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Introduction of PCV13 among Children under 1 Year Discussed at Meeting in Haiti

Meeting between PAHO and Haiti's EPI for health workers, on the introduction of PCV13 in Haiti, October 2018. Credit: PAHO.

Haiti introduced the 13-valent pneumococcal conjugate vaccine (PCV13) for children under 1 year on 29 October 2018, with support from the Global Alliance for Vaccines and Immunizations (GAVI). As of December 2018, with the inclusion of Haiti, 36 of the Region's countries have one of the two pneumococcal vaccines, PCV10 or PCV13, in their Expanded Program on Immunization (EPI).

As part of the technical cooperation agreements between PAHO and Haiti's Ministry of Health for introduction of the PCV13 vaccine, a scientific meeting was held in Port-au-Prince, Haiti, on 23 October 2018. Professionals from health services, universities, and scientific societies participated in the event. Professionals from PAHO's offices in Washington, D.C. and Guyana, the Ministry of Health/EPI in Haiti, and the United States Centers for Disease Control and Prevention (CDC) presented the EPI's status in the Region and in Haiti, as well as information on pneumococcal epidemiology, clinical picture, and vaccines. Results from studies were also presented, including a systematic review of the impact and effectiveness of the pneumococcal vaccine in Latin America and the Caribbean and lessons learned from introduction of PCV in Guyana, among others.

During the meeting, there was a great deal of discussion on the use of PCV, primarily around the appropriate vaccination schedule for the country. Several professionals suggested that Haiti should use the 2+1 schedule. However, representatives of the scientific societies in attendance confirmed that the 3+0 schedule is better for the country at this time, given the high mortality of children under 1 year of age. It was mentioned that studies published so far demonstrate that the 3+0, 3+1, and 2+1 schedules are effective in reducing hospitalizations and deaths. It was also mentioned that the country is following recommendations from PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases and WHO's Strategic Advisory Group of Experts (SAGE) on Immunization. It was stressed that, when introducing PCV, the most important thing is to reach high vaccination coverage in the country.

The meeting was very successful, clarifying the professionals' questions and strengthening their engagement in the vaccine introduction process. Health professionals have the role of promoting vaccines among parents and the community and clearing up doubts and preventing myths and baseless fears. It is essential for every health professional to be well-informed about new vaccines, to maintain people's high regard for the EPI, to ensure good vaccine acceptance, and consequently to attain high coverage. The country organizers requested PAHO's support for holding scientific meetings such as this one annually, on different immunization topics. ■

IN THIS EDITION

Assessing Risk for Measles, Rubella and Polio

Measles and Rubella

PAHO organized and conducted a workshop to adapt and validate the risk assessment tool (RAT) for measles and rubella in Bogotá, Colombia from 14-16 November 2018. This workshop included participation from the health delegates responsible for measles surveillance, information systems and immunization in at least five of the nine departments in the country that have experienced or are experiencing measles outbreaks, including cities like Barranquilla, Bogotá, Cartagena and Cucuta.

PAHO began adapting the original RAT developed by the WHO and the United States' Centers for Disease Control and Prevention (CDC) in 2017; it was mainly implemented in countries in other regions of the world where the measles and rubella viruses are endemic. PAHO's version of the tool aims to identify areas that are at high risk for measles and rubella virus re-introduction and dissemination, should an importation occur. These areas should immediately implement corrective actions to reduce the risk of outbreaks. The tool is intended to be used periodically by program managers from the national and subnational levels to monitor the implementation of measles elimination sustainability plans within a country.

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Announcement for Readers of the Immunization Newsletter

Dear Reader,

In 2019, the Immunization Newsletter will be celebrating its 40th anniversary, and to mark this, we will begin to print in Portuguese!

If you would like to receive the Newsletter in Portuguese, please email silvao@paho.org and mention whether you would like to receive it by email or by regular mail. If you prefer regular mail, please include your address.

Thank you very much,

Cuauhtémoc Ruiz Matus, Octavia Silva, Martha Velandia — Editors

Caribbean Measles Outbreak Response and Immunization Program Management Workshops

Caribbean sub-regional workshops on measles, polio, diphtheria and management of Expanded Programs on Immunization (EPI) were held during the period 1-9 October 2018 in Rose Hall, Montego Bay, Jamaica as a change in structure from the Caribbean EPI Managers' meeting usually held every year. The workshops' principal aims were to strengthen the knowledge and response capacities of EPI managers in the Caribbean.

Workshop on Rapid Responses to an Imported Measles Outbreaks

During 1-3 October 2018, a total of 35 immunization and epidemiology health officers from 25 Caribbean islands and territories were trained on rapid responses to imported cases of measles and rubella.

Using a new methodology and case study developed by PAHO's Comprehensive Family Immunization Unit, training participants learned to implement procedures and methods for reporting and conducting high-quality epidemiological investigations of measles outbreaks in a timely manner; implement aggressive outbreak response measures guided by a thorough field investigation; differentiate diagnoses of measles and rubella from those for arboviral diseases (e.g. Zika, dengue and Chikungunya); and interpret laboratory results for adequate diagnostic confirmations.

Working as members of a rapid response team, training participants were assigned to investigate and control a measles outbreak, both in the context of an arbovirus outbreak (Zika) and a mass gathering event, posing critical challenges in organizing the investigation and responding to prevent further spread of the virus. At the end of the case study, the rapid response teams were immersed in a simulation exercise, aimed at putting the recently acquired knowledge and skills to respond quickly to an outbreak from an imported case and conduct an organized response, into practice.

The simulation exercise re-created two hypothetical measles outbreak situations, one involving an international traveler and another in a public hospital. The simulation was aimed at helping participants learn how to organize as a rapid response team, conduct an epidemiological investigation of the outbreak, analyze and interpret investigation findings, and plan a rapid response to the outbreak.

Participants indicated that the inclusion of the case study and simulation exercise in the training was timely and effective in preparing them to manage an outbreak should there be an importation.

Participants from the training on rapid responses to measles outbreaks in the Caribbean, Jamaica, October 2018. Credit: PAHO/WHO.

Immunization Program Management Workshop

Participants representing 25 countries and territories in the Caribbean sub-region, including Guatemala and Haiti, as well as technical advisors from PAHO, met in Jamaica on 4-5 October 2018 for a workshop on data quality and use. The objectives of the workshop were to strengthen the capacity of EPI managers to:

1. Plan, supervise and monitor the immunization program;
2. Effectively analyze, interpret and use immunization data for planning;
3. Assess data quality and follow the methodological steps of a Data Quality Self-assessment (DQS);

The workshop began with an overview of the goals, objectives, and indicators in the Global Vaccine Action Plan (GVAP) for the period 2010-2020 and the Regional Immunization Action Plan (RIAP) for 2016-2020. This was followed by a brief history of the successes of the EPI program in the Caribbean, highlighting the achievements made in coverage rates and disease elimination.

The principles of EPI management were emphasized, including planning, organizing and setting goals, as were the roles of the EPI manager and the importance of supportive supervision.

The focus on effectively analyzing, interpreting and using immunization data began with a review on calculating coverage and drop-out rates, and a discussion of common denominator and numerator challenges and solutions.

Participants from the training on data quality and use in the Caribbean, Jamaica, October 2018. Credit: PAHO/WHO.

The session on data quality and use utilized modules from the publication *Tools for Monitoring the Coverage of Integrated Public Health Interventions*[1] as training material and included an introduction to the DQS, including methodological steps, objectives, results, and role of the EPI manager in the process.

This training also included a field exercise, during which the group was divided into four teams and traveled to local health facilities to collect concordance data from the immunization registries and monthly reports. This activity is an essential part of the DQS but also serves as a useful supervision activity for the managers.

The final session on data quality discussed the data collection process for the PAHO-WHO/UNICEF Joint Reporting Form (JRF) on immunization, during which the tables were reviewed, and tips were provided on how to complete sections of the JRF ahead of schedule to improve timeliness of reporting at the regional and global level. A presentation on microplanning was also given; it reviewed the analysis of coverage data, drop-out rates, unvaccinated children, as well as access/utilization problems and how to address these.

PAHO plans to continue working with EPI managers in the Caribbean to provide support in completing data quality assessments, timely reporting of country information using the JRF, addressing data quality challenges, improving data analysis and use, and achieving the goals set out in the GVAP and RIAP.

Workshop on Polio and Diphtheria

In addition to workshops on measles and data quality, a workshop on polio and diphtheria was held on 6 October 2018, attended by approximately 30 participants representing countries from all over the Caribbean. The objectives were the following:

- Carry out a polio outbreak response workshop and simulation exercise with the EPI managers of the Caribbean countries and territories;
- Sensitize EPI managers on the importance of AFP surveillance;
- Present the regional risk assessment for the importation or emergence of poliovirus and train EPI managers on the risk assessment tool for a sub-national risk assessment;
- Sensitize/re-sensitize EPI managers on the clinical manifestations and of the epidemiological situation of diphtheria in the Region.

The training started with a pretest to test the participants' base line knowledge. This was followed by a presentation on the current situation of diphtheria in the Americas and the clinical manifestations of diphtheria. After this session, the test questions were reviewed as a group.

The polio section started out with a global and

[1] Available at http://iris.paho.org/xmlui/handle/123456789/34510

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Dengue Vaccine

WHO Position[2]

The live attenuated dengue vaccine CYD-TDV has been shown in clinical trials to be efficacious and safe in persons who have had a dengue virus infection in the past (seropositive individuals) but carries an increased risk of severe dengue in those who experience their first natural dengue infection after vaccination (seronegative individuals). Countries should consider introduction of the dengue vaccine CYD-TDV only if the minimization of risk among seronegative individuals can be assured[3]

For countries considering vaccination as part of their dengue control programme, pre-vaccination screening is the recommended strategy.[4] With this strategy, only persons with evidence of a past dengue infection would be vaccinated (based on an antibody test, or on a documented laboratory confirmed dengue infection in the past). If pre-vaccination screening is not feasible, vaccination without individual screening could be considered in areas with recent documentation of seroprevalence rates of at least 80% by age 9 years.

Screening tests would need to be highly specific to avoid vaccinating truly seronegative persons and to have high sensitivity to ensure that a high proportion of seropositive persons are vaccinated. Conventional serological testing for dengue virus IgG (e.g. dengue IgG ELISA) is available in most dengue endemic countries and could be used to identify persons who have had a past dengue infection. However, such laboratory-based assays do not provide results at the point of care. Point-of-care tests, i.e. RDTs, would facilitate the implementation of the pre-vaccination screening strategy, but to date none have been validated or licensed specifically for the detection of past dengue infection. Use of currently available IgG-containing RDTs – despite their lower sensitivity for detection of past dengue infection compared with conventional dengue IgG ELISA – could be considered in high transmission settings until better RDTs for determin[in]g serostatus become available.

No screening test is likely to be 100% specific due to potential cross-reactivity with other flaviviruses. In settings with high dengue seroprevalence, a test with lower specificity might be acceptable as the proportion of seronegative individuals incorrectly vaccinated would be low. A prevaccination screening strategy may also be considered in low-to-moderate transmission settings. In settings with low seroprevalence a test with high specificity is needed. Given the limitations regarding specificity, some seronegative individuals may be vaccinated because of a false positive test result. Furthermore, as vaccine-induced protection against dengue in seropositive individuals is high but not complete, breakthrough disease will occur in some seropositive vaccinees. These limitations will need to be communicated to populations offered vaccination.

Decisions about implementing a pre-vaccination screening strategy with the currently available tests will require careful assessment at the country level, including consideration of the sensitivity and specificity of available tests and of local priorities, dengue epidemiology, country-specific dengue hospitalization rates, and affordability of both CYD-TDV and screening tests. Decisions about implementing a seroprevalence criterion-based vaccination strategy without individual screening in areas with documented seroprevalence rates of at least 80% at age 9 years will require population serosurveys at high resolution, i.e. at district and sub-district level. Careful assessment is required with regard to the feasibility and cost of population seroprevalence studies. Communication needs to ensure appropriate and full disclosure of the risks of vaccination of persons with unknown serostatus.

Vaccination should be considered as part of an integrated dengue prevention and control strategy. There is an ongoing need to adhere to other disease preventive measures such as well-executed and sustained vector control. Individuals, whether vaccinated or not, should seek prompt medical care in if dengue-like symptoms occur. Vaccinated patients should continue to be offered the best evidence-based clinical care for all patients with dengue.

Selection of target age group for vaccination

Whether there are age-specific effects, independent of serostatus, is the subject of ongoing research. Currently, the vaccine should be used within the indicated age range, which in most countries is 9–45 years. The age group to target for vaccination depends on the dengue transmission intensity in a given country, and will be lower in countries with high transmission, and higher in countries with low transmission. The optimal age group to be targeted is the age before which severe dengue disease incidence is highest; this can be ascertained from national and subnational routine hospital laboratory-confirmed surveillance data.

Vaccination schedule

In the absence of longer-term data on vaccine efficacy and safety with fewer than 3 doses, CYD-TDV is recommended as a 3-dose series given 6 months apart. Should a vaccine dose be delayed for any reason, it is not necessary to restart the course and the next dose in the series should be administered as soon as possible.

There are currently no data on the use of booster doses. Additional studies to determine the utility of a booster dose and its best timing are in progress. At this time there is no recommendation concerning a booster dose.

Special settings and populations

Outbreak response. CYD-TDV should not be considered as a tool for outbreak response.

Pregnant women. CYD-TDV is not recommended in pregnant and lactating women because insufficient data are available on its use in pregnancy. However, the limited data generated from inadvertent vaccination of pregnant women that occurred during clinical trials have not identified a specific risk. If a woman becomes pregnant before all 3 doses have been administered, the remaining doses should be given after lactation has been concluded.

Immunocompromised persons. Due to lack of data, CYDTDV is contraindicated in immunocompromised individuals.

Travellers. In travellers who have already had a documented dengue illness or are seropositive, vaccination before travel to high dengue transmission settings could be considered.

Surveillance

Dengue surveillance should be strengthened, particularly in the context of infections with clinical similarities to dengue (including emerging infections such a Zika virus infection). In areas of the world for which there is a paucity of data, further characterization of the burden of dengue, which appears to be growing, is needed. Use of standardized case definitions is encouraged to enhance data sharing and comparability across regions. With the potential increase in false-positive results from serological testing of CYD-TDV vaccinated individuals, diagnostic testing of an acute dengue infection should move to virological confirmation (such as PCR) whenever possible. The use of surveillance data to monitor population impact of a vaccination programme may be challenging as the year-to-year variability in dengue transmission may be greater than the expected vaccine impact.

Research priorities

There is an urgent need for the development of highly specific and sensitive RDTs for determination of dengue serostatus. Research is also needed to evaluate vaccine schedules with fewer doses, and to assess the need for booster doses. Locally applicable cost-effectiveness studies are needed to support policy decisions. Research on how best to implement and integrate pre-vaccination screening in an immunization programme is recommended. The development of safe, effective, and affordable dengue vaccines for use irrespective of serostatus remains a high priority. ■

[2] Excerpted from the WHO's position paper on the dengue vaccine, published in September 2018 at https://apps.who.int/iris/bitstream/handle/10665/274315/WER9336.pdf?ua=1

[3] Evidence to recommendation Table 1: Consideration of Dengue Vaccine. Geneva: World Health Organization; 2018 - http://www.who.int/immunization/policy/position_papers/E2R_1_dengue_2018.pdf

[4] Evidence to recommendation Table 2: Seroprevalence and screening and vaccination strategy. Geneva: World Health Organization; 2018 - http://www.who.int/immunization/policy/position_papers/E2R_2_dengue_2018.pdf

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Dengue Recommendations from PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases, 2015-2016

2015

- TAG recommends that the countries swiftly implement an integrated approach to reduce dengue transmission, providing training on diagnosis and clinical case management, emphasizing vector control, and improving awareness so that people know how to protect themselves and their communities from mosquitoes as stated in the World Health Assembly Resolution (2015).
- While the burden of dengue in the Americas is significant, TAG notes there is insufficient evidence to make a recommendation on vaccine introduction at this time. TAG is committed to evaluating timely new evidence as it becomes available and countries should do the same over the coming months in their own national decision-making processes.
- In coordination with other initiatives, PAHO's ProVac Initiative should support national level decision-making regarding dengue prevention and control, through the use of economic evaluations grounded in local data.

2016

- Given the conditions for the use of this vaccine and the lack of evidence on some aspects of safety and effectiveness, PAHO's TAG reaffirms the prior recommendation made in July 2015 and does not recommend the introduction of the dengue vaccine into routine national immunization programs at this time.
- Countries should strengthen surveillance in order to better understand dengue disease burden. This is especially important in the context of outbreaks of vector-borne diseases like Zika and Chikungunya.

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Participants at the RAT workshop for measles and rubella in Colombia, November 2018. Credit: PAHO.

Polio workshop, where risk analysis tool was discussed, Honduras, November 2018. Credit: PAHO.

Additionally, districts will use the tool to analyze indicators by locality.

The tool assesses risk as the sum of indicator scores in five categories by district level: population immunity, surveillance quality, program performance, threat assessment and rapid responses to measles and rubella virus importations. Each district in a country is assigned to a programmatic risk category of low, medium, high, or very high risk, based on the overall risk score. Scoring for each indicator was developed based on expert consensus.

The workshop was a success, as participants (end-users of the tool) greatly welcomed the tool and highlighted its several features such as user-friendliness and power of visualization, as results were shown by maps with districts color-coded by risk category and with an automatized final report to summarize the results for national authorities. Participants also provided valuable feedback to shape the final version of the tool, which will be released in 2019.

Polio

As part of the polio eradication certification process, it is necessary for all countries to carry out thorough risk analyses from the municipality level to the national level, so that countries may identify risks for the reintroduction of wild poliovirus or the emergence of vaccine-derived poliovirus in the Americas. To support countries with this task, PAHO has developed a risk analysis tool, with support from the Regional Certification Commission (RCC) and approval from PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases. This tool was shared with all countries in the Region at the 6th Regional Polio Meeting in Guatemala in December 2018, and has already been used by Bolivia, Chile, Costa Rica, Guatemala, Honduras, Nicaragua, Peru, and Venezuela.

The main sections in the risk analysis are: vaccination coverage (carrying the highest weight at 60%), surveillance of acute flaccid paralysis (25%), and other factors 15%, consisting of risk of importation, risk of propagation, insecurity, and outbreak preparedness. Countries should use the results from their risk analyses to generate risk mitigation plans. These mitigation plans should be developed with the national authorities in charge of immunization, epidemiological surveillance and health services, to identify the causes that generate risk and propose activities and mitigation tasks to address these risks. Risk mitigation plans should be specific and include the activities that will take place, the people responsible for carrying out the activities, and the timeline and budget that will be assigned to each activity.

The RCC has requested that countries include the results from the risk analyses in the form of a map or table, along with their risk mitigation plans, in their 2018 Annual Reports on the Documentation of the Polio Eradication Status, which must be submitted to PAHO/WHO with approval and signatures from all members of the National Certification Committee (NCC) by 31 August 2019. ■

Guidance for Testing of Measles and Rubella in the Laboratory Network of the Region of the Americas

As a part of its laboratory support and technical assistance in the post-elimination phase, PAHO has prepared and disseminated the document "Guidance for Testing of Measles and Rubella in the Laboratory Network of the Region of the Americas" (in Spanish). This document guides professionals with regard to testing strategies, correlation and interpretation of results, training, and transfer of technology, to boost national laboratory capacity to provide results that enable accurate case classification, to optimize the response of the surveillance system to detect imported viruses, and to provide guidance for the study of transmission chains.

The document presents the routine algorithm and the complementary algorithm to analyze samples from suspected cases with an initial IgM-positive or indeterminate result (see following figures). One section discusses the laboratory's function during measles or rubella outbreaks, including how to address sporadic imported cases and the study of transmission chains. Reading these guidelines and applying them in routine surveillance will improve health workers' skills for laboratory investigation of suspected measles and rubella cases in low-disease incidence settings, as an essential component for keeping the Region's countries free of these diseases.

For more information, please visit http://iris.paho.org/xmlui/bitstream/handle/123456789/34932/9789275319970_spa.pdf?sequence=9&isAllowed=y ■

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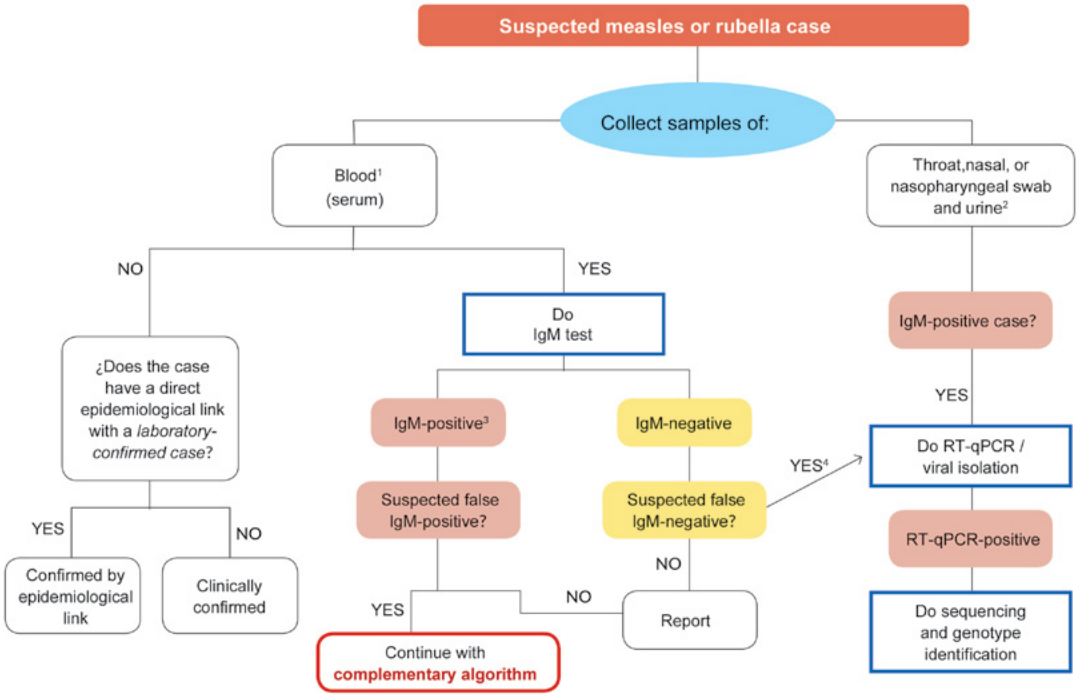
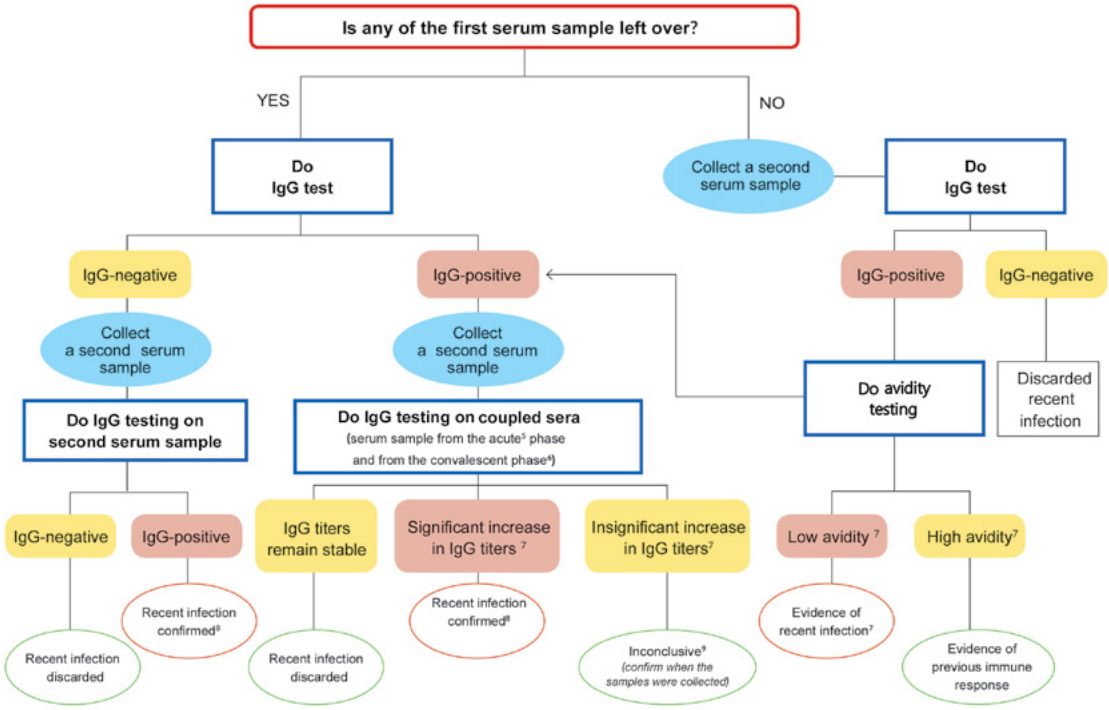
Routine algorithm for testing of specimens from a suspected measles and rubella case



[1] Collect an adequate serum sample no more than 30 days after rash onset.
[2] Collect a respiratory specimen within 3 days of rash onset and no later than 10 days.
[3] In an elimination setting, all IgM-indeterminate results should be regarded as IgM-positive.Virological testing is recommended.
[4] Analyze IgG in the first serum sample and request collection of a second sample for additional testing. Virological testing is recommended.

Source: Pan American Health Organization. Guidance for testing of measles and rubella in the Laboratory Network of the Region of the Americas. Washington, D.C.: PAHO; 2018. in press.

Complementary algorithm for serological testing of specimens with an initial IgM-positive or indeterminate results



[5] Collect an adequate serum sample within 7 days of rash onset.
[6] Collect an adequate serum sample in the convalescent phase,14-21 days after the sample from the acute phase.
[7] Follow the criteria for test interpretation.
[8] Evidence indicates an recent infection (either wild type or a vaccine strain).
[9] Correlate with IgG avidity results.

Source: Pan American Health Organization. Guidance for testing of measles and rubella in the Laboratory Network of the Region of the Americas. Washington, D.C.: PAHO; 2018. in press.

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regional update on the current situation of polio eradication and global certification standards, followed by a discussion on the clinical manifestations of polio and the differences between wild polio, vaccine-derived poliovirus (VDPV), circulating VDPV (cVDPV), immunodeficiency-related VDPV (iVDPV), and cases of vaccine associated paralytic polio (VAPP), as well as a discussion on the epidemiological surveillance of AFP cases and the current gaps that countries have in meeting the surveillance quality indicators.

The results and methodology of the regional polio risk assessment for the importation or emergence of poliovirus were then discussed and the MS Excel tool for countries to conduct their own sub-national risk assessment was reviewed. A polio outbreak simulation exercise was done, as well. In this exercise, there were six groups and two different scenarios. Each person had a different role in their group (Minister of Health, EPI manager, surveillance manager, laboratory director). They used their outbreak response guidelines to respond to the scenario.

After the simulation exercise, the participants took a comprehensive test, and everyone reviewed the answers. Some comments from the participants after the workshop included:

- "Today was an eye opener. Our coverage is low, and I have been thinking about doing a campaign for a while, but today solidified that decision."
- "Today inspired me to work harder. I'm busy, but this is a priority."
- "The polio outbreak simulation exercises were helpful to understand the outbreak response plan."

Recommendations issued from the workshop included:

- The workshop should be replicated in each Caribbean country, with people involved in the EPI and epidemiological surveillance.
- Caribbean countries should strengthen epidemiological surveillance performance and strive to meet the AFP quality surveillance indicators.
- All Caribbean countries should review and update their outbreak response plans.
- All Caribbean countries should conduct outbreak simulation exercises with all persons involved.
- All Caribbean countries should work on a sub-national risk assessment.

Second Meeting of the Maternal and Neonatal Immunization Group

The Maternal and Neonatal Immunization (MNI) Group was created in 2016 and is made up of professionals from PAHO's Comprehensive Family Immunization Unit of the Family, Health Promotion, and Life Course Department (FPL/IM); the Rollins School of Public Health at Emory University; the Institute for Clinical Effectiveness and Health Policy (IECS) of Argentina; and public health professionals from the Region of the Americas.

The group met on 4-5 September 2018 in Washington, DC to present and discuss preliminary results from a qualitative study of MNI in five countries of the Region (Argentina, Brazil, Honduras, Mexico, and Peru). The study's objectives were to understand the current state of MNI policies, strategies and practices, and to describe the knowledge and perceptions of pregnant women and health workers regarding MNI. In 2017 and early 2018, researchers participated in missions to five capital cities (Buenos Aires, Brasilia, Lima, Mexico City, and Tegucigalpa), where they conducted interviews with key informants from the Ministry of Health, the National Immunization Technical Advisory Group (NITAG), scientific societies, representatives of medical and nursing schools, and health workers; focus groups with pregnant women; and observation at health centers.

MNI refers to vaccines administered before pregnancy, during pregnancy, and during the puerperium for the purpose of immunizing both mother and child. This is fundamental, since newborns and infants during the first months of life are particularly vulnerable to infections from vaccine-preventable diseases. Furthermore, their immature immune system is not yet capable of producing a protective immune response to specific antigens in different vaccines until several weeks or months after birth.

Participants at the meeting of the Maternal and Neonatal Immunization Group in Washington, D.C., September 2018. Credit: PAHO/WHO.

MNI makes it possible to reduce morbidity and even mortality during early childhood. Following the instructions of the PAHO Technical Advisory Group (TAG) on Vaccine-preventable Diseases, 31 countries in the Region of the Americas now vaccinate pregnant women against seasonal influenza, 23 routinely vaccinate pregnant women against tetanus (with Td vaccine), and 14 vaccinate against tetanus and whooping cough (with Tdap vaccine). With regard to neonatal immunization, 23 countries routinely vaccinate newborns against hepatitis B (during the first 24 hours) and 32 against tuberculosis with the BCG vaccine.

Given the visibility that MNI is gaining regionally and globally, it is of utmost importance to identify strengths, weaknesses, and gaps, as well as opportunities to strengthen MNI. During the meeting, participants had the opportunity to discuss and consolidate their impressions of the missions. It was emphasized that five countries observed that greater integration between the Expanded Program on Immunization (EPI) and the Maternal and Child Health Department could facilitate identification of synergies and interinstitutional collaboration in implementation of MNI.

Preliminary results indicate that most pregnant women believe that vaccines are important and prioritize their babies' health over their own. No significant resistance to MNI was observed, although some fears were identified. The evidence shows that health professionals are a very strong influencing factor in a pregnant woman's decision to be vaccinated. One of the recommendations discussed during the meeting was to expand teaching on vaccines and MNI in the curricula of university programs, and to establish platforms to facilitate continuing education of health professionals. The design of specific MNI communication materials and the use of information channels such as social networks emerged as one of the strategies to improve vaccination coverage.

The good practices identified in each capital city will be used to inform future technical cooperation activities involving PAHO, international partners, and other countries. Furthermore, it is expected that the study's results will be disseminated in scientific publications, enabling the Region itself and other geographical areas to strengthen implementation of MNI by taking into account the lessons learned in Latin America. ■

Measles/Rubella/Congenital Rubella Syndrome Surveillance Data, Final Classification, 2017-2018*

Country	Total Measles/Rubella Suspect Cases Notified		Total Confirmed Measles Cases		Total Confirmed Rubella Cases		Total Congenital Rubella Syndrome (CRS) Suspect Cases Notified		Total Congenital Rubella Syndrome (CRS) Confirmed Cases Notified	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Anguilla	2	1	0	0	0	0	0	0	0	0
Antigua and Barbuda	0	4	0	1	0	0	0	0	0	0
Argentina	358	725	3	14	0	0	121	19	0	0
Aruba	0	0	0	0	0	0	0	0	0	0
Bahamas	0	1	0	0	0	0	0	0	0	0
Barbados	5	11	0	0	0	0	0	0	0	0
Belize	34	58	0	0	0	0	7	2	0	0
Bermuda	0	0	0	0	0	0	0	0	0	0
Bolivia	62	240	0	0	0	0	0	0	0	0
Brazil	75	11339[a]	0	10314[a]	0	0	4	57	0	0
Canada	—	—	45	29	—	—	—	—	—	1
Cayman Islands	1	4	0	0	0	0	0	0	0	0
Chile	180	581	0	24	0	0	131	137	0	0
Colombia	1288	5857	0	199	0	0	10	363	0	0
Costa Rica	101	65	0	0	0	0	175	37	0	0
Cuba	1433	2023	0	0	0	0	0	0	0	0
Dominica	0	0	0	0	0	0	3	2	0	0
Dominican Republic	339	141	0	0	0	0	0	0	0	0
Ecuador	370	600	0	19	0	0	0	0	0	0
El Salvador	274	498	0	0	0	0	0	0	0	0
French Guiana	—	—	—	—	—	—	—	—	—	—
Grenada	1	1	0	0	0	0	0	0	0	0
Guadeloupe	—	—	—	—	—	—	—	—	—	—
Guatemala	179	517	0	1	0	0	2	5	0	0
Guyana	15	22	0	0	0	0	6	0	0	0
Haiti	160	204	0	0	0	0	21	9	0	0
Honduras	159	207	0	0	0	0	36	21	0	0
Jamaica	109	215	0	0	0	0	0	0	0	0
Martinique	—	—	—	—	—	—	—	—	—	—
Mexico	3476	3976	0	5	0	2	0	0	0	0
Nicaragua	228	285	0	0	0	0	32	46	0	0
Panama	50	67	0	0	0	0	1	3	0	0
Paraguay	544	908	0	0	0	0	4	0	0	0
Peru	334	1095	0	41	0	0	0	1	0	0
Puerto Rico	—	—	—	—	—	—	—	—	—	—
Saint Kitts and Nevis	1	3	0	0	0	0	0	0	0	0
Saint Lucia	0	0	0	0	0	0	6	20	0	0
Saint Vincent and The Grenadines	2	3	0	0	0	0	0	0	0	0
Suriname	4	3	0	0	0	0	0	0	0	0
Trinidad and Tobago	1	13	0	0	0	0	60	98	0	0
Turks and Caicos Islands	0	0	0	0	0	0	0	0	0	0
United States[b]	—	—	120	372	9	2	—	—	2	—
Uruguay	2	11	0	0	0	0	0	0	0	0
Venezuela	1417	4035	727[c]	5668[c]	0	0	37	0	0	0
Virgin Islands (British)	0	0	0	0	0	0	0	0	0	0
Virgin Islands (U.S.)	—	—	—	—	—	—	—	—	—	—
Total	**11204**	**33713**	**895**	**16687**	**9**	**4**	**656**	**820**	**2**	**1**

*Data as of February 2019, unless otherwise noted.
[a] Ministry of Health, Brazil;
[b] Case count is preliminary and subject to change. Data are updated monthly;
[c] PAHO/WHO epidemiological update for measles, 18 January 2019;
— No updated report received.
Source: Integrated Surveillance Information System (ISIS), Measles Elimination Surveillance System (MESS), and country reports to FPL-IM/PAHO

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

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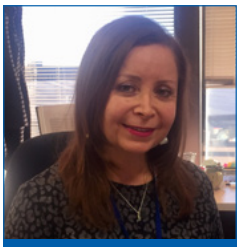
What I Have Learned in the Era of Post-Certification of Measles Elimination in the Americas

By Desiree Pastor, Regional Advisor on Measles, Rubella, and Congenital Rubella Syndrome

On 27 September 2016, we celebrated the declaration of measles elimination in the Americas during PAHO's 55th Directing Council. The titanic effort that our countries have made to sustain, document, and confirm interruption of endemic measles virus transmission was a 14-year-long process that began in 2002, when Venezuela reported the last endemic case. Since then, endemic transmission has been reestablished only in Brazil, due to an outbreak that lasted 28 months from 2013 to 2015. The rest of the countries have managed to sustain elimination from 16 to 28 years since their last endemic cases.

On 1 September 2017, we received news of a laboratory-confirmed measles case in the municipality of Caroní (Bolivar state), Venezuela. That day, we began a frantic race against the clock to contain the outbreak within 12 months in order to prevent reestablishment of endemic transmission in the Region of the Americas. However, given vaccination coverage being lower than 95% in the last 10 years and despite vaccination actions in early September in Caroní's parishes, the virus spread rapidly in the country. Venezuela lost its status as a measles-free country on 30 June 2018. Six months later, the virus had spread in other countries, beginning with Brazil and Colombia, followed by Ecuador, Peru, Argentina, and finally, Chile.

I admit that, since 1998 when I started working as an advisor on immunization with PAHO in different countries (Bolivia, Colombia, El Salvador, and Venezuela), this has been the greatest challenge in my professional career as PAHO's regional advisor for measles and rubella elimination. Thinking about the outbreaks that occurred from September 2017 to December 2018, it is clear that the three basic pillars to sustain elimination failed in some countries: **gaps in vaccination of children under 5** led to a build-up of susceptible children aged 5-10 years and, in addition, infants under 1 year are increasingly becoming the group with the greatest incidence rate in measles outbreaks in Latin America.



Desiree Pastor.

It is also clear that health workers should receive ongoing training to **maintain a surveillance system that is sensitive to every suspected case**, conduct household investigation, and carry out "blockade and mop-up" vaccination to prevent new cases with rapid mass vaccination actions. And finally, it will be difficult to interrupt circulation of the measles virus if there is no **trained rapid response team** that ensures case-finding for new cases in health services and in the community, thoroughly questioning patients with fever and rash that go to hospitals, in order to isolate every suspected case, whether in a hospital room or in the home. Despite multiple trainings on rapid response by PAHO at regional, subregional, and national meetings, lack of knowledge of the clinical picture of measles and of proper case management in health services still persist. Only when these three pillars are balanced will we be able to recover and sustain this achievement in our Region.

The problem of people from Venezuela migrating to other countries is a new, growing, and multifactorial phenomenon, which overwhelmed expectations for rapid containment of the virus in several municipalities in Brazil and affected Colombia's main cities.

Venezuela is now close to completing an indiscriminate mass vaccination campaign in children aged 6 months to 15 years. Without a doubt, the country will meet this goal and will interrupt measles virus transmission.

Colombia has made major efforts to contain transmission, despite constant imports from Venezuela into cities like Bogotá, Medellin, Cartagena, and Barranquilla, and in border municipalities, such as Cúcuta. Cartagena has established an exemplary system of hospital isolation to prevent hospital transmission in the main pediatric hospitals.

Brazil is on the brink of reestablishing endemic transmission within two months, but transmission can surely be interrupted in Manaus and the remaining municipalities in Amazonas, if assertive action is taken to vaccinate adolescents and young adults.

The rest of the countries—Argentina, Chile, Ecuador, and Peru—will undoubtedly be free of measles in a short time.

The greatest lesson learned in this experience is recognizing that our Region is changing, with new political, economic, and social scenarios that will test the sustainability of measles elimination. We have always learned from our lessons and we have been paving the way for 40 years in the Expanded Program on Immunization. I have no doubt that with everyone's effort, we will recover our status as a measles-free Region! ■

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