

WHO/PAHO regional meeting on seasonal influenza vaccination in the Americas

(3rd WHO meeting on seasonal influenza vaccine composition
& 3rd REVELAC-i meeting)

Santiago de Chile, 15-17 March 2016

Meeting report,
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ACRONYMS

CDC	Centers for Diseases Control and Prevention
CLAP	Latin American Center for Perinatology Women and Reproductive Health
HI	Haemagglutinin Inhibition
SAGE	Strategic Advisory Group on immunization
GAVI	Global Vaccine Alliance
GISRS	Global Influenza Surveillance and Response System
ILI	Influenza-like Illness
I-MOVE	Influenza Monitoring Vaccine Effectiveness in Europe
LAC	Latin America and Caribbean
PAHO	Pan American Health Organization
PIP	Pandemic Influenza Preparedness
REVELAC-i	Red para la Evaluación de la Efectividad de la Vacuna en Latinoamérica y el Caribe-influenza
SARI	Severe Acute Respiratory Infection
TAG	Technical Advisory Group on vaccine-preventable diseases
TND	Test-negative design
US	United States
VE	Vaccine Effectiveness
WHO	World Health Organization

EXECUTIVE SUMMARY

From 15-17 March 2016, the World Health Organization (WHO) and the Pan American Health Organization (WHO/Region of the Americas) held a regional meeting on influenza vaccination in Santiago, Chile. The meeting combined the Third WHO meeting on seasonal influenza vaccine composition and the Third meeting of the REVELAC-i network (Network for evaluating influenza vaccine effectiveness in Latin America and the Caribbean). It aimed to support countries of Latin America and the Caribbean (LAC) in using information from influenza surveillance and influenza vaccination programs to make evidence-based decisions and further develop the recommendations for seasonal influenza vaccination. Participants from 21 countries, two WHO Collaborating Centers for Reference and Research on Influenza (Center for Disease Prevention and Control, USA (US-CDC), and Victorian Infectious Diseases Reference Laboratory, Australia) and eight collaborating institutions/partners, and multidisciplinary teams from the ministries of health across the Americas (professionals engaged in epidemiological and virological influenza surveillance and immunization programs managers) attended the meeting.

Influenza vaccination is particularly challenging compared to other vaccines included in EPI schedules, due to the need for annual, optimally timed vaccination, the wide spectrum of target groups that comprises the entire life course (over six months of age), a relatively lower vaccine effectiveness compared to childhood EPI vaccines, and the limitations of the availability of vaccines. In recent years, the LAC countries have continued their efforts to sustain or increase seasonal influenza vaccine uptake among high risk groups, especially among pregnant women. These countries have also continued strengthening influenza surveillance, immunization platforms and information systems, indirectly improving preparedness for future pandemics. Challenges, however, persist in the estimation of vaccination coverage, especially for pregnant women and persons with chronic conditions. Since 2013, LAC countries through their influenza vaccine effectiveness evaluation network (REVELAC-i for its acronym in Spanish Red para la Evaluación de Vacunas En Latino América y el Caribe— influenza) have successfully estimated influenza vaccine effectiveness against severe influenza illness among children aged 6 months-5 years and adults ≥ 60 years targeted for vaccination. Regarding influenza seasonality in countries of the American Tropics, the analysis of recent epidemiological evidence suggested no evidence of year round circulation (except in Colombia and Venezuela) but rather the occurrence of one to two annual epidemic peaks of influenza illnesses and most of them (except Mexico, Jamaica and Guatemala) corresponding to southern hemisphere circulation. WHO/PAHO emphasized the importance of continuing intensive/mass vaccination before the primary influenza epidemic peak, reaching high vaccination coverages among high risk groups. Any adjustments to national influenza vaccination guidelines should be guided by the local epidemiology of influenza, as demonstrated by some countries (five from Central America and one from the Caribbean, since 2007) that changed their vaccination timing to April-May using the Southern Hemisphere formulation. Considerations for a prolonged supply of influenza vaccines in tropical countries were also discussed during the meeting following an update from global and regional influenza vaccine manufacturers.

The meeting participants agreed on a short term research agenda addressing influenza vaccine effectiveness and impact among all target groups, knowledge, attitudes and practices related to vaccination among pregnant women and healthcare workers, documenting the experience of influenza vaccination as recommended by the SAGE and exploring the cost-effectiveness of quadrivalent influenza vaccines for which there is no official WHO nor PAHO TAG recommendation to date.

Finally, it is important that LAC countries continue monitoring influenza vaccines performance as well as generating evidence for vaccination programs in addition to addressing the existing operational gaps. Other WHO regions may benefit from the experience acquired in the PAHO/WHO region in influenza prevention and control.

Introduction

From 15-17 March 2016, the World Health Organization (WHO) and the Pan American Health Organization (WHO/Region of the Americas) held a regional meeting on influenza vaccination in Santiago, Chile. The meeting combined the Third WHO meeting on seasonal influenza vaccine composition and the Third meeting of the REVELAC-i network (Network for evaluating influenza vaccine effectiveness in Latin America and the Caribbean). It aimed to support countries of Latin America and the Caribbean (LAC) in applying information on influenza surveillance and vaccination in order to make evidence-based decisions and further develop the recommendations for seasonal influenza vaccination.

The three-day program reviewed the epidemiological and virological evidence available to support influenza vaccination policies and addressed the current challenges that LAC countries are faced with and the gaps in knowledge. The topics covered :

- influenza seasonality in the American Tropics with its implication in terms of the timing of influenza vaccination activities, and the vaccine formulation to use,
- an update from global and regional vaccine manufacturers on vaccine production and to what extent it can address the current needs of vaccination programs,
- monitoring influenza vaccine effectiveness and its impact on disease burden among high risk groups,
- maternal influenza vaccination and approaches to generating evidence of disease burden and vaccines protective effects for pregnant women and their newborn,
- and operational challenges of vaccination programs and vaccination data quality.

Participants from 21 countries, two [WHO collaborating centers for reference and research on influenza](#) (Center for disease prevention and control, USA (US-CDC), and Victorian Infectious Diseases Reference Laboratory, Australia) and eight collaborating institutions/partners attended (US-CDC, Emory University, the European Influenza Monitoring of Vaccine Effectiveness network, Marshfield Clinics, Center for Disease Control of British Columbia, US-CDC-Central America, Universidad del Valle de Guatemala, and Bill & Melinda Gates Foundation), including multidisciplinary teams from the ministries of health across the Americas (professionals engaged in epidemiological and virological influenza surveillance and immunization programs managers).

Progress in influenza vaccination in the Americas

Influenza vaccination is particularly challenging compared to other vaccines included in EPI schedules, due to the need for annual, optimally timed vaccination, the wide spectrum of target groups that comprises the entire life course (>six months of age), a relatively lower vaccine effectiveness compared to childhood EPI vaccines, and the limitations of the availability of vaccines. The PAHO/WHO region has continued to progress with influenza vaccination in recent years. As of 2015, 40 (89%) out of 45 countries/territories in the Americas have policies established for seasonal influenza vaccination. Currently, 29 (64%) countries/territories target pregnant women for vaccination, the highest priority group as per WHO's Strategic Advisory Group of Experts (SAGE) and PAHO/WHO's Technical Advisory Group on Vaccine-preventable Diseases (TAG) recommendation, compared to only 7 (16%) in 2008. Among 23 countries reporting coverage data, on average, 75% of

adults ≥60 years, 45% of children aged 6–23 months, 32% of children aged 2–5 years, 59% of pregnant women, 78% of healthcare workers, and 90% of individuals with chronic conditions were vaccinated during the 2013-14 Northern Hemisphere or 2014 Southern Hemisphere influenza vaccination activities. Thus, the PAHO region is among the regions globally with the highest influenza vaccines uptake among high risk groups, with dynamic influenza vaccination programs that tend to adapt to national resources and new evidence as it becomes available. Challenges however persist in the estimation of vaccination coverage, especially for pregnant women and persons with chronic conditions. The LAC countries are currently working on determining more precise denominators for these estimates.

Influenza seasonality in the American Tropic and vaccination

Countries of the Americas have been contributing to global influenza virological surveillance for decades and have made significant progress in the collection of timely and quality epidemiological data, as well as in laboratory confirmation and characterization of circulating influenza viruses in recent years. Contrarily to countries from temperate zones such as Argentina, Chile and Uruguay, where well-defined influenza seasons have allowed for an optimal planning of vaccination, tropical countries have historically had challenges characterizing the seasonality of influenza viruses' circulation. In fact, the great majority of LAC countries are located between the Tropic of Cancer and the Tropic of Capricorn. As epidemiological and virological data became more available, six countries have changed their vaccine formulations from the Northern to the Southern Hemisphere formulation since 2007 (El Salvador, Guatemala, Colombia, Costa Rica, Cuba, and Honduras). These countries also changed the timing of vaccination to April-May. In these countries, the decision was based on a review of epidemiological and virological surveillance data by a multidisciplinary/inter-institutional committee (EPI, influenza surveillance, national influenza centers) and accompanied by the National Immunization Technical Advisory Groups (NITAGs). Several years of data are necessary to determine the best formulation and timing of vaccination for countries of the American tropics.

The review of recent surveillance data suggested one or two distinct periods of increased influenza activity. Most countries (except Mexico, Jamaica and Guatemala) followed the southern hemisphere seasonality pattern. In addition to peak activity, Colombia and Venezuela showed evidence of year-round residual influenza activity. Based on the review of global evidence for influenza seasonality in tropical and sub-tropical areas (Hirve et al. 2016), WHO suggested two influenza vaccination zones for countries in LAC:

- Northern hemisphere formulation for Guatemala (epidemic peak in October), Jamaica, and Mexico.
- Southern hemisphere formulation for the rest of Central & South America (primary epidemic peak in April): Anguilla, Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Grenada, Guyana, Haiti, Honduras, Montserrat, Netherland Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, and Venezuela.

These recommendations are consistent with current PAHO/WHO and PAHO TAG's recommendations to vaccinate intensively before the primary influenza epidemic peak, reaching high

vaccination coverage among high risk groups. PAHO/WHO encouraged tropical countries, especially large countries, to further conduct influenza seasonality analyses by sub-regions that may present distinct based on geographic and climate parameters (PAHO TAG meeting 2015). Honduras presented how it used evidence to change influenza vaccine policy and guidelines which illustrated the importance of planning for the change, the timelines to consider and the stakeholders to involve. Thus PAHO/WHO reiterated the importance of creating and involving multidisciplinary teams in countries still in the process of examining influenza seasonality to orientate policy, such as Ecuador. Ecuador will gather more evidence in the next two years to make recommendations on which vaccine formulation to use and when to administer it, with technical assistance from PAHO/WHO. PAHO/WHO reminded country participants of the latest TAG 2015 recommendation to evaluate the impact of changes in influenza vaccination timing and choice of vaccine on disease burden.

In order to ensure vaccine availability for pregnant women, options such as extending vaccines shelf-life or adopting multiple differed vaccine delivery should be explored. These options would have regulatory implications that would need to be addressed. Discussions with manufacturers and qualification agencies should continue to provide clear information on the feasibility of these alternatives.

Maternal immunization

Following the 2012 SAGE recommendation of vaccinating pregnant women, 34 countries have introduced pregnant women vaccination globally; out of which 29 are in the Americas. In order to continue promoting influenza vaccination among pregnant women and provide guidance to Expanded programs on immunization (EPI) and health services, PAHO has elaborated a field guide for maternal immunization that describes the benefits of vaccination in the mother and newborn. It includes a chapter that tackles the specificities of influenza vaccination such as methods to estimate denominators for influenza vaccination coverage among pregnant women. (http://www.who.int/immunization/programmes_systems/policies_strategies/vaccine_intro_resources/nvi_guidelines/en/.) This guide will complement the recent WHO global guidelines on maternal immunization. Considering the high uptake of influenza vaccines in the PAHO/WHO region, WHO emphasized that it provides an ideal setting to generate evidence of the benefits of vaccination in pregnant women and their newborns but also of vaccines safety. PAHO's Centre for Perinatology Women and Reproductive Health (CLAP) recently formed a network of hospitals that provide maternal care across the LAC region. This network could represent a potential platform to address the needs in evidence for maternal vaccination.

Examples of studies conducted among pregnant women were presented at the meeting as well as a global proposal to examine influenza vaccine effectiveness among pregnant women. Participants agreed on the importance of increasing operational research for this target group and several countries have shown interest in joining the proposed studies. WHO encouraged LAC countries to continue the current efforts to estimate the burden of disease among pregnant women including that of severe illness associated with influenza infections and to document lessons learned in maternal immunization, as recommended by the SAGE, including the best gestational trimester to vaccinate.

Influenza vaccine effectiveness and impact

Since 2013, the [REVELAC-i](#) (*Red para la Evaluación de Vacunas En Latino América y el Caribe–influenza*) network has carried out a multicenter evaluation of influenza vaccine effectiveness (VE) against severe influenza illness in order to provide useful evidence for health authorities. This evaluation has used severe acute respiratory infections surveillance platforms and a case test-negative control design drawing on experience from countries and regions that regularly report influenza vaccine effectiveness (Canada, the US, Australia, New Zealand and the European IMOVE network). Results from influenza VE monitoring during 2013 and 2014 suggested that trivalent inactivated influenza vaccines provided moderate protection against severe influenza illness among children aged ≤ 5 years and adults ≥ 60 years during 2013 and among adults ≥ 60 years during 2014. Sentinel surveillance networks in LAC countries proved to provide a simple platform to estimate regional influenza VE annually.

During 2016, the REVELAC-i network will work closely with National Influenza Centers and the WHO collaborating center on influenza to strengthen national capacities for integrating virological results in vaccine effectiveness studies.

The REVELAC-i network will work on improving data timeliness in order to provide interim VE estimates and inform the GIVE collaboration, starting with VE estimates from Chile in 2016.

For a better understanding of the effect of the number of prior vaccinations on effectiveness of the current vaccine among the elderly, the Ministry of Health of Chile, with support of the REVELAC-i network will carry out a retrospective study using the electronic national vaccination register in place since 2012. This study is planned for end of 2016.

Some countries have expressed interest in testing the screening method to measure influenza vaccine effectiveness and compare results to those from the test-negative case-control evaluation in place. The Spanish national institute of health proposed to collaborate and share their experience in implementing the screening method. Countries interested were Chile, Colombia, Costa Rica, and Paraguay.

Countries were interested in modelling the impact of influenza vaccines using Chile's example and an adaptation of the methodology presented by the US-CDC (*Costa-Rica, Ecuador, Paraguay*).

To date WHO and PAHO's TAG have not issued any recommendations favoring quadrivalent influenza vaccines (QIV) over trivalent influenza vaccines (TIV) currently used among LAC countries. Experience from the modelling of influenza vaccine effectiveness in Australia and South Africa suggested that the degree to which QIV can reduce health burden compared to TIV is strongly dependent on the number of years in which the influenza B lineage in the TIV matches the circulating B lineages. A longer term evaluation of QIV and TIV impact on disease burden and cost effectiveness is needed.

In the coming months, PAHO will analyze the demand of QIV vaccine among countries who procure vaccines through PAHO's Revolving Fund to estimate the current demand at the regional level. PAHO/WHO will support to countries who wish to model the impact of TIV or explore the cost-effectiveness of introducing QIV through the REVELAC-i network and in collaboration with the US-CDC and the WHO CC, Australia.

Operational challenges

Influenza vaccination programs are faced with specific operational challenges related to the need to conduct annual vaccination campaigns/activities, to ensure vaccination of vaccine-naïve children with two doses and to target various risk groups across the life course.

A main challenge commonly reported among LAC countries is estimating denominators for influenza vaccination coverage especially for pregnant women. PAHO/WHO has promoted the calculation of the denominators for pregnant women as 75% of the annual cohort of pregnant women (or annual live-birth cohort as a proxy) and has recommended standardizing the definitions for healthcare workers considered for vaccination in every country.

The analysis of data collected through the PAHO/WHO-UNICEF Joint Report Form shows that problems persist with the recording of information about the second dose of influenza vaccine among vaccine-naïve children when reporting vaccination coverage.

Many LAC countries have or are progressing towards electronic nominal vaccination registers that allow for a more efficient monitoring of vaccination coverage, facilitate tailoring interventions to under vaccinated groups and can be used as a platform to generate evidence for vaccination programs such as evaluating influenza vaccine effectiveness especially if such registers can be easily linked to other information systems such as sentinel surveillance databases. LAC countries may benefit from the Chilean experience in setting up a high quality national vaccination register (in place since 2012). PAHO/WHO will also work closely with LAC countries to support in defining denominators for persons with underlying conditions eligible for vaccination.

Research agenda

Participants agreed that collaborations between different institutions/technical cooperation agencies and among countries should continue and new collaborations were discussed (between LAC countries, Spain/PAHO for influenza surveillance, Canada/REVELAC-i for virological analyses).

Countries recognized the need to generate influenza vaccine effectiveness and impact evidence for pregnant women, given the high vaccination coverage in the LAC region. Countries that expressed an interest in estimating influenza VE among pregnant women were: Argentina, Brazil, Costa-Rica, Cuba and Mexico.

Finally, Caribbean countries, Brazil, Ecuador, and Paraguay expressed interest in conduct Knowledge Attitudes and Practices (KAP) studies on influenza vaccination among health care workers and/or pregnant women.

The LAC countries' interest in joining the various initiatives for generating evidence for influenza vaccination programs were summarized as follows:

Influenza VE (multicenter case-control): Argentina, Brazil, Chile, Colombia, Costa-Rica, Cuba, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru.

Influenza VE (screening method): Chile, Costa-Rica, Colombia, Paraguay.

Influenza vaccines impact: Chile, Costa-Rica, Cuba, Ecuador, Paraguay.

Impact of TIV vs QIV : Colombia, Costa-Rica, Cuba.

KAP studies: English-speaking Caribbean countries, Honduras, Mexico, and Nicaragua.

Conclusions

In recent years, countries of the Americas have continued their efforts to sustain or increase seasonal influenza vaccine uptake among high risk groups, especially among pregnant women. Countries also continued strengthening influenza surveillance, immunization platforms and information systems, indirectly improving preparedness for future pandemics. The analysis of the seasonality of influenza epidemics and the update of influenza vaccination policies based on surveillance evidence has also made great progress, as demonstrated by countries that have made adjustments to their national influenza vaccination policies. It is important the LAC countries continue monitoring influenza vaccines performance and generating evidence for national, regional and global vaccination programs in addition to addressing the existing operational gaps. Finally, the LAC country experiences shall be shared with other regions.

Useful resources

1. [Ropero et al. Influenza vaccination in the Americas: Progress and challenges after the 2009 A\(H1N1\) influenza pandemic.](#)
2. [Durand et al. Timing of influenza epidemics and vaccines in the American tropics, 2002-2008, 2011-2014.](#)
3. [Hirve et al. Influenza Seasonality in the Tropics and Subtropics - When to Vaccinate? Plos One 2016.](#)
4. [Lambach et al. Considerations of strategies to provide influenza vaccine year round. Vaccine 2015.](#)
5. [Lambach et al. A global perspective of maternal influenza immunization. Vaccine 2015.](#)
6. [PAHO/WHO Technical Advisory Group on Vaccine-preventable diseases – meeting reports.](#)
7. [REVELAC-i webpage.](#)
8. [SARInet webpage.](#)

WHO/PAHO regional meeting on seasonal influenza vaccination in the Americas

*3rd WHO meeting on seasonal influenza vaccine composition and seasonality
& 3rd REVELAC-i meeting*
Santiago de Chile, 15-17 March 2016

The overall goal of this meeting is to support countries in Latin America and the Caribbean (LAC) in leveraging information on influenza surveillance and vaccination in order to make evidence-based decisions and further develop the recommendations for seasonal influenza vaccination through:

1. Reviewing the recently developed recommendations for the tropics and subtropics regarding the timing of seasonal influenza vaccination and the vaccine formulation to use,
2. Sharing experiences from countries in the tropics and subtropics that have recently implemented changes in their vaccination policies or are in the process of evidence review and decision-making,
3. Sharing the lessons learned from measuring influenza vaccine effectiveness, especially using surveillance platforms and vaccination programs data in the Americas and other regions,
4. Sharing experiences from evaluations of the impact of influenza vaccines (Americas and other regions) and exploring the feasibility of modeling the impact of influenza vaccines in Latin America and the Caribbean,
5. Sharing lessons learned from targeting high risk groups for influenza vaccination as recommended by the SAGE and regionally by PAHO's Technical Advisory Group on vaccine-preventable diseases (TAG),
6. Better understanding the needs, priorities, and challenges faced by countries that plan to implement or have implemented seasonal influenza vaccination recommendations.

15 March 2016 (Tuesday)

8:30 AM – 9:00 AM	Registration	
9:00 AM – 9:30 AM	Opening and welcome	Ministry of Health, Chile CUCHI Paloma, PWR Chile ZHANG Wenqing, WHO RUIZ-MATUS, Cuauhtemoc, PAHO/WHO
9:30 AM – 9:45 AM	<ul style="list-style-type: none"> – Overview of the agenda – Designation of chair, session co-chairs, rapporteurs 	ROPERO-ALVAREZ Alba Maria, PAHO/WHO
SESSION 1 – Influenza in the tropics and subtropics		
Moderator: HIRVE Siddhivinayak, WHO HQ		
9:45 AM – 10:00 AM	Global influenza update	ZHANG Wenqing, WHO HQ
10:00 AM – 10:15 AM	Evolution of the influenza virus and vaccine composition	BARR Ian, WHO Collaborating Centre for Reference and Research on Influenza, Melbourne, Australia
10:15 AM – 10:30 AM	Influenza seasonality in the tropics - When to vaccinate?	HIRVE Siddhivinayak, WHO HQ
10:30 AM – 11:00 AM	<i>Discussion</i>	
11:00 AM – 11:30 AM	Coffee	
11:30 AM – 11:45 AM	Influenza situation update in the Americas	CERPA Mauricio, PAHO/WHO
11:45 AM – 12:00 AM	Influenza viruses seasonality in the Tropics: Available evidence from Latin America and the Caribbean	AZZIZ-BAUMGARTNER Eduardo, US-CDC
12:00 AM – 12:15 PM	Update on influenza vaccination in the Americas	ROPERO-ALVAREZ Alba Maria, PAHO/WHO
12:15 PM – 12:30 PM	Influenza seasonality in the American Tropics and influenza vaccination policies: <u>Countries' experience:</u> Brazil	MoH Brazil
12:30 PM – 1:40 PM	Lunch	
1:40 PM – 2:00 PM	Group photo	
2:00 PM – 2:45 PM	<u>Countries' experience – continued</u> <u>Andean Region:</u> Ecuador, Peru <u>Central America:</u> Honduras	Ministry of Health (MoH) Ecuador MoH Peru MoH Honduras
2:45 PM – 3:15 PM	<i>Discussion</i>	
3:15 PM – 3:45 PM	Coffee	

SESSION 2 – Global and regional influenza vaccines demand and supply		
Moderator: ZHANG Wenqing		
3:45 PM – 4:00 PM	Global demand and supply of seasonal influenza vaccine – a manufacturer perspective	ABELIN Atika, International Federation of Pharmaceutical Manufacturers (IFPMA)
4:00 PM – 4:30 PM	Regional and local, production and supply of seasonal influenza vaccine - experiences and challenges in LAC: <ul style="list-style-type: none"> - Argentina - Mexico 	Developing Countries Vaccines Manufacturers Network (DCVMN): <ul style="list-style-type: none"> - Synergium Biotech Consortium Argentina, - Birmex, Laboratories of Biologicals and Reagents of Mexico
4:30 PM – 4:40 PM	Influenza vaccine production project in Nicaragua	REYES Martha, MoH Nicaragua
4:40 PM – 4:50 PM	The PAHO Revolving Fund: a mechanism for vaccine procurement in the Americas	RODRÍGUEZ Daniel, PAHO/WHO
4:50 PM – 5:00 PM	Considerations of strategies to provide influenza vaccines year round	LAMBACH Philipp, WHO HQ
5:00 PM – 5:30 PM	<i>Discussion</i>	
6:00 PM – 7:00 PM	Welcome activity	

16 March 2016 (Wednesday)

SESSION 3 – Measuring influenza Vaccine effectiveness using surveillance platforms		
Moderator: VALENCIANO Marta, Epiconcept		
9:00 AM – 9:15 AM	Use of influenza vaccine effectiveness (VE) estimates to inform vaccination recommendations and other public health measures – experience from the US	BRESEE Joe, US-CDC
9:15 AM – 9:30 AM	The “test-negative design” to estimate influenza VE: principles and methods	THOMPSON Mark, US-CDC
9:30 AM – 9:45 AM	Supporting countries in generating evidence for influenza vaccination in LAC: the REVELAC-i network	ROPERO-ALVAREZ Alba Maria, PAHO/WHO
9:45 AM – 10:00 AM	Overview of sentinel SARI surveillance progress and performance in LAC	CERPA Mauricio, PAHO/WHO
10:00 AM – 10:15 AM	<i>Discussion</i>	
10:15 AM – 10:45 AM	Coffee	
10:45 AM – 11:00 AM	Multicenter case-control VE evaluation in LAC: REVELAC-i latest results	EL OMEIRI Nathalie, PAHO/WHO
11:00 AM – 11:30 AM	Influenza VE evaluation <u>Countries experience:</u> <ul style="list-style-type: none"> - Brazil - Chile 	ALMEIDA Walquiria, MoH Brazil SOTOMAYOR Viviana, MOH Chile

11:30 AM – 11:45 AM	Europe's IMOVE (Influenza Monitoring of VE) multicentre case-control study – Pooling 5 years of data and evolution of the network	VALENCIANO Marta, Epiconcept
11:45 AM – 12:00 AM	Variable VE by Type/Subtype: meta-analysis of studies using the test-negative design	BELONGIA Edward, Center for Clinical Epidemiology & Population Health, Marshfield Clinic Research Foundation, Wisconsin, USA
12:00 AM – 12:30 PM	<i>Discussion</i>	
12:30 PM – 2:00 PM	Lunch	
2:00 PM – 2:15 PM	Existing surveillance platforms for measuring influenza VE in Canada	SABOUI Myriam, Public Health Agency, Canada
2:15 PM – 2:30 PM	Integrated surveillance: linking genomic, antigenic and epidemiologic monitoring of influenza vaccines---virus relatedness and effectiveness	SKOWRONSKI Danuta, Epidemiology Services British Columbia, Centre for Disease Control, Canada
2:30 PM – 2:45 PM	Trivalent and quadrivalent influenza VE in Australia and South Africa: results from a modelling study	BARR Ian, WHO Collaborating Centre for Reference and Research on Influenza, Melbourne, Victoria, Australia
2:45 PM – 3:15 PM	<i>Discussion</i>	
3:15 PM – 3:45 PM	Coffee	
SESSION 4 – Influenza vaccine impact		
Moderator: AZZIZ-BAUMGARTNER Eduardo, US-CDC		
3:45 PM – 4:00 PM	Evaluating the impact of influenza vaccines: principles, methods, and experience from the US	ARRIOLA Sofia, US-CDC
4:00 PM – 4:15 PM	Impact of influenza vaccines during 2013-14 in Chile	LOAYZA, Sergio, MoH Chile
4:15 PM – 4:45 PM	<i>Discussion</i>	

17 March 2016 (Thursday)

SESSION 5 – Operational challenges for influenza vaccination programs in LAC		
Moderator: MUÑOZ Fernando, MoH Chile		
9:00 AM – 9:15 AM	Overview of the “winter campaign” in Chile	NAVARRETTE Patricia, MoH Chile
9:15 AM – 9:30 AM	Operational challenges in vaccinating high risk groups in Chile and ongoing efforts to tackle them	BURGOS Pamela, MoH Chile WHO
9:30 AM – 09:45 AM	Influenza vaccination data quality and information systems in LAC	CONTRERAS Marcela, PAHO/
09:45 AM – 10:00 AM	Using the screening method for measuring VE: the Spanish experience	LARRAURI Amparo, National Institute of Health (Carlos III), Spain

10:00 AM – 10:30 AM	<i>Discussion</i>	
10:30 AM – 11:00 AM	Coffee	
SESSION 6 – Maternal influenza immunization		
Moderator: WAIRAGKAR Niteen, Bill and Melinda Gates Foundation		
11:00 AM – 11:15 AM	Presentation of the WHO field guide for influenza maternal immunization (WHO)	LAMBACH Philipp, WHO HQ
11:15 AM – 11:30 AM	Ongoing efforts and initiatives in maternal immunization in the PAHO/WHO region	ROPERO-ALVAREZ Alba Maria, PAHO/WHO
11:30 AM – 11:45 AM	“Are birth outcomes influenced by influenza vaccination during pregnancy? A cross-sectional study from Nicaragua”	MoH Nicaragua
11:45 AM – 12:00 PM	Influenza VE among pregnant women and their infants in ambulatory settings in Central America	KAYDOS-DANIELS Susan, CDC-CAR
12:00 AM – 12:30 AM	<i>Discussion</i>	
12:30 PM – 2:00 PM	Lunch	
2:00 PM – 2:15 PM	Incidence of SARI hospitalizations among pregnant women in El Salvador, 2011-2014	JARA Jorge, Universidad del Valle, Guatemala
2:15 PM – 2:30 PM	Progress in generating evidence for influenza maternal immunization	OMER Saad, Emory University, Georgia, USA
2:30 PM – 2:45 PM	Evaluating influenza VE among pregnant women: experience from the US and feasibility assessment for LAC countries	THOMPSON Mark, US-CDC
2:45 PM – 3:15 PM	<i>Discussion</i>	
3:15 PM – 3:45 PM	Coffee	
3:45 PM – 4:00 PM	REVELAC-i and SARInet Webpages -overview	MENDEZ Antonio, PAHO Guatemala CERPA Mauricio, PAHO/WHO
SESSION 7 – What’s next?		
Moderator: ROPERO-ALVAREZ Alba Maria, PAHO/WHO		
4:00 PM – 4:30 PM	<ul style="list-style-type: none"> • Identifying data gaps and leveraging information for informed decisions on vaccination: <ul style="list-style-type: none"> - Actions that countries need to take? - Ways that PAHO/WHO can support? • Research agenda for influenza vaccination programs • Research needs and next steps • Inter-institutional collaborations and resource mobilization 	ROPERO-ALVAREZ Alba Maria, PAHO/WHO
4:30 PM – 5:00 PM	Wrap-up and meeting closure	MUÑOZ Fernando, Ministry of Health, Chile ROPERO-ALVAREZ Alba Maria, PAHO/WHO ZHANG Wenqing, WHO/HQ

**Reunión regional de la OMS/OPS sobre la vacunación
contra la influenza estacional en las Américas
Santiago de Chile
15 al 17 de marzo del 2016**

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