costing of Brazil's National Immunization Program



Data collection field training in Brasilia, Brazil, September 2014.

Photo credit: Cara Janusz, PAHO.

The Pan American Health Organization's ProVac Initiative is working closely with the Brazilian *Universidade Federal de Goiás* in a ministry-sponsored costing study of the Brazilian National Immunization Program (NIP). Brazil's NIP recently celebrated its 40th anniversary. It has been a pioneer in new vaccine introduction and has one of the most complete immunization schedules in the Region. However, not much is known about the full costs of the program.

The ProVac Initiative is providing technical assistance for the study around its experiences developing and implementing a PAHO immunization program costing tool [COSTVAC]. During the week of 15-19 September 2014, the PAHO ProVac team and researchers from the *Universidade Federal de Goiás* trained a data collection team on survey administration for all administrative and operational levels of the program. Data collection teams are now in the field and were expected to complete data collection by the end of 2015.

Data on resource use and costs of the program (vaccines and supplies, personnel, infrastructure, cold chain and other equipment, among others) will be collected from the national, state and municipal administrative offices and service delivery sites at immunization posts. Data collectors plan on visiting all 27 states; 330 health facilities from 40 municipalities across the country were probabilistically selected. This health facility-based survey of costs is one of the largest of its kind. Results will be available later this year. ■

In This Issue

- 1 Comprehensive Costing of Brazil's National Immunization Program
- 1 Regional Polio Laboratory Network Meets in Mexico
- 2 What are some of the Myths and Facts about Vaccination?
- 3 Training Workshop on Vaccine-preventable Disease Surveillance in St. Lucia
- 3 Jamaica Launches Measles Prevention Campaign
- 4 Regional Meeting on Bacterial Pneumonias and Sentinel Surveillance of Meningitis in Panama
- 4 Immunization Programs Go Digital
- 7 Prices for Vaccines Purchased through the PAHO Revolving Fund, 2015
- 7 Prices for Syringes Purchased through the PAHO Revolving Fund, 2014-2015
- 8 International Evaluation of Peru's National Immunization Strategy

Regional Polio Laboratory Network Meets in Mexico

On 10-11 November 2014, participants from seven countries in the Region attended the Regional Polio Laboratory Network Meeting in Cancun, Mexico, representing the World Health Organization (WHO), the Pan American Health Organization (PAHO), the U.S. Centers for Disease Control and Prevention (CDC), the Malbran Institute (Argentina), Fiocruz (Brazil), Evandro Chagas Institute (Brazil), the National Health Institute (Colombia), the Public Health Institute (Chile), the Institute for Epidemiologic Diagnosis and Reference (Mexico) and the Caribbean Public Health Agency (Trinidad and Tobago). The objectives of the meeting were to provide updates on the status of the revision of the WHO Polio Lab Manual (PLM); present the performance of PAHO's polio labs with regards to the proficiency tests for virus isolation, intratypic differentiation (ITD) and sequencing; present a new environmental surveillance algorithm adopted by the Global Polio Laboratory Network (GPLN) in June 2014; and present the ITD 4.0 algorithm that was adopted by the GPLN.

The representative from WHO presented an update on the global status of wild poliovirus (WPV) and vaccine-derived poliovirus (VDPV) transmission, as well as the status of the GPLN. The PAHO representative presented a regional update on the Regional Polio Laboratory Network, including performance indicators and workload. Areas for improvement were identified and shared.

Summaries of the performance of PAHO polio labs with regards to the proficiency tests for virus isolation, ITD and sequencing were presented. WHO also shared the

See **POLIO LAB** on page 2

POLIO LAB continued from page 1

feedback received after pilot testing the new accreditation checklists for virus isolation, ITD and sequencing, which were implemented in August 2014. The accreditation approach based on the type of test performed in each lab will facilitate the review and accreditation of polio labs.

Each laboratory representative presented an update on the participation in poliovirus studies (including VDPV). Finally, a brainstorming session covered the topics of detection, characterization and molecular epidemiology of WPV, VDPV and Sabin-like polioviruses and environmental poliovirus surveillance. Additionally, recommendations on routine workload, cell lines, VDPV, proficiency testing, environmental surveillance, information systems and future trainings/ meetings were shared. ■



Participants at the Regional Polio Laboratory Network Meeting in Cancun, Mexico, November 2014.

Photo credit: Lorena Suarez-Idueta, Ministry of Health, Mexico.

What are some of the Myths and Facts about Vaccination?

Myth 1: Better hygiene and sanitation will make diseases disappear – vaccines are not necessary.	FALSE Fact 1: The diseases we can vaccinate against will return if we stop immunization programs. While better hygiene, hand washing and clean water help protect people from infectious diseases, many infections can spread regardless of how clean we are. If people are not vaccinated, diseases that have become uncommon, such as polio and measles, will quickly reappear.
Myth 2: Vaccines have several damaging and long-term side-effects that are yet unknown. Vaccination can even be fatal.	FALSE Fact 2: Vaccines are very safe. Most vaccine reactions are usually minor and temporary, such as a sore arm or mild fever. Very serious health events are extremely rare and are carefully monitored and investigated. You are far more likely to be seriously injured by a vaccine-preventable disease than by a vaccine. For example, in the case of polio, the disease can cause paralysis, measles can cause encephalitis and blindness, and some vaccine-preventable diseases can even result in death. While any serious injury or death caused by vaccines is one too many, the benefits of vaccination greatly outweigh the risk, and many, many more injuries and deaths would occur without vaccines.
Myth 3: Vaccine-preventable diseases are almost eradicated in my country, so there is no reason to be vaccinated.	FALSE Fact 3: Although vaccine-preventable diseases have become uncommon in many countries, the infectious agents that cause them continue to circulate in some parts of the world. In a highly inter-connected world, these agents can cross geographical borders and infect anyone who is not protected. In Western Europe, for example, measles outbreaks have occurred in unvaccinated populations in Austria, Belgium, Denmark, France, Germany, Italy, Spain, Switzerland and the United Kingdom since 2005. So, two key reasons to get vaccinated are to protect ourselves and to protect those around us. Successful immunization programs, like successful societies, depend on the cooperation of every individual to ensure the good of all. We should not rely on people around us to stop the spread of disease; we, too, must do what we can.
Myth 4: Vaccine-preventable childhood illnesses are just an unfortunate fact of life.	FALSE Fact 4: Vaccine-preventable diseases do not have to be 'facts of life.' Illnesses such as measles, mumps and rubella are serious and can lead to severe complications in both children and adults, including pneumonia, encephalitis, blindness, diarrhea, ear infections, congenital rubella syndrome (if a woman becomes infected with rubella in early pregnancy), and death. All these diseases and suffering can be prevented with vaccines. Failure to vaccinate against these diseases leaves children unnecessarily vulnerable.
Myth 5: Giving a child more than one vaccine at a time can increase the risk of harmful side-effects, which can overload the child's immune system.	FALSE Fact 5: Scientific evidence shows that giving several vaccines at the same time has no adverse effect on a child's immune system. Children are exposed to several hundred foreign substances that trigger an immune response every day. The simple act of eating food introduces new antigens into the body, and numerous bacteria live in the mouth and nose. A child is exposed to far more antigens from a common cold or sore throat than they are from vaccines. Key advantages of having several vaccines at once is fewer clinic visits, which saves time and money, and children are more likely to complete the recommended vaccinations on schedule. Also, when it is possible to have a combined vaccination, e.g. for measles, mumps and rubella, that means fewer injections.
Myth 6: Influenza is just a nuisance, and the vaccine isn't very effective.	FALSE Fact 6: Influenza is much more than a nuisance. It is a serious disease that kills 300,000-500,000 people worldwide every year. Pregnant women, small children, elderly people with poor health and anyone with a chronic condition, like asthma or heart disease, are at higher risk for severe infection and death. Vaccinating pregnant women has the added benefit of protecting their newborns (there is currently no vaccine for babies under six months). Vaccination offers immunity to the three most prevalent strains circulating in any given season. It is the best way to reduce your chances of severe flu and of spreading it to others. Avoiding the flu means avoiding extra medical care costs and lost income from missing days of work or school.
Myth 7: It is better to be immunized through disease than through vaccines.	FALSE Fact 7: Vaccines interact with the immune system to produce an immune response similar to that produced by the natural infection, but they do not cause the disease or put the immunized person at risk of its potential complications. In contrast, the price paid for getting immunity through natural infection might be mental retardation from Haemophilus influenzae type b (Hib), birth defects from rubella, liver cancer from hepatitis B virus, or death from measles.
Myth 8: Vaccines cause autism.	FALSE Fact 8: The 1998 study which raised concerns about a possible link between measles-mumps-rubella (MMR) vaccine and autism was later found to be seriously flawed, and the paper has been retracted by the journal that published it. Unfortunately, its publication set off a panic that led to dropping immunization rates, and subsequent outbreaks of these diseases. There is no evidence of a link between MMR vaccine and autism or autistic disorders.

Training Workshop on Vaccine-preventable Disease Surveillance in St. Lucia

Medical doctors and other health care workers from the public and private sector of St. Lucia met in Castries on 6 February 2015 for a training workshop on vaccine-preventable diseases (VPDs). The purpose of the training workshop was to ensure the maintenance of measles and rubella elimination and polio eradication in St. Lucia through increasing the knowledge, skills and attitudes of healthcare workers in the surveillance and reporting of VPDs.

The one-day training workshop targeted medical and nursing personnel from the primary and secondary care health facilities in both the public and private sector. It was conducted to increase participant awareness of the importance of strengthening surveillance for vaccine-preventable diseases, in keeping with PAHO resolution CSP28.R14 for maintaining the elimination of measles and rubella in the Americas.

The format of the training workshop involved an overview of the Expanded Program on Immunization (EPI) in St. Lucia and technical updates on VPDs, the surveillance system and reporting indicators for measles, rubella, congenital rubella syndrome (CRS) and polio. Presentations were done by the EPI Manager and National Epidemiologist of St. Lucia, as well as by EPI advisors from the Pan American Health Organization (PAHO). A total of 23 persons were in attendance, including twelve medical doctors and visiting EPI managers from Barbados and Jamaica.



Participants at the VPD surveillance workshop, St. Lucia, February 2015.
Photo credit: Chad Paul, Ministry of Health, St. Lucia.

The training was very well received by all the participants and the presentations generated a stimulating discussion. The participants expressed their commitment to enhancing VPD surveillance in St. Lucia and keeping the country free of measles, rubella and polio. ■

Jamaica Launches Measles Prevention Campaign

In ensuring their commitment to PAHO Resolution CSP28.R14 to maintain the status of measles and rubella elimination in the Region of the Americas, and in recognition of the current risk of measles re-importation into the country, Jamaica launched a measles prevention campaign on 16 February 2015. This campaign is targeting approximately 195,000 children aged 1-6 years for vaccination with both doses of the MMR vaccine. This cohort of children includes some 100,000 children aged 19 months to 3 years who would not normally be expected to receive the second dose of MMR at their age.

The campaign is being conducted through health facilities and schools and will extend for the period 16 February to 8 May 2015 and at a cost of JA\$54.4 million.

In his address at the launch, the Minister said: "Although this campaign will

largely focus on the provision of the MMR vaccine including the booster dose, it will also provide other vaccines available in the public sector which the children may have missed." He added that "the main objectives are to capture those who have not been fully immunized for their age in order to improve the overall immunization coverage in Jamaica, more importantly to provide adequate protection in order to reduce the susceptible population for measles in children and at the same time have an impact on other vaccine-preventable diseases such as rubella."



Minister of Health, Dr. Fenton Ferguson (center) makes a point during the launch of the Jamaican Ministry of Health's Measles Prevention Campaign held at the Office of the Prime Minister on Monday, February 16, 2015.
Photo credit: Stephanie Shaw-Smith, Ministry of Health, Jamaica.

Through the success of immunization, Jamaica had the last case of locally transmitted measles in 1991, but the MMR vaccination coverage has fluctuated from a low of 81% in 2011 to a high of 94% in 2013. The campaign target coverage for both doses of MMR is 95% or greater. ■

Regional Meeting on Bacterial Pneumonias and Sentinel Surveillance of Meningitis in Panama

Eighty participants representing 12 countries (Brazil, Colombia, Chile, Dominican Republic, Ecuador, El Salvador, Honduras, Nicaragua, Panama, Paraguay, Peru, and Venezuela), the Pan American Health Organization (PAHO), the Sabin Vaccine Institute, and the U.S. Centers for Disease Control and Prevention (CDC) attended the Regional Meeting on Bacterial Pneumonias and Sentinel Surveillance of Meningitis in Panama City on 10-11 December 2014.

The meeting objectives included sharing experiences with sentinel surveillance at regional and national levels; reviewing laboratory performance; planning activities to improve the quality of surveillance data according to the Global Surveillance Network for bacterial pneumonias and meningitis or invasive bacterial diseases (IBD) and rotavirus;

and presenting the results of rotavirus vaccine impact studies in the Americas Region.

Ten countries in the Region have implemented IBD sentinel surveillance and 16 have implemented rotavirus sentinel surveillance. The regional results of the IBD and rotavirus surveillance were presented, and challenges and strengths were discussed. Additionally, three sentinel hospitals from two countries (Nicaragua and Honduras) presented IBD surveillance results.

The focus of the meeting was to discuss how to improve data quality generated by sentinel sites with epidemiologists and laboratory professionals. The indicators that the countries should reach in order to be part of the Global Surveillance Network were emphasized. The main challenge for 2015



Participants in the Regional Meeting of Bacterial Pneumonias and Sentinel Surveillance of Meningitis, Panama, December 2014.

Photo credit: Jeronimo Canahuiri, Ministry of Health, Peru.

is to implement a case-based database at sentinel sites and at the national level. It was concluded that the regional network (37 IBD sentinel sites and 74 rotavirus sentinel sites) had reached many achievements in previous years, but it is important to ensure the quality of the information in order to use it for the assessment of vaccine impact. ■

Immunization Programs Go Digital

New tools that empower users to have an active role in their vaccination are emerging. Some tools can also facilitate planning and monitoring vaccine interventions for providers and public health authorities. These tools take advantage of new information and communication technologies (ICT) and the expansion of the use of mobile phones, smart phones and other portable devices. The next three articles present examples of innovations for immunization. While PAHO promotes the use of ICT tools to improve the performance of immunization programs, the examples presented in this issue of the *Immunization Newsletter* are informational only and do not represent PAHO endorsement of one product over another.

Immunization App Enters Innovation Competition in Chile

In October 2014, an immunization app developed by Chile's National Immunization Program, in collaboration with a local university, was selected to represent the Ministry of Health (MOH) in a national innovation competition. The app *InfoVacunas* is free and provides users with information about:

- Vaccines and the diseases they prevent;
- A tool to help parents (and adults themselves) know what vaccines are due and when, based on the sex and the date of birth of the user. It can send alerts to the user about the due date for each vaccine;
- The location of vaccination centers using a map tool, indicating the closest centers using a reference point; and
- Immunization news and information about ongoing campaigns, including frequent Q&A's on hot topics.

Since being launched in April 2014, *InfoVacunas* has been downloaded by over 4,000 people. The MOH plans to link this app to the country's National Immunization Registry. *InfoVacunas* represented Chile's MOH in "Innovation Challenges for the Public Sector 2014" (*Desafíos de Innovación para el Sector Público 2014*), a competition for a national innovation award against other ministries. To learn more about *InfoVacunas*, go to vacunas.minsal.cl. You can also download the app at <http://apps.gob.cl/apps/infovacunas.html> ■

Contributed by: Pamela Burgos and Fernando Muñoz, National Immunization Program, Ministry of Health, Chile.

Logo for InfoVacunas.

InfoVacunas homepage displaying where to access various features of the app, like adding an immunization schedule and a map to locate vaccination centers.

Map on InfoVacunas indicating close vaccination centers.

IAP-Immunize India, a Mobile Vaccination Reminder Program

In 2014, India launched what would soon be the world's largest vaccination reminder service, a joint program from Immunize India Charities and the Indian Academy of Pediatrics (IAP).

IAP-Immunize India is an SMS text-based vaccination reminder service program. It is available nationally and any person can register their child by sending an SMS with the child's name (or nickname) and date of birth to a national short code from their mobile phone, for example: "immunize >name<date of birth." The same phone will then receive vaccination reminders for 12 years, whenever the child is due for a shot; this includes: two reminders before the due date and one after the due date. It is free of cost across all mobile networks anywhere in India.

With around 2,000 new users every day, the promoters of the initiative are overwhelmed by the service's success and thoughts are already going towards the next service to be added.

However, creating and operating a national, free of cost, opt-in mobile vaccination reminder alerts system has faced many hurdles. The challenges include, but are not limited to:

- Bureaucratic hurdles to launch a government-promoted service
- Getting budgets and funds for service technology and operations
- Ensuring a non-partisan service that does not promote vaccine brands or other business interests
- Overcoming language and illiteracy barriers

An urgent need: Over 1.5 million children under the age of five years die every year in India and another 1 million or more are disabled for life. Most of these are due to vaccine-preventable diseases. A major reason for this is that parents often forget to vaccinate their child on time, as most parents in India do not maintain a vaccination schedule for their child. This issue is seen in both urban and rural areas. In India, the percentage of children between 12–23 months of age who received all recommended vaccines on time is <60%. Forgetfulness and missed vaccination opportunities are the main causes. This results in

preventable morbidity and mortality.

Does it work? Reminder services in several countries have been effective in increasing vaccination compliance. There are over 40 published scientific studies that prove the effectiveness of vaccination reminders. India has 700 million mobile phones that support text messaging. This mobile phone revolution is ongoing. Almost every adult in both urban and rural areas has a cell phone and connection. A well-promoted national text message reminder service could become a very cost-effective method of reminding parents that a vaccination is due. Controlling vaccine-preventable diseases will reduce morbidity and prevent deaths.

Genesis and growth: IAP-Immunize India overcame the above-mentioned challenges by using an innovative model. Immunize India Charities conceived the program, which was actually prompted by distressed mothers when they delayed or missed immunization for their children, as observed in clinics and hospitals. Immunize India Charities then partnered with the Indian Academy of Pediatrics (IAP) to endorse the program. It is financially supported by a national telecom sponsor and other large corporations. This Public-Private Partnership (PPP) is the basis for a sustainable and reliable reminder service. The IAP is an umbrella professional organization for all those who are involved with child medical care, consisting of over 17,000 members. IAP is the disseminator and motivator, while India Charities continues to do the back end work of the program.

IAP-Immunize India initially completed a successful national pilot with thousands of children enrolled from all corners of the country before launching the program. It is being publicized using posters, pamphlets and handouts at clinics and hospitals all over India in nine languages printed through an education grant. The national telecom sponsor is underwriting the costs of the SMS texts.

As of 10 January 2015, there have been 129,567 registrations. IAP-Immunize India just

started working about 9 months ago and only professionals have been aware of the program. The potential of news and social media has yet to be utilized.

Future plans

- Increase service coverage.
- Utilize television and newspaper media, as well as social platforms, for promotion to the fullest extent.
- Inform allied organizations like obstetrics, midwifery, nursing and other medical associations to seek their cooperation.
- In a multilingual, multi-ethnic country like India, messages need to go out in local languages, too. Software upgrading and improvements can be made to facilitate this.

Immunize India Charities only offers this service to non-partisan organizations, such as associations of paediatricians or doctors, industry associations, well known non-governmental organizations (NGOs) or national/provincial/city governments. To learn more, please visit www.immunizeindia.org.

Contributed by: Dr. Ranjan Kumar Pejaver, Immunize India.

Some of the most important features of IAP-Immunize India are:

- It is free of cost.
- It is available across the country and across all mobile networks.
- It does not promote any individual doctor or any brand of vaccination.
- Generic vaccine names are used and messages are clear and concise.
- It follows the IAP-recommended vaccination program.
- It can be modified to cater to any other schedule. Any new or altered recommendations can be incorporated to keep it updated and current.
- It can be set to any language or multiple languages.
- It utilizes the most popular types of cell phones and text messages.
- It uses a software-based program and hence, requires very little human resources to implement.
- All messages are automatically generated and proof of sent messages can be provided.
- Children who have already started their vaccination schedule can also join the program.
- There is an option for families to opt out of the program. ■

Vaxeen: a Digital and Intelligent Immunization Assistant

Keeping reliable and easy-to-access vaccination records is indispensable for the monitoring and evaluation of vaccination interventions. Vaxeen is a digital, intelligent and personal immunization assistant (www.vaxeen.com) to facilitate individual data recording and processing of a community's immunization history.

Vaxeen does not replace any other data system and is an easy system to integrate. It ensures timely and accurate database synchronization, adapting to any changes in immunization schedules. Furthermore, it is a system that can be scaled up since it makes it possible to include new vaccines as they are

added to a national immunization schedule. It also facilitates coverage monitoring (at the level of the individual), with temporal and spatial relevance. The system is designed to provide the greatest data safety and user confidentiality protection.

The Vaxeen platform can facilitate:

- Measuring complete immunization schedules for each age group and comparing data with previous years.
- Monitoring the percentage of people that have received all the vaccines for their age according to the immunization schedule.
- Monitoring drop-out rates.
- Measuring the return rate to the health establishment to complete the vaccination schedule.
- Identifying problems in data quality.
- Monitoring the quality of the service and the information and education provided in the health facility to vaccinated individuals on an ongoing basis.
- Measuring the level of user satisfaction (family, health professionals).
- Identifying and monitoring events supposedly attributable to vaccines and immunization.
- Conducting vaccine effectiveness studies.

Description of Vaxeen services by profile:

TYPE OF PROFILE	SERVICE CHARACTERISTICS
INSTITUTIONAL	<ul style="list-style-type: none"> • Controls, manages and monitors the immunization coverage in a community. • Uses digital map technology to offer disaggregated geographic information on the coverage of each vaccine used in the country. • Discloses the location of under-vaccinated populations, giving information by age group, time of year and geographical areas. • Identifies geographical areas with pockets of low coverage that can be cross-referenced with data coming from outbreaks, presented in graphs or digital maps. • Identifies adverse events following vaccination. • Monitors the cold chain, presented separately by each vaccination center. • Monitors vaccine distribution and stock, in the form of reports for each vaccine and by vaccination center. • Facilitates the generation of reports to the community or to specific populations, when needed (for example: during campaigns, outbreaks, or new recommendations).
PROFESSIONAL	<ul style="list-style-type: none"> • Controls, manages and monitors the immunization coverage of your patient community. • Facilitates the storage and portability of information on vaccine history and reports it to the system through alerts, when they are incomplete. • Facilitates the generation of reports to the community or to specific populations, when needed (for example: during campaigns, disease outbreaks, or new recommendations). • Identifies adverse events following immunization by vaccine, generating early alerts. • Provides useful, up-to-date information for the professional on technical issues, such as preparations, dosage according to age, area of application and recommendations for before and after vaccination, with the intention to avoid missed opportunities for vaccination.
USER	<ul style="list-style-type: none"> • Facilitates the portability and management of the user's vaccination history and that of their family, promoting the person's ownership of their immunization data. • Provides useful and intuitive information about each vaccine, including general considerations, the recommended schedule, administration, indications and contraindications, frequently asked questions (FAQ), etc., with the objective of avoiding missed opportunities for vaccination. • Creates useful alerts, such as when, which and how many doses of vaccines are required. Alerts are also created when vaccination was not completed during the first year of life, for admission to schools, during adolescence or old age, for at-risk people and the community in general. • Provides information at the required time and place. • Identifies the user's location to provide useful information on the location of hospitals, health centers, pharmacies, and vaccination centers. • Adapts for use in different countries, as the system can keep track of what vaccines the user has received and check what the alerts are in the destination country, in order to give recommendations on what vaccines the user should receive, as necessary. ■

Contributed by: Dr. Pablo Tregnaghi, CEDEPAP (CEDEPAP [<http://www.cedepap.org>] is an Argentinian non-profit association working on developing information and communication solutions for health).

Table 1. Prices for Vaccines Purchased through the PAHO Revolving Fund, 2015 (prices in US\$)

Vaccine		Doses per vial	Average price per dose	Vaccine		Doses per vial	Average price per dose	
BCG	Bulgarian Origin	10	0.159	Measles/Mumps (Urabe Strain)/Rubella		1	3.9000	
	Indian Origin	10	0.136	Measles/Mumps (Jeryl-Lynn Strain)/Rubella		1	6.0000	
Cholera		1	1.8500	Measles/Mumps (Zagreb Strain)/Rubella		1	2.2500	
DPT	Indian Origin 1	10	0.2400			5	1.0900	
	Indian Origin 2	10	0.2340	Meningococcal ACYW135 Conjugated		1	26.0000	
	Indonesian Origin	10	0.1970	Polio, Oral Glass		20	0.1424	
DT	Pediatric	10	0.1190	Pneumococcal Conjugated		Pediatric 10-valent	1	14.1200
DTaP Triple Acellular	Pediatric	1	12			Pediatric 13-valent	1	15.6800
DTaP-IPV	Tetavalent Acellular	1	9.55	Pneumococcal Unconjugated		Adult 23-valent	1	7.6200
DTaP-IPV-Hib	Pentavalent Acellular	1	12.5			5	7.0000	
DTaP-IPV-Hep B-Hib	Hexavalent Acellular	1	18.65	Rabies Human Use Vero Cells		1	11.0000	
DTP	Hib Lyophilized	1	2.6500	Rabies Human Use PCEC		1	10.5000	
DTP Hepatitis B Hib Pentavalent	Liquid	1	2.2650	Rotavirus, Liquid		2-dose Immunization Schedule	1	6.5000
		10	2.0000	Td		Adult Indian Origin 1	10	0.0800
Hepatitis A	Pediatric USA Origin	1	8.0000			Adult Indian Origin 2	10	0.1100
	Pediatric French Origin	1	9.5000			Adult Bulgarian Origin	10	0.1450
	Adult	1	11.5000	Tdap Triple Acellular		Adolescent/Adult	1	10.5267
Hepatitis B Recombinant	Adult	10	0.25	Typhoid Polysaccharide			20	8.9000
	Adult Korean Origin	1	0.43	Varicella		Korean Origin	1	14.1000
	Adult Indian Origin	1	0.3			USA Origin	1	17.5000
	Pediatric Korean Origin	1	0.3200	Yellow Fever			10	1.0906
	Pediatric Indian Origin	1	0.2000					
Hib	Lyophilized	1	1.9500					
Human Papilloma Virus HPV Bivalent		1	8.5000					
Inactivated Polio IPV		1	2.8000					
		5	1.9000					
Seasonal Influenza Trivalent Southern Hemisphere 2015	Adult Korean Origin	1	4.2000					
	Adult Korean Origin	10	3.0000					
	Adult French Origin	10	3.9500					
	Pediatric French Origin	20	1.9750					
	Pediatric Korean Origin	20	1.5000					
Seasonal Influenza Trivalent Northern Hemisphere 2015-2016	Adult Korean Origin	1	4.4000					
	Adult Korean Origin	10	2.9500					
	Pediatric Korean Origin	20	1.4750					
Measles-Rubella		1	1.8500					
		10	0.5780					

Vaccines 2015 Price List 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 vaccines 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 the Procurement and Supply Management Department.

Please continue to work closely with PAHO's Immunization Unit 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, 2014-2015 (prices in US\$)

DISPOSABLE SYRINGES, PLASTIC WITH ATTACHED NEEDLE			2014-2015 AUTO-DISABLE SYRINGES, PLASTIC WITH ATTACHED NEEDLE			
SIZE	PACKED PER CASE	PRICE PER UNIT *	SIZE	PACKED PER CASE	PRICE PER UNIT *	
1cc 22G x 1 1/2"	3600	\$0.0330	0.5cc 22G x 1 1/2"	3000	\$0.0660	
	2000	\$0.0338		0.5cc 23G x 1"	3000	\$0.0470
	1400	\$0.0299			1300	\$0.0380
1cc 23G x 1"	3600	\$0.0320	0.5cc 25G x 5/8"	1300	\$0.0380	
	2000	\$0.0338		3000	\$0.0510	
	1400	\$0.0299		0.5cc 26G x 3/8"	1300	\$0.0380
1cc 25G x 5/8"	3600	\$0.0330	0.1cc 27G x 3/8"		1300	\$0.0450
	1400	\$0.0299				
	1000	\$0.0300				
1cc 26G x 3/8"	1400	\$0.0299				
	1000	\$0.0300				
1cc 27G x 3/8"	1400	\$0.0299				
5cc 22G x 1 1/2"	1600	\$0.0350				
	1000	\$0.0315				

* Prices FCA (Free Carrier) for each syringe.

2014-2015 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 Pro Forma 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 70 days by air and 120 days by ocean after the requisition has been received by the Procurement and Supply Management Department.

Please continue to work closely with PAHO's Immunization Unit in updating quarterly syringe requirements from Member States. **The accuracy and availability of this information is critical to PAHO's Procurement and Supply Management Department's work with suppliers to ensure the timely manufacturing and availability of syringes.**

Source: For up-to-date vaccines prices, please visit: www.paho.org/revolvingfund (click on "Vaccine Prices, 2015" - under the 'Revolving Fund Related Documents' column.) ■

Starting in 2015, the Immunization Newsletter will be published four times a year, in English, Spanish, and French by the Comprehensive Family Immunization Project 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, in order to promote greater knowledge of the problems faced and possible solutions to those problems.

An electronic compilation of the *Newsletter*, "Thirty years of *Immunization Newsletter*: the History of the EPI in the Americas", is now 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.

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International Evaluation of Peru's National Immunization Strategy

The international evaluation of Peru's national immunization strategy took place between 20 and 31 October 2014 in Lima with the participation of a group of international experts from PAHO (Nicaragua, Ecuador and Washington, DC), the United States Centers for Disease Control and Prevention (CDC), Harvard University, Honduras, Brazil, Chile, and Switzerland, as well as national officials from different levels.

The purpose of this evaluation was to analyze the immunization strategy in the context of Peru's health system, their environment and their ability to adapt to new demands, such as those generated by health reforms and those that arise in response to the needs of the population. These include, among others:

- Maintaining the elimination and eradication of vaccine-preventable diseases
- Attending to the unfinished agenda
- Sustainably introducing new vaccines and technologies
- Keeping immunization on the political agenda



Participants at the evaluation of Peru's national immunization strategy in Lima, Peru, October 2014.
Photo credit: Ministry of Health, Peru.

The main aspects discussed in the evaluation included: financing and sustainability of the immunization program, managerial and administrative capacity at all levels, data quality and the information system, the epidemiological surveillance system, the cold chain, vaccine safety, social mobilization activities and user

satisfaction, as well as the integration of immunization in the health system.

The evaluation team presented a detailed final report comparing the progress from the previous evaluation and a 5-year Plan of Action to serve as a roadmap for implementing the evaluation's recommendations. ■