

# Immunization Newsletter

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## 30<sup>th</sup> Caribbean Immunization Managers' Meeting

58 participants from 29 countries of the English, Dutch and French-speaking Caribbean and partners from PHAC (Public Health Agency of Canada), CARPHA (Caribbean Public Health Agency), and PAHO (Pan-American Health Organization) met in Phillipsburg, St. Maarten on 19-21 November 2014 for the 30<sup>th</sup> Caribbean Immunization Managers' Meeting.

The purpose of meeting was to analyze achievements for 2014 and plan activities for 2015 while sharing country experiences on the immunization program, with specific focus on the implementation of the Plan of Action for maintaining measles, rubella, and congenital rubella syndrome (CRS) elimination in the Region as well as the introduction of the inactivated polio vaccine (IPV) in the routine immunization schedule of each country by the end of 2015 in keeping with the Global Polio Eradication Initiative's Polio Eradication and Endgame Strategic Plan.

The format of the meeting involved technical updates on vaccine-preventable diseases (VPDs) and immunization-related programmatic areas by PAHO Expanded Program on Immunization (EPI) advisors and other technical experts, as well as the sharing of country experiences in surveillance, research, vaccine introduction, investigations of events allegedly attributable to vaccination or immunization (ESAVI), cold chain management, among other topics.



Participants of the 30<sup>th</sup> Caribbean EPI Managers' Meeting, 19-21 November 2014. Photo credit: Dr. Papa Coumba Faye, PAHO-HAI.

EPI managers also met in groups to facilitate discussions on achievements with their Plans of Action for 2014 and to finalize plans for 2015 with input from other peers.

Countries continued to improve their EPI coverage with an average of 94% coverage in 2013 for all the antigens reported (BCG, DTP, Polio, Hib, HepB and MMR1). MMR2 coverage was 84%. Surveillance for measles, rubella continue to be strengthened with achievement of >80% for all fever and rash indicators except timely submission of samples to the reference laboratory. However polio (AFP) surveillance needs improvement.

Some key recommendations from the meeting were for:

- Countries to continue working towards achieving 95% coverage or more for each administered vaccine at all levels.
- Countries to sustain polio eradication and measles/rubella/ CRS elimination by ensuring >95% vaccination coverage and high-quality surveillance.
- Countries to increase efforts to introduce newer and underutilized vaccines.
- Countries to administer the 2<sup>nd</sup> MMR dose during the second year of life. ■

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## Honduras Demographic and Health Survey 2011-2012: Analysis of Vaccination Timeliness and Co-administration

### Introduction

While many countries in the Americas have sufficiently high vaccination coverage rates, there is increasingly a focus on improving timeliness of vaccination. Timely adherence to vaccination schedules both minimizes the time individuals are unprotected against vaccine-preventable diseases, maximizes the effectiveness of vaccines, and for some vaccines may reduce the risk of febrile convulsions. Moreover, timeliness is particularly important for vaccines that have upper and lower age limits for administration, such as the rotavirus vaccine series.

The recommended immunization schedule for children aged <2 years in Honduras is as follows:

Vaccine	Recommended age of receipt
Bacille Calmette-Guerin (BCG), hepatitis B	birth
Pentavalent (diphtheria, tetanus, pertussis (DTP), hepatitis B, <i>Haemophilus influenzae</i> type b)	2, 4, 6 months
Oral poliovirus vaccine (OPV)	2, 4, 6, 18 months
Rotavirus (Rota)	2, 4 months
Pneumococcal conjugate vaccine (PCV)	2, 4, 6 months
Measles, mumps, rubella (MMR)	12 months

The rotavirus vaccine and pneumococcal vaccine were introduced to the recommended schedule in 2009 and 2011, respectively.

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For 2013, Honduras' national reported coverage for BCG was 87%, pentavalent3 87%, and MMR1 89%. However, there is evidence that suggests that coverage may be higher and that the coverage data is likely affected by an inaccurate denominator. The most recent Demographic and Health Survey (DHS) conducted in Honduras reported that 99.1%, 95.2% and 87.7% of children aged 12-23 months had received BCG, pentavalent3 and MMR1, respectively.

We used data from the most recent Demographic and Health Survey (DHS) conducted in Honduras in 2011-2012 to analyze timeliness of vaccination receipt and trends in co-administration of certain vaccines. We highlight the methodology proposed by the Pan American Health Organization (PAHO), developed with support from the Global Immunization Division of the United States Centers for Disease Control and Prevention (GID/CDC), to support analyses of vaccination timeliness, simultaneity and co-administration using survey data and the definitions proposed by PAHO for vaccination timeliness: "Early", "On time", "Delayed" and "Late".

## Methods

The 2011-2012 DHS included immunization data on children up to five years of age at the time of the survey. Only children for which immunization cards could be produced (and dates of immunization could be ascertained) were included in our analysis. Out of the 10, 592 children on which data were collected, the number of children with health cards that were included in the analysis was 9,270 (87.5%). Analyses were performed taking into account the DHS design.

The timeliness definitions were based on Honduras Immunization Program (EPI) and PAHO discussions (**Table 1**). In brief:

**"Early"** doses are doses administered before the recommended period. For second or third doses of a series, "early" could either mean that a child received a dose at an earlier age than recommended (e.g. <120 days of age, for Penta2) or with a shorter interval than recommended (e.g. <28 days after the previous dose, for Penta2). Early doses can either be considered valid or invalid, depending upon the vaccine.

**"On time"** doses are doses administered during the recommended time period (blue column). For

second or third doses of a series, the "on time" definition could include both an age range (e.g. 120-150 days of age for Penta 2) and an interval requirement (e.g. 28-58 days from the previous dose, for Penta 2 and 3). All "on time" doses are considered valid.

**"Delayed"** doses are doses administered after the recommended period. For second or third doses of a series, "delayed" could mean that a child received a dose at a later age than recommended (e.g. 151-365 days of age, for Penta2) or after a longer interval than recommended (e.g. >59 days after the previous dose, for Penta2). All delayed doses are considered valid.

**"Late"** doses are doses administered after the delayed period. Late doses can either be considered valid or invalid, depending upon the vaccine. However, these doses are not counted when calculating routine immunization coverage in children <12 months of age and for MMR in children 12-24 months.

Analyses were performed in SASv9.3 (all regression analyses and descriptive analyses) and R v.3.0.2 (survival analyses).

**Table 1: Definitions of timeliness used for Honduras 2011-2012 DHS analysis**  
Gray: invalid doses (early or late)

Vaccine	Recommended age	EARLY - Interval	EARLY - age	ON TIME	DELAYED - Age	DELAYED - Interval	LATE
Penta1	2 months	--	<60 days of age (invalid)	60-90 days of age	91-364 days of age	--	>1 year of age (365 days)
Penta2	4 months	<28 days after previous dose (invalid)	<120 days of age	120-150 days of age and 28-58 days after previous dose	151-365 days of age	>59 days after previous dose	>1 year of age (365 days)
Penta3	6 months	<28 days after previous dose (invalid)	<180 days of age	180-210 days of age and 28-58 days after previous dose	211-365 days of age	>59 days after previous dose	>1 year of age (365 days)
Rota1	2 months	--	<60 days of age (invalid)	60-90 days of age	91-105 days of age	--	>105 days of age (invalid)
Rota2	4 months	<28 days after previous dose (invalid)	<120 days of age	120-150 days of age and 28-58 days after previous dose	151-240 days of age	>59 days after previous dose	>240 days of age (invalid)
MMR	12 months	--	< 365 days of age (invalid)	365-395 days of age	396-730 days of age	--	>2 years of age (730 days)

## Results

### Card retention rates

Among children included in the DHS, there was differential health card retention by year of birth: health cards were presented for 93.2% of children born in 2011, compared to 83.7% for children born in 2007.

### Average age of receipt of vaccination

Among children with vaccination cards, the average age at receipt of vaccination for all years assessed in the 2011-2012 DHS falls within the recommended age limits (**Table 2**).

Note that the analysis shown in table 2 includes only children with producible vaccination cards at the time of the survey; it is likely that children with vaccination cards are more likely to be vaccinated on

**Table 2: Average age, in days, at receipt of vaccination by year of birth among children with producible vaccination cards\*, 2011-12 DHS**

Vaccine	On-time (recommended)	2007	2008	2009	2010	2011	p-value for trend
Penta1	60-90 days of age	72.6	72.9	71.2	67.9	64.3	0.02*
Penta2	120-150 days of age and 28-58 days after previous dose	144	144	141.8	137.7	134.5	0.01*
Penta3	180-210 days of age and 28-58 days after previous dose	221.7	221.3	214.8	206.9	200.4	0.01*
Rota1	>60 days of age			70.6	69.6	67.8	0.10
Rota2	120-150 days of age and 28-58 days after previous dose			139.5	138.4	134.3	0.20

Notes: "\*" indicates that the test for trend is statistically significant. These numbers include only children with producible vaccination cards at the time of the survey.

time, as cards can remind caregivers when to return for vaccination. Consequently,

these averages should not be interpreted as representative of national averages.

Honduras continued from page 2

### Vaccination Timeliness

Overall, Pentavalent vaccine doses were given either on time or with very little delay and there were very few late doses given. Almost all doses given were valid.

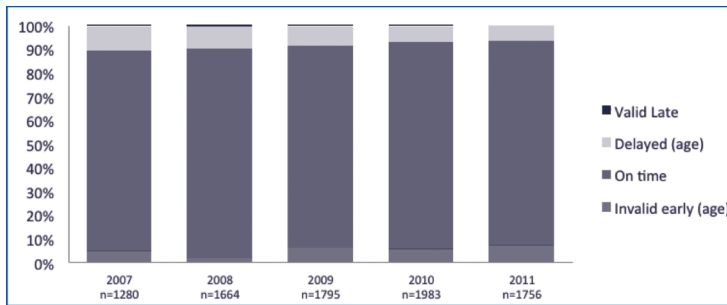
In 2011, 86% of Penta1 doses were given on time (between 60 and 90 days of age), with 7% of doses given before 60 days of age.

For Penta2 and Penta3 doses, 86% were delayed, either based on age of the child or the interval between doses. Very few doses were given late (Figures 1A-1B). In 2011, 86% of MMR doses were given on time and 8% of doses were delayed.

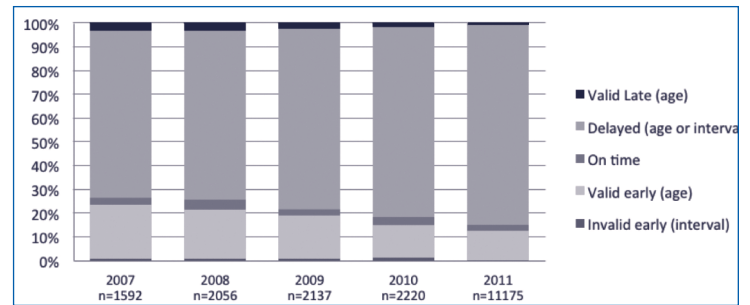
All children in the survey were included in the timeliness calculations, therefore it should

be expected that children in later (younger) age groups are less likely to have received vaccines than those in earlier (older) age groups. Further, children in earlier (older) age groups have had more time to receive late vaccinations than children in earlier (younger) age groups, potentially leading to increases in averages among earlier cohorts.

**Figure 1A: Penta1 doses by timeliness category, by year of birth, Honduras, birth cohorts 2007-2011**



**Figure 1B: Penta3 doses by timeliness category, by year of birth, Honduras, birth cohorts 2007-2011\***



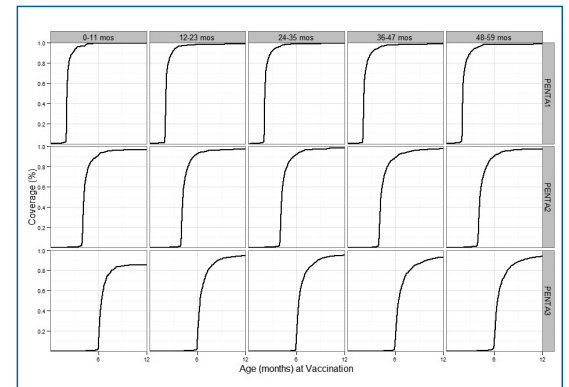
\*Notes: Section of the graph bars are arranged from earlier doses (bottom) to later doses (top). Although there were a large proportion of delayed Penta3 doses administered, this reflects the rigidity of the timeliness definitions used: untimely early doses were not taken into account when determining timeliness of later doses. Therefore, a late Penta1 dose would almost certainly make Penta2 and 3 doses 'late', even if they were administered according to the recommended intervals between doses.

In 2011, 87% of Rota1 doses were given on time, but 6.5% were given "early" and 3.1% were given "late". Most Rota2 doses were delayed (92%), but almost all doses given (>99%) were valid.

Figure 2 illustrates the Penta1-3 vaccination curves shown by age cohort, with % of cohort vaccinated on the y axis. These curves depict the 'rate' of vaccination in each cohort, with steeper curves indicating that the cohort was vaccinated more quickly. Overall, most children in each cohort are being vaccinated during or close to the recommended month (see x axis), with little variation across the age cohorts included in the 2011-12 DHS.

Notes: The y-value of the curve at the right-hand side of each plot corresponds to the % of children vaccinated at 12 months of age in each cohort. As expected, the curve is higher for Penta 1 (a higher percentage of children have received Penta1 at 12 months) than for Penta2, and Penta3 is lowest.

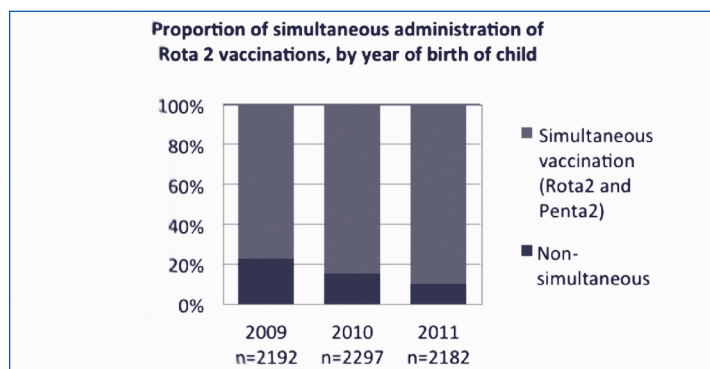
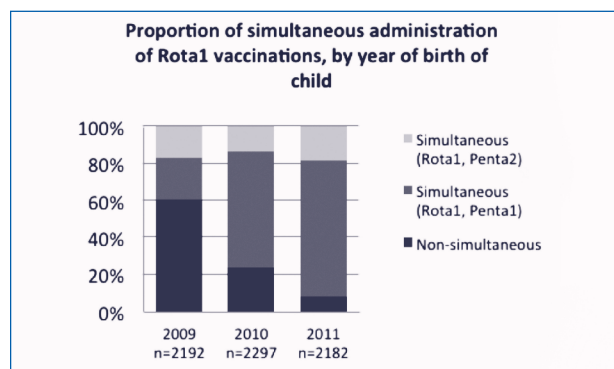
**Figure 2: Timeliness of Penta1-3 doses illustrated using vaccination curves, by age at time of survey, Honduras 2011**



### Vaccine co-administration

In 2011, the Rota1 was co-administered with Penta1 in 73% of doses given (Figure 3). Approximately 19% of Rota1 doses are co-administered with Penta2 vaccine; 8% of Rota1 doses were given without either Penta1 or Penta2. In the same year, Rota2 was simultaneously administered with Penta2 in 90% of doses. In 2011, rotavirus vaccine was administered alone in less than 10% of all doses.

**Figure 3: Simultaneous administration of Rotavirus vaccine with Pentavalent 1 and 2 vaccinations in Honduras, by year of birth, Honduras 2009-2011**



\*Notes: Rotavirus vaccine was officially introduced in December 2009. Therefore, Figure 2 should not be considered an analysis of the trend of co-administered vaccine from 2009-2011, as only one complete cohort (born in 2010) has had the opportunity to receive rotavirus vaccine after this date.

In 2011, PCV was consistently (in over 80% of doses) co-administered with the pentavalent and poliovirus vaccines.

See Honduras on page 4



Honduras continued from page 3

## Discussion

This secondary analysis of immunization data collected by the DHS in Honduras highlights three important points:

1. An immunization program can obtain useful information, beyond vaccination coverage, from surveys that are routinely conducted.
2. This analysis, conducted following the steps outlined in a new PAHO guide being developed, serves as one of the first examples of the usefulness of this guide. This guide will provide standard definitions for vaccination timeliness and a step-by-step methodology to conduct secondary analysis of vaccination timeliness and vaccine co-administration.
3. The results of the analysis suggest that in Honduras, not only is vaccination coverage high, but also that almost all doses given are valid and that vaccination is generally timely, even if most children are completing the basic series of three doses of pentavalent vaccine after 7 months of age. It also suggests that vaccines recommended to be given simultaneously are actually being given on the same date, which is encouraging as it reflects that co-administering two injectable vaccines (Penta and PCV) plus two oral vaccines (OPV and rotavirus) is feasible and can be well accepted.

As all these results only apply to children with vaccination cards, it is reassuring that card reten-

tion was relatively high in Honduras. However, it also suggests that card retention decreases as children age. Card availability is the main limitation of this type of analysis. In the case of the results presented, estimates of coverage and timeliness from earlier years contain fewer children, as fewer children in these age groups had producible health cards from which vaccination information could be recorded. It is therefore relevant to have health workers encourage caregivers to keep and maintain health cards for their children until they reach at least until 5 years of age.

## Editorial Note

Several countries conduct nationwide health surveys, some of the most frequently used are the Demography and Health Surveys (DHS) and UNICEF's Multiple Indicator Cluster Surveys (MICS). As these surveys usually collect immunization data, in 2009, PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases, recommended that immunization programs be aware of when these types of surveys are conducted, in order to ensure that questionnaires are adequate, that interviewers are properly trained to assess vaccination status, and that the results are internally consistent between biologicals. Since then, most immunization programs have been involved in revising immunization-related questions on such surveys and training interviewers on how to properly read vaccination cards.

Understanding if the recommended immunization schedules are actually being followed is important for an immunization program. This information may provide insights on problems in the field in implementing recommendations, limited knowledge of health workers about country guidelines, or even some reluctance to co-administer vaccines. The latter is particularly relevant, as more injectable vaccines are being recommended for each immunization visit.

The usefulness of the type of secondary data analysis presented here is very dependent on card retention, as the generalizability of results is limited to those with cards. PAHO has advocated for collecting immunization data at health facilities when the vaccination card is not available in the home at the time of survey. However, given the very nature of the DHS and the MICS (household surveys) and the many variables they collect, this has been deemed not feasible at this time. Countries should therefore make every effort to ensure that cards are given and that parents are encouraged to keep them.

Finally, in 2015, PAHO will publish its guide entitled "Module 6: Survey and Electronic Immunization Registry Data Analysis", as part of a Toolkit for the monitoring of public health interventions in children <15 years<sup>1</sup>, and provide support to countries that may want to use *Module 6*. ■

**Data and analyses contributed by:** Aaron S. Wallace, CDC; Kristin Bratton, CDC.

<sup>1</sup> "Integrated Monitoring Toolbox is Validated in Nicaragua". Immunization Newsletter. February 2014; Vol. XXXVI No. 1 (p. 1). Available at [www.paho.org/immunization/newsletter](http://www.paho.org/immunization/newsletter)

## Cholera Vaccination in 2 Areas in Haiti, 2013

A cholera epidemic has been raging in Haiti since October 2010. To put an end to this epidemic, a plan to eliminate cholera from the island of Hispaniola from 2013-2020 was developed and adopted in a partnership with the Dominican Republic.

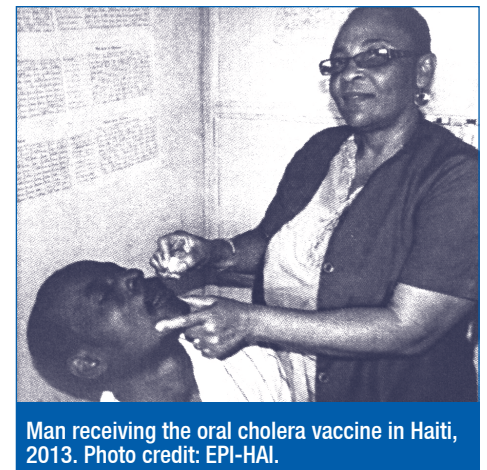
Mass vaccination campaigns were identified as a complementary measure to other interventions in high-risk areas (highly populated urban settings as well as scattered, hard-to-reach rural communities). In the context of the implementation plan, the Expanded Program on Immunization (EPI) conducted a vaccination campaign against cholera in Petite Anse and Cerca Carvajal, targeting 20,917 people in Cerca Carvajal and 86,989 in Petite Anse, totaling 107,906 people from the general population with the exception of children under 1 year old and pregnant women. The campaign results were as follows: 21,944 out of 20,917 (104%) and 83,976 out of 86,989 (92%) received both cholera vaccine doses in Cerca Carvajal and Petite Anse, respectively.

In addition, the United States Centers for Disease Control and Prevention (CDC), in collaboration with the Ministry of Health, conducted surveys

before, during and after the vaccination campaign aiming to identify the lessons learned and improve future cholera vaccination campaigns in Haiti:

1. A KAPB (Knowledge, Attitudes, Practices, and Beliefs) study before and after the vaccination campaign to assess its impact on the communities' knowledge, attitudes and practices in relation to cholera, water purification, hygiene, sanitation and vaccination practices.
2. A vaccine coverage study to assess coverage in the selected target population; identify acceptability and obstacles to vaccination; as well as side effects reported after the cholera vaccine was administered.
3. A study on cholera vaccine field effectiveness, in order to assess vaccine success in preventing severe cholera cases in vaccinated areas.

The coverage study revealed a 2-dose vaccine coverage rate of 63% in Petite Anse and 77% in Cerca Carvajal. In both areas, women and children under 15 presented higher coverage than men and adults. The main reasons for not having been vaccinated were lack of time and absence during the campaign. No major side effect was



Man receiving the oral cholera vaccine in Haiti, 2013. Photo credit: EPI-HAI.

reported. Only 8% reported minor side effects like nausea, dizziness and abdominal pain.

Simultaneously to vaccination activities, complementary interventions were conducted by the potable water and sanitation national agency (DINEPA) to improve access to clean water and sanitize the environment; and by the communication team, so that the population strengthens the recommended precautionary measures. ■

## HPV Vaccine in Chile and Ecuador

### Chile Introduces the HPV Vaccine in the National Immunization Program



Chile's President, Dr. Michelle Bachelet (center), and Minister of Health, Dr. Helia Molina (second from left), at the launch of national HPV vaccination, September 2014. Photo credit: Ministry of Health, Chile.

On 2 September 2014, Chile's President Dr. Michelle Bachelet launched the national vaccination campaign against human papillomavirus (HPV). The Ministry of Health had plans to vaccinate 125,000 girls aged between 9 and 10 years in 2014. The quadrivalent vaccine was planning on being administered in a two-dose immunization schedule with a 12-month interval between doses.

Health workers planned to administer the HPV vaccine at public and private schools. The vaccine introduction was jointly planned with the education sector; a manual specifically directed at teachers was prepared and distributed. Additional information and videos are available online.

Every year, 587 women in Chile die of cervical cancer (equivalent to a 5.7 age-adjusted mortality rate per 100,000 women). The introduction of the HPV vaccine is the outcome of the joint work among the National Program for the Control of Cervical Cancer, the National Immunization Program, education and health experts, economists, political leaders and civil society representatives.

In Chile, the HPV vaccine has been available in the private health sector since 2006. The inclusion in the national immunization schedule thus achieves universal access to this vaccine throughout the target age cohorts, included for vulnerable population groups. The annual public investment for HPV immunization will amount to US\$ 2.5 million.

In the Region of the Americas, 22 countries (in addition to Chile) including Argentina, Antigua, Barbados, Brazil, Bermuda, Canada, the Cayman Islands, Colombia, Ecuador, Guyana, Mexico, Panama, Paraguay, Peru, Puerto Rico, Saba, Sint Maarten, Suriname, Trinidad and Tobago, the United States of America, and Uruguay now offer the HPV vaccine in their publicly funded immunization programs. Each year, 6.5 million adolescent girls (85% of a typical birth cohort of the Americas) have guaranteed access to the HPV vaccine in the Western Hemisphere.

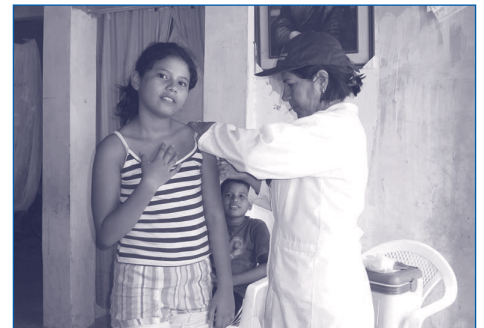
### Ecuador Strengthens Efforts to Prevent HPV

In February 2014, The Ministry of Public Health of Ecuador incorporated the vaccine against the human papilloma virus (HPV 2) into the country's official vaccination schedule as part of the National Strategy for the Prevention of Cervical Cancer.

Dr. Francisco Vallejo, Deputy Secretary of Health Surveillance, said the Ministry allocated a budget of approximately U.S. \$20 million to ensure the prevention of this disease among all girls from 9 to 11 years old, regardless of whether they are in school, since he expressed accordingly that "in 2012, 664 women with cervical cancer died in Ecuador. There are projections that we may have new cases of cervical cancer in about two

thousand women. This is why we are working on prevention."

In the first year, the campaign aims to vaccinate 1,350,000 girls that fall into three cohorts, 9, 10 and 11 years old, across the country with two doses of the vaccine. 1.4 million doses of the bivalent HPV vaccine were acquired through the PAHO Revolving Fund for this purpose. Ecuador's immunization program considered two vaccination strategies to cover all of the girls in this age group: vaccination at educational facilities for girls in school and vaccination at health centers for girls who are not in school. Beginning in 2015, the 9-year-old cohort will continue to be vaccinated.



Adolescent girl receives the HPV vaccine in Guayaquil, Ecuador. Photo credit: Immunization Program, Ministry of Health, Ecuador.

Promotion was initiated through a televised advertising spot and a press conference with the media. The Ministry had the technical cooperation of the Pan American Health Organization (PAHO) for the plan of introducing this vaccine. Manuel Peña, the PAHO representative in Ecuador, said that "attention is focused on that age to have a greater effect on children before their first sexual contact."

## Practical Guide: Inactivated Poliovirus Vaccine (IPV) Introduction

One of the four objectives of the Polio Eradication and Endgame Strategic Plan 2013-2018 (PEES) is the withdrawal of the oral polio vaccine (OPV), beginning with the withdrawal of the type 2 component of the trivalent oral polio vaccine (tOPV). The PEES includes a timeline for the global withdrawal of tOPV: 1) by the end of 2014, all countries should have defined an IPV introduction plan; 2) by the end of 2015, all countries should have introduced at least 1 dose of IPV into the routine immunization schedule; and 3) in mid-2016, if all pre-requisites have been fulfilled, WHO will coordinate a synchronized global switch from tOPV to bOPV.

To support countries of the Americas to meet this objective, PAHO's Immunization Unit has developed a practical guide for IPV Introduction. This practical guide presents the information and describes strategies that health teams in the countries of the Americas should be aware of in order to draw up their plans for the introduction of the IPV into their routine vaccination programs. The guide also includes information the recent prequalification of 5-dose IPV vials and the approval of using multi-dose IPV vials for 28 days after opening, if the criteria outlined by WHO are met. Details on the open vial policy may be found on page 16 of the guide.

Figure 1: Timeline for inactivated poliovirus vaccine (IPV) introduction. This figure includes a timeline from April 2013 to 2016, detailing key milestones such as WHO meeting on OPV withdrawal, WHO meeting on IPV introduction, WHO meeting on OPV withdrawal, and WHO meeting on IPV introduction. It also includes text boxes with details on the WHO meeting on OPV withdrawal and WHO meeting on IPV introduction.

The guide has been printed and distributed to countries. It is also available at the PAHO Immunization website: [www.paho.org/immunization/polio](http://www.paho.org/immunization/polio).

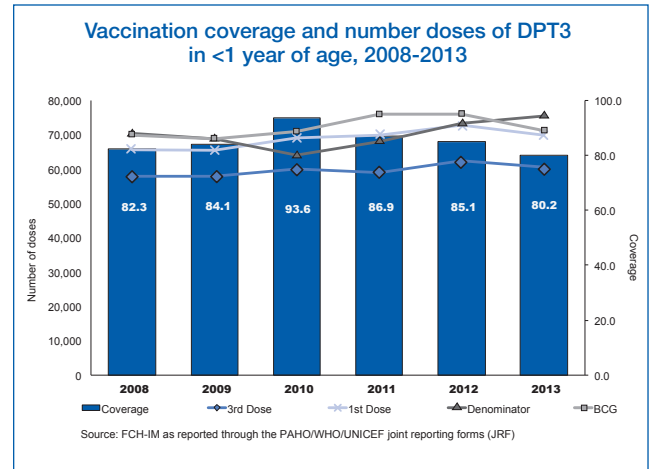
## Vaccination Coverage Analysis Workshop for the Region of the Americas

National health authorities (including managers of the Expanded Program on Immunization [EPI]) and PAHO focal points from 24 countries met in Cancun, Mexico on 13 November 2014 to discuss innovative strategies to ensure that all people have access to vaccines regardless of where they were born, who they are or where they live.

This workshop consisted of a presentation on the Global Vaccine Action Plan (GVAP) and the status of the Americas with regards to GVAP goals and indicators. Despite a long history of immunization achievements, there has been recent stagnation and even slight declines in the regional coverage of the routine program in the Region. Few countries in the Region have met the GVAP indicators and may not meet the 2015 goals. Also, there was a presentation illustrating a country's coverage history: Venezuela's efforts to improve coverage at the local level. Work has been done to strengthen managerial capacities and to implement strate-

gies to increase coverage with support from Canadian cooperation (2010-2013). Venezuela has subsequently maintained the gains achieved during this period.

Finally, countries participated in a practical review exercise, to think critically about the causes behind vaccination coverage trends. Countries were provided with seven graphs which superimposed anonymous real national data on DPT3 coverage with reported denominators and doses of BCG, DPT1 and DPT3 administered from 2008-2014 (see example below). In small groups, countries were asked to put on their "clinical" glasses and diagnose the issue(s) present in each graph (e.g., inaccurate denominators, high drop-out rates, problems with access to immunization). Countries were



then asked to suggest strategies as to how national authorities could tackle each of these challenges. Each graph was then discussed in a fruitful plenary session. At the end of the workshop, each country was given a graph with their own information. Participants were encouraged to replicate this exercise at the subnational level. ■

## Regional Polio Meeting in Mexico

Participants from 24 countries of the Region, including representatives from national immunization programs and laboratories for the diagnosis of polio, acute flaccid paralysis (AFP) surveillance officers, and PAHO focal points for immunization attended the Pan-American Health Organization (PAHO)/World Health Organization (WHO)'s Regional Polio Meeting in Cancun, Mexico on 11-13 November 2014. Partners

from WHO, the United States Centers for Disease Control and Prevention (CDC), GAVI Alliance, Task Force, and UNICEF also attended the meeting, along with the President of the PAHO Regional Certification Committee (RCC).

The purpose of the meeting was to discuss the implementation of the Polio Eradication and Endgame Strategic Plan 2013-2018 (PEES)

in the Americas, with an emphasis on inactivated poliovirus vaccine (IPV) introduction in routine immunization programs.

The meeting covered an array of topics related to the PEES and IPV

introduction, including the rationale for IPV introduction, humoral and intestinal immunity studies on polio vaccination, the Regional Laboratory Network for the diagnosis of polio, IPV supply through the Revolving Fund, country experiences with IPV introduction, registration status of IPV in the Region, AFP surveillance, environmental surveillance, poliovirus containment, IPV communication tools, the Regional Certification Committee, the polio database and weekly bulletin, vaccination coverage, the legacy of polio eradication in the Americas, and the global switch from trivalent oral polio vaccine (tOPV) to bivalent oral polio vaccine (bOPV).

Currently, 69% of the birth cohort (BC) in the Region of the Americas lives in countries that are already using IPV in routine immunization programs. The remaining 32 countries (31% of BC) have made the official decision to introduce IPV by the end of 2015. ■



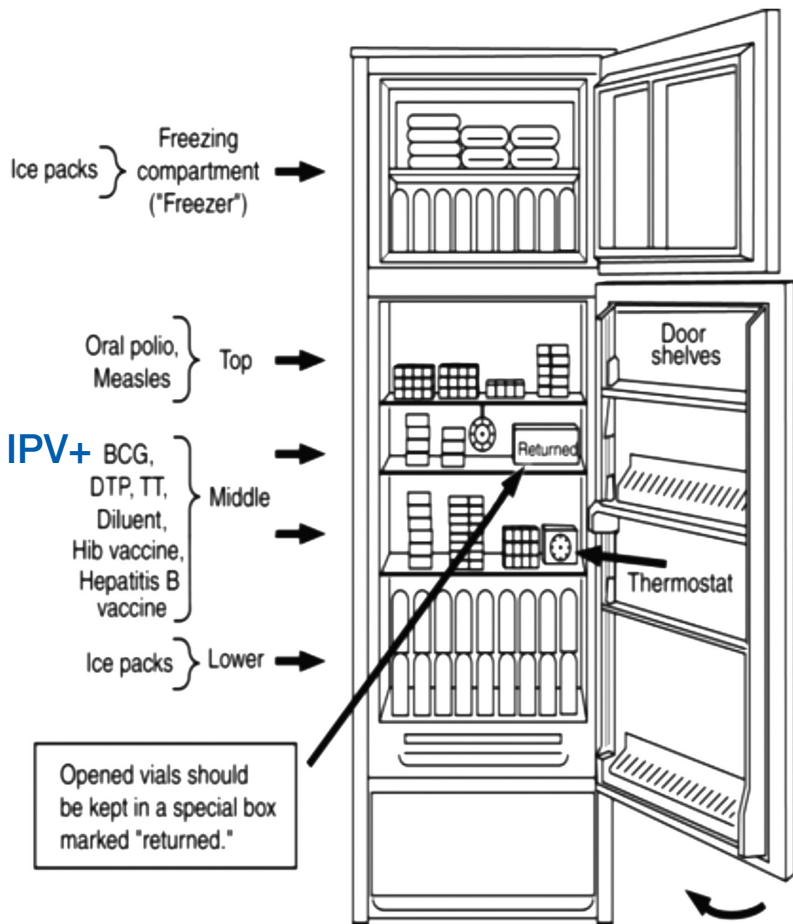
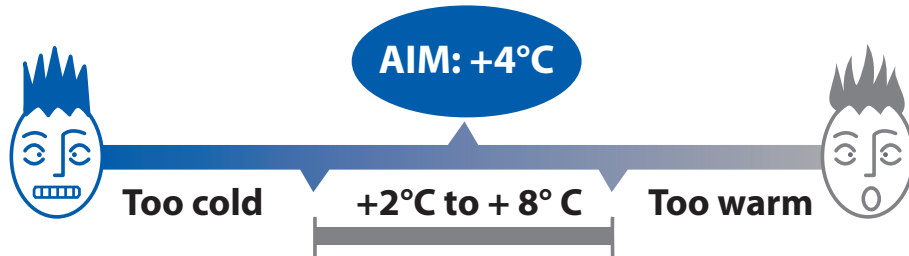
PAHO/WHO's Regional Polio Meeting, Cancun, Mexico, 11-13 November 2014. Photo credit: Elizabeth Thrush, PAHO-WDC.



# IPV Storing Principles

The “shake test” is not effective in determining whether IPV has been frozen (Because it does not contain an aluminum adjuvant).

Therefore it is very important that if there is any suspicion that IPV has been frozen, the vial must be discarded.

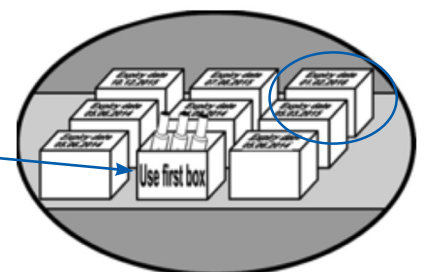


## Best practices for storing IPV

- Store IPV in a refrigerator, between +2°C and +8°C
- Do not open the door frequently (no more than 3x/day)
- Monitor and record the fridge temperature twice daily
- Do not put IPV in the freezer
- Maintain the cartons in a neat row
- Keep around 2 cm of space between rows for circulation of air
- In front-opening refrigerators store IPV and other freeze-sensitive vaccines on the center shelves with other freeze-sensitive vaccines.
- In top-opening refrigerators, store IPV and other freeze-sensitive vaccines on the upper shelves.
- Use First Expired First Out (FEFO) Principle

## First Expired First Out (FEFO) Principle

- Vaccines with earlier expiration dates should be kept in front and used first
- Vaccines with later expiration dates should be stored in the back



The *Immunization Newsletter* is published every two months, 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](http://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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## PAHO's Dr. Cuauhtémoc Ruiz Matus Awarded for Achievements in Health

The H. Commission of the Mexican Society of Public Health has awarded the Pan-American Health Organization's (PAHO) own Dr. Cuauhtémoc Ruiz Matus with the 2014 Medal for Health Excellence as an acknowledgement of his outstanding career in public health and for the indisputable contributions he has made both to the Mexican Society of Public Health and to the field of public health.

Dr. Ruiz Matus received the honor in his native country of Mexico, where he worked with the Secretary of Health for 25 years before coming to PAHO and heading the Comprehensive Family Immunization Unit of the Family, Gender and Life Course. While he worked at the Secretary of Health, he held various responsibilities, including Assistant Director of Epidemiology and Preventive Medicine in the state of Oaxaca, Chief of the Diarrheal Disease Control Department in the Department of Epidemiology, Director of Applied Epidemiology and the Applied Epidemiology Residence Program, and Director of Epidemiological Surveillance.



Dr. Cuauhtémoc Ruiz Matus accepts the 2014 Medal for Health Excellence in Mexico.  
Photo credit: Mexican Society of Public Health.

During his last ten years working in the Secretary of Health, Dr. Ruiz Matus worked as Chief of Staff for the Assistant Secretary of Prevention and Health Promotion.

The award was presented by the Mexican Society of Public Health, where Dr. Ruiz

Matus served as Secretary General, Vice President and President between 2003 and 2004. The Medal for Health Excellence was imparted to Dr. Ruiz Matus on 19 November 2014 during the inauguration ceremony for the 67<sup>th</sup> Annual Public Health Meeting in Mérida Yucatán, Mexico. ■