News

Region of the Americas eliminates maternal and neonatal tetanus
Hayatee Hasan, WHO Headquarters

The Region of the Americas has eliminated maternal and neonatal tetanus (MNT), a disease that used to be responsible for the deaths of more than 10,000 newborns every year in the Americas.

The elimination of the disease was declared this year in Haiti, which made it possible to reach the regional goal. MNT is the sixth vaccine-preventable disease to be eliminated from the Americas, following the regional eradication of smallpox in 1971, poliomyelitis in 1994, rubella and congenital rubella syndrome in 2015, and measles in 2016.

“The elimination of maternal and neonatal tetanus is proof again that vaccines work to save the lives of countless mothers and babies,” said Carissa F. Etienne, Director of the Pan American Health Organization/World Health Organization (PAHO/WHO). “Let us continue to protect the people of our Region by investing in strong national immunization programs that are capable of vaccinating all individuals and quickly identifying vaccine-preventable diseases.”

Unlike other vaccine-preventable diseases, MNT is considered eliminated when there is an annual rate of less than one case of neonatal tetanus per 1,000 live births at the district level. Tetanus cannot be fully eradicated because the bacterium that causes the disease, Clostridium tetani, exists throughout the environment in soil and the feces of many different animals.

Before widespread modern vaccination against MNT began in the 1970s, neonatal tetanus was responsible for the deaths of more than 10,000 newborns every year in the Americas – a number considered low by experts due to severe underreporting of cases. According to data from WHO, neonatal tetanus killed about 34,000 newborn children in 2015, a 96% reduction from 1988, when an estimated 787,000 newborn babies died of tetanus within their first month of life.

Read the news release: [English](#), [Spanish](#)
New collaboration to advance maternal immunization
Hayatee Hasan, WHO Headquarters

A newly launched collaboration is bringing together stakeholders from around the world to improve infant health and survival through maternal immunization, particularly in low- and middle-income countries (LMICs). The newly assembled Advancing Maternal Immunization (AMI) collaboration is meeting an urgent need for pregnant mothers in LMICs to be able to protect their babies from infectious diseases by getting vaccinated themselves—an option not used to its full potential in many parts of the world, especially in resource-limited settings where it is not widely available.

With a current focus on respiratory syncytial virus (RSV)—which is estimated to cause more than a quarter of global respiratory deaths (nearly 120,000) among children younger than five years of age annually—AMI aims to ensure that a successful RSV vaccine is made available to women in LMICs without delay. No licensed vaccine exists to prevent RSV, but a number of vaccine candidates are advancing, including a maternal vaccine in late-stage development that may be available in the next few years.

Coordinated by PATH in collaboration with the World Health Organization (WHO) and funded by the Bill & Melinda Gates Foundation, AMI will start by developing a roadmap to facilitate informed global, regional, and country decisions around RSV maternal vaccines. It will also identify requirements to enable rapid launch and uptake in LMICs.

Read the full story.

The world is running out of antibiotics, WHO report confirms
Hayatee Hasan, WHO Headquarters

A report, Antibacterial agents in clinical development -- an analysis of the antibacterial clinical development pipeline, including tuberculosis, launched by WHO shows a serious lack of new antibiotics under development to combat the growing threat of antimicrobial resistance.

Most of the drugs currently in the clinical pipeline are modifications of existing classes of antibiotics and are only short-term solutions. The report found very few potential treatment options for those antibiotic-resistant infections identified by WHO as posing the greatest threat to health, including drug-resistant tuberculosis which kills around 250,000 people each year.

"Antimicrobial resistance is a global health emergency that will seriously jeopardize progress in modern medicine," says Dr Tedros Adhanom Ghebreyesus, Director-General of WHO. "There is an urgent need for more investment in research and development for antibiotic-resistant infections including TB, otherwise we will be forced back to a time when people feared common infections and risked their lives from minor surgery."

Read the news release. Read the Q&A on why vaccination is important for addressing antibiotic resistance.
**New report calls for a global plan to defeat meningitis**

Hayatee Hasan, WHO Headquarters

A new report on meningitis calls for a global plan that inherits the success of the past two decades and addresses the challenges of the next 13 years, to 2030.

The Meningitis Research Foundation (MRF) and Wilton Park called together over 50 global experts to shape a vision towards defeating meningitis, including experts and representatives from the World Health Organization (WHO), UNICEF, PATH, Médecins Sans Frontières, Centers for Disease Control and Prevention, Gavi, the Vaccine Alliance, the Bill & Melinda Gates Foundation and other global health organizations, patient groups and pharmaceutical companies.

The report includes key priorities from the WHO to answer the call by eliminating meningitis epidemics from the 'meningitis belt' in sub-Saharan Africa by 2030 and an intent to work with partners and stakeholders in a bid to extend the scope to other countries around the world, and to help tackle the many different causes of meningitis.

Vinny Smith, Chief Executive of the MRF said: “We called for this important meeting because no matter where we live, meningitis will only be defeated with coordinated global action.”

Marie-Pierre Preziosi, WHO Flagship Projects Lead, Initiative for Vaccine Research, said: “We understand that putting meningitis high on the global agenda, setting a global vision and strategy, and working at the interface between many disciplines could be a very powerful incentive to reach the next level of disease control to transform our world and leave no one behind by 2030.”

Sir Brian Greenwood, a leading expert in meningitis, said: “Meningitis is a multifaceted problem and a multidisciplinary approach is needed. We need a global plan for meningitis through to 2030, along the lines of the existing Malaria Technical Action Plan that was ratified by the World Health Assembly.”

Read the conference report in [English](#).

Read the conference report in [French](#).

**WHO issues updated cholera vaccines position paper**

Hayatee Hasan, WHO Headquarters

In an updated position paper on cholera vaccines published in the August 2017 edition of the Weekly Epidemiological Record, WHO incorporates recent developments in the field of cholera and provides revised guidance on the target populations for immunization.

Cholera prevention and control should be a priority in areas at risk for cholera or where endemic cholera is present. Given the current availability of oral cholera vaccines and data on their safety, efficacy, field effectiveness, feasibility, impact and acceptability in cholera-affected populations, these vaccines should be used in areas with endemic cholera, in humanitarian crises with high risk of cholera, and during cholera outbreaks. The vaccines should always be used in conjunction with other cholera prevention and control strategies.

Vaccination should not disrupt the provision of other high priority health interventions to control or prevent cholera outbreaks. Appropriate case management, water, sanitation and hygiene (WASH) interventions, surveillance and community mobilization remain cornerstones of cholera control.

Vaccination complements the other prevention and control measures and should be implemented in relevant settings as part of comprehensive cholera control strategies or while the other activities are being developed.

Cholera is a rapidly dehydrating diarrhoeal disease and is spread mainly by faecal contamination of water and food and is closely linked to poor sanitation and lack of clean drinking water.

Approximately 1.3 billion people are at risk of cholera in endemic countries. An estimated 2.86 million cholera cases occur annually in endemic countries. Among these cases, there are an estimated 95 000 deaths. About half of the cholera cases and deaths are estimated to occur in children under 5 years of age, but any age group may be affected. Two types of oral cholera vaccines are currently recommended for use by WHO.

Read the updated cholera vaccines position paper.
**WHO issues updated diphtheria vaccines position paper**

Hayatee Hasan, WHO Headquarters

In an updated position paper on diphtheria vaccines published in the Weekly Epidemiological Record, WHO incorporates recent evidence on diphtheria and provides revised recommendations on the optimal number of doses and timing of diphtheria vaccination.

In view of the widespread use of combination vaccines, it provides guidance on the alignment of vaccination schedules for different antigens included in routine childhood immunization programmes. The recommendations concerning diphtheria vaccine booster doses later in life are also updated. Recommendations on the use of diphtheria vaccines were discussed by the Strategic Advisory Group of Experts on immunization (SAGE) in April 2017. The evidence presented at the meeting can be accessed here.

All children worldwide should be immunized against diphtheria. Recent diphtheria outbreaks in several countries reflect inadequate vaccination coverage and have demonstrated the importance of sustaining high levels of coverage in childhood immunization programmes. Every country should seek to achieve timely vaccination with a complete primary series plus booster doses. Those who are unimmunized are at risk regardless of the setting.

Read the updated diphtheria vaccines position paper.

**Colombia launches cascade training to introduce fractional doses of the Inactivated Poliovirus Vaccine**

Diego Garcia, EPI Manager-Colombia; Viviana Calderon and Ivy Talavera, PAHO-Colombia; Ana Elena Chevez and Elizabeth Thrush, PAHO-Washington, DC

On 11-12 September 2017, Colombia became the first country in the Region to launch a training to introduce a fractional dose schedule of the inactivated poliovirus vaccine (fIPV).

A practical session was included on the training agenda, so that those in attendance could practice the vaccination technique and become familiar with the formation of the bleb immediately after the vaccine is administered.

Taking advantage of this training, the country emphasized the importance of improving surveillance for acute flaccid paralysis (AFP), preparing to detect and respond to any event or outbreak of poliovirus, and reinforced messages on strengthening cold chain practices, the surveillance of adverse events following immunization, and containment.

A pre and post-test was given to measure the knowledge gained at the meeting and the results showed a 12% increase in knowledge over the course of the two-day training, from 86% knowledge at the beginning to 98% at the end of the training.

The department representatives who attended this meeting will be in charge of holding the department-level trainings. Between now and November 2017, Colombia plans to hold 258 trainings at the department and municipal levels, training a total of 9,100 vaccinators.

In addition to these meetings, Colombia has organized a further 12 meetings with pediatric and general physicians to inform them of the new vaccination strategy and request their technical and scientific endorsement of this recommendation of their patients.

Throughout the Region, trainings are planned for September 2017 through November 2017 in Ecuador, El Salvador, Guatemala and Honduras. All of these countries, including Colombia, plan to initiate the change in vaccination schedule from one complete dose of IPV to two fractional doses of IPV at the beginning of January 2018.
Colombia’s Ministry of Health recognizes the International Rotary Foundation support for Polio Eradication efforts in the country

Diego Garcia, Ministry of Health, Colombia; Viviana Calderon and Ivy Talavera, PAHO-Colombia; Ana Elena Chevez and Elizabeth Thrush, PAHO-Washington, DC

The International Rotary Foundation, created in July 1917, is celebrating 100 years of community service this year and has been one of the key partners for global polio eradication.

In Colombia, Rotary International supported initial polio eradication efforts in the 1980’s and in 2015 renewed their commitment to support the country to achieve the objectives outlined in the Global Polio Eradication and Endgame Plan.

In 2016, Rotary joined the country for the verification and certification process of the switch from the trivalent oral polio vaccine (tOPV) to the bivalent vaccine (bOPV).

During the current year, Rotary has participated in the poliovirus containment verification process in the national network of laboratories and more recently, has accompanied the Ministry of Health (MoH) in the process of introducing fractional doses of the inactivated polio vaccine (fIPV).

Recognizing the importance of Rotary International’s support in Colombia, the Director of Promotion and Prevention in the Ministry of Health and Social Protection, Dr Elkin de Jesús Osorio, in the name of the Minister of Health, Dr Alejandro Gaviria Uribe, delivered a special award to Rotary International in Colombia for supporting the global fight against poliomyelitis.

This recognition was given at the opening ceremony for the national training for fIPV implementation, held in Bogotá on 11 September 2017. Accepting the award on behalf of Rotary International Colombia was Efrain Marmolejo and Jorge Maldonado, District Governors of Rotary in Colombia and Dr Guido Chávez, former District Governor, member of Rotary International and member of Colombia’s National Certification Committee for the Elimination of Poliomyelitis.

During his speech, Dr Efrain Marmolejo highlighted the commitment of the Ministry of Health of Colombia to maintain polio eradication and also thanked PAHO/WHO for its support by placing a Rotary pin on Dr Gina Watson, Representative of PAHO/WHO in Colombia.

Representatives from Rotary International, MOH Colombia and PAHO/WHO Colombia

Dr Gina Watson, Representative of PAHO/WHO in Colombia, receiving the Rotary pin.
Call for urgent support to scale up response and address measles outbreak in Somalia
Hayatee Hasan, WHO Headquarters

As millions of people in Somalia remain trapped in a devastating cycle of hunger and disease, WHO and health partners are working with national health authorities to save lives and reach the most vulnerable with essential health services.

More than 2 years of insufficient rainfall and poor harvests have led to drought, food insecurity and a real risk of famine. Malnutrition, mass displacement as a result of the drought, and lack of access to clean water and sanitation have created ideal conditions for infectious disease outbreaks.

Somalia is facing its worst measles outbreak in 4 years, with over 14,823 suspected cases reported in 2017 (as of 31 July), compared to 5,000–10,000 cases per year since 2014. The situation is especially critical for millions of under-vaccinated, weak and hungry children who are more susceptible to contracting infectious diseases. More than 80% of those affected by the current outbreak are children under 10 year of age.

In early 2017, WHO and partners, in collaboration with national health authorities, vaccinated almost 600,000 children aged 6 months to 5 years for measles in hard-to-reach and hotspot areas across the country. Despite these efforts, the transmission of measles continues, compounded by the ongoing pre-famine situation, continued mass displacement, and undernourished children living in unhygienic conditions.

To contain the outbreak, a nationwide campaign is planned for November 2017 to stop transmission of the disease, targeting 4.2 million children. The campaign will also intensify efforts to strengthen routine immunization and reach unvaccinated children to boost their immunity.

An estimated US$ 14.4 million (a cost of US$ 3.36 per child) is required by WHO and health partners to conduct the measles vaccination campaign in November 2017, of which WHO requires about US$ 6.8 million. To date, no funding has been received.

More on the measles outbreak in Somalia.
Past Meetings/Workshops

Sixth Meeting of the European Regional Verification Commission for Measles and Rubella Elimination (RVC)

Catharina de Kat, WHO Europe

Location: Bucharest, Romania
Date: 15-17 June 2017
Participants: Members of the Regional Verification Commission for Measles and Rubella Elimination (RVC), UNICEF, ECDC, WHO/Europe, WHO headquarters, PAHO, representatives of the Romanian national verification committee for measles and rubella elimination (NVC), Ministry of Health and the National Institute of Public Health

Purpose: The RVC met to evaluate annual status updates (ASUs) for 2016 received from 51 Member States in the Region that have initiated the verification process and established a national verification committee for measles and rubella elimination (NVC). The meeting included face-to-face discussions with representatives of the Romanian NVC and of the Romanian Ministry of Health and the National Institute of Public Health on the ongoing measles outbreak situation in Romania, related challenges and planned response activities.

Details: The RVC concluded that:
- 42 (out of 53) Member States in the European Region interrupted endemic measles transmission as of the end of 2016, and 37 Member States interrupted endemic rubella transmission;
- 33 Member States provided evidence to demonstrate the elimination of endemic transmission of measles (interruption for at least 36 months), and 33 for the elimination of endemic transmission of rubella;
- Nine Member States remained endemic for measles transmission in 2016, and 14 for rubella transmission. Nine Member States remained endemic for both measles and rubella.

The RVC was unable to review the measles and rubella status of two Member States (Monaco and San Marino).

More information on the RVC’s conclusions and recommendations per country are provided in the meeting report.
Subregional meeting looks at progress and sustainability of rotavirus surveillance in Europe

Danni Daniels, WHO EURO

Location: Riga, Latvia

Date: 20-22 June 2017

Participants: Members of the Rotavirus Sentinel Surveillance Network in the WHO European Region

Purpose: The meeting, organized by WHO/Europe, provided hands-on training in surveillance data management and analysis. It gave all participants the opportunity to discuss national, regional and global progress in rotavirus sentinel surveillance, as well as the Network’s future priorities and sustainability.

Details: Participants discussed national, regional and global progress in rotavirus sentinel surveillance, as well as the Network’s future priorities and sustainability.

The Network is part of the WHO-coordinated Global Rotavirus Surveillance Network (GRSN), which is funded by Gavi, the Vaccine Alliance. As 5 of the 7 European countries in the Network will have transitioned from Gavi support by the end of 2017, Network members discussed ways to reduce costs, ensure sustainable funding for surveillance and leverage the existing rotavirus surveillance platform to detect other enteric diseases.

In order to lower regional costs, the number of specimens sent annually for genotyping to the Regional Reference Laboratory in Belarus has already been reduced from 100 to 60 per country.

Background

Vaccination against rotavirus is included in the routine immunization programmes of 17 countries in the Region. Five of these countries (Armenia, Georgia, the Republic of Moldova, Tajikistan and Uzbekistan), together with 2 additional countries that have not yet introduced the vaccine (Azerbaijan and Ukraine), participate in the Network. Across the 7 participating countries in the Region, 11 sentinel hospitals enrol children under 5 years of age who have been hospitalized for treatment of diarrhoea in the GRSN, and then collect case-based demographic, clinical and laboratory data on the cases. Together these sites enrolled a larger number of diarrhoea cases in the GRSN in 2016 than the collective sentinel sites of any other WHO region.
Orientation workshop of the National Immunization Technical Advisory Group (NITAG) in Lao PDR

Lauren Franzel-Sassanpour, WHO Country Office, Lao PDR

Location: Vientiane, Lao PDR

Date: 26-30 June 2017

Participants: On 23 June 2017 the Lao People’s Democratic Republic (Lao PDR) Ministry of Health appointed new members to the NITAG. The Lao NITAG is composed of 16 core members and 10 alternate. Areas of expertise represented are in paediatrics, infectious disease, immunology, microbiology, biomolecular biology, disease surveillance, epidemiology and health economics.

Purpose: The training covered the three core modules of the manual: (1) Establishment and mode of operations of an efficient NITAG; (2) Analysis of immunization in the context of health systems and the policy decision making process; and (3) Development of an evidence based recommendation note.

Details: The five-day workshop was organized in the form of plenary presentations, interactive sessions with practical demonstration and working groups. Training materials used were adapted from the NITAG Training Manual developed by the WHO Collaborating Center on Evidence-informed Immunization Policy-making through its SIVAC Initiative project.

The facilitators also provided reference documents from other NITAGs, guidance documents, templates and relevant publications that were used during the practical sessions.

The Lao NITAG developed preliminary versions of its internal procedures manual including procedures for conflict of interest declaration and management. A working group was also set up to prepare a recommendation on rotavirus vaccine introduction.

The NITAG will provide guidance to the National Immunization Programme (NIP) as they prepare applications to introduce human papillomavirus (HPV) and rotavirus vaccines.
PAHO’s XXIV Meeting of PAHO’s Technical Advisory Group (TAG) on Vaccine-Preventable Diseases

Nathalie El Omeiri, Cara Janusz, and Cuauhtemoc Ruiz Matus, Pan American Health Organization

Location: Panama City, Panama

Date: 12-14 July 2017

Participants: PAHO TAG Members, 200 participants from 35 countries in the Americas, including national immunization program managers, national managers of epidemiological surveillance of vaccine-preventable diseases, National Immunization Technical Advisory Group (NITAG) presidents, PAHO immunization staff and representatives from the World Health Organization (WHO), the US Centers for Disease Control and Prevention (CDC), UNICEF, Public Health Agency of Canada, Rotary International, Sabin Vaccine Institute, among other immunization partners and experts.

Purpose: To review the regional progress on selected topics and issue recommendations to address the current and future challenges faced by national immunization programmes in the Region of the Americas.

Details: PAHO convened its regional Technical Advisory Group (TAG) on Vaccine-preventable diseases (VPDs) from 10 to 12 July. The TAG welcomed two new members: Dr Cristiana Toscano from the Federal University of Goiàs, Goiàna, Brazil and Dr Nancy Messonnier, Director of the National Center for Immunization and Respiratory Diseases of the CDC. PAHO’s Assistant Director, Dr Francisco Becerra, and the Vice Minister of Health of Panama opened the meeting with welcoming remarks. Informative sessions and discussions followed, covering the following topics:

- Progress towards achieving the goals set forth in the regional immunization action plan
- Perspectives on the sustainability of immunization programs in the Americas
- Update on polio and progress towards the final phase of eradication
- Update on the yellow fever epidemiological situation, current immunization and response strategies in the region and global initiatives for yellow fever prevention and control
- Pneumococcal conjugate vaccination in the Americas
- Progress towards strengthening immunization data quality and electronic immunization registries in the Americas
- Plan of action for sustaining the elimination of measles and rubella in the Americas
- Proposal for responding to pertussis in the Americas
- Monitoring inequalities in vaccination coverage in the Americas
- Strengthening the decision-making capacity of national immunization programs
- Strengthening management of the cold chain and supply chain in the Americas
- Update on the use of HPV vaccines in the Americas
- Meningococcal vaccine use in the immunization program
- Improving access and timely supply of vaccines/syringes through PAHO’s revolving fund for vaccine procurement.

Under the leadership of Dr. Peter Figueroa (TAG chair), TAG members set out to review and make recommendations for the issues raised. The TAG members acknowledged the contribution from the PAHO Secretariat to the meeting’s success. The 2017 PAHO Immunization Award was given to Dr Fernando Muñoz Porras from Chile. The 2017 TAG full meeting report is available at this link.
Intercountry workshop of the South-East Asia Regional Polio Laboratory Network on poliovirus diagnostic

Sirima Pattamadilok, World Health Organization, Regional Office for South-East Asia (WHO-SEARO)

Location: Nonthaburi, Thailand
Date: 17-21 July 2017
Participants: A total of twenty three people including both participants and facilitators were present in the workshop. There were two (2) participants each from eight polio laboratories situated outside India in the SEA Regional Polio Laboratory Network (PLN) namely (DPR Korea, Bangladesh, Indonesia- Bandung, Jakarta, & Surabaya, Myanmar, Sri Lanka and Thailand). One of two participants from each laboratory was the Technologist/Technician responsible for bench work and other was the Scientist /Supervisor of the National Polio Laboratory.

It was co-facilitated by experts from the United States Centers for Disease Control and Prevention (US CDC), World Health Organization Headquarters (WHO/HQ), and WHO South-East Asia Regional Office.

Purpose: To support the ‘Polio Eradication & Endgame Strategic Plan 2013-2018’ for detection of polioviruses and further enhance capacity of Polio Laboratory Network to:

1. Update information and technology in terms of poliovirus detection
2. Review and discuss current practices for AFP and Environmental Surveillance.
3. Maintain accuracy, precision and consistency in reporting intratypic differentiation results while using the latest version 5.0 of ITD test kit for poliovirus detection.
4. Agree on the new Global PLN (GPLN) diagnostic algorithm and poliovirus handling post OPV2 withdrawal.
5. Share experiences and troubleshooting in the use of the GPLN platform to produce the annual report.

Details: The Polio lab network consists of 16 labs is a backbone of high quality AFP surveillance. During 2016, the Regional polio laboratory network (RPLN) maintained a very high level of competence in accordance with global quality standards as evident from the 101,334 stool specimens tested and timeliness of reporting primary culture results within 2 weeks of receipt of samples as 95%, against the global requirement of ≥80%. Accreditation visits reaffirm that laboratories in the network updated standard operating procedures for safe handling of AFP specimens, viral isolates and met global benchmarks for polio virus diagnostics. However from the proficiency panel testing results in 2016, it was observed that interpreting and reporting of molecular diagnostic modalities for poliovirus needs to be strengthened.

This workshop delved into concepts of good laboratory practices, quality assurance, and performance, as well as maintaining consistency in reporting ITD and VDPV screening assays.

An emphasis on maintaining optimal sensitivity in detecting poliovirus from complex sewage samples helped to strengthen ongoing environmental surveillance.

The practical implementation of bio-risk management practices and adoption of the new algorithm of poliovirus diagnostics in accordance with the ‘WHO global action plan to minimize poliovirus facility-associated risks after type-specific eradication of wild polioviruses and sequential cessation of routine OPV use’ (GAPIII) (after poliovirus type 2 withdrawal) was practiced during hands on training exercises.
Regional meeting of Virologists from the South-East Asia Regional Polio Laboratory Network (PLN)

Sirima Pattamadilok, World Health Organization, Regional Office for South-East Asia (WHO-SEARO)

Location: Bangkok, Thailand

Date: 24-26 July 2017

Participants: A total of thirty three participants from sixteen laboratories of PLN in seven countries of SEAR (Bangladesh, DPRK, India, Indonesia, Myanmar, Sri Lanka and Thailand).

It was co-facilitated by experts from
- the United States Centres for Disease Control and Prevention (US CDC),
- Division of Virology NIBSC, United Kingdom
- WHO Headquarters WHO South-East Asia Regional Office.

Purpose: To enhance capacity of the Regional Polio Laboratory Network to support the ‘Polio Eradication and Endgame Strategic Plan 2013-2018’ for detection of polioviruses/ vaccine derived poliovirus (VDPV) through acute flaccid paralysis (AFP) and environmental surveillance in the Region.

The meeting was structured in the following sessions:
- Progress towards detection and interruption of wild poliovirus (WPV) and VDPV transmission;
- Quality assurance, technical issues and new technologies;
- Environmental surveillance of poliovirus in the Region, expansion, laboratory requirements, successes and challenges;
- Poliovirus laboratory containment;
- Actions and progress of bio-risk management implementation before and after the respective 2016 workshop.

Details: A SEAR polio virologist meeting is held regularly to review progress, update knowledge, and discuss future strategies and advancements in science and technologies related to polio. This included:
- Technical inputs from experts who oriented participants on the evolving poliovirus epidemiological needs, so that all emerging poliovirus strains can be identified using the latest diagnostic modalities, and provided updates on the molecular detection method to comply with poliovirus type 2 containment post-switch.
- Emphasis was placed on strengthening the capacity of polio laboratory staff especially in interpreting and reporting laboratory results, troubleshooting mechanisms and quality assurance. It is envisaged that workloads shall decrease subsequent to inactivated poliovirus vaccine (IPV) introduction, so it is essential to uphold expertise in diagnostics as well as focus on improving the quality of data generated.
- One of the challenges of the targeted expansion of Environmental Surveillance (ES) is in further strengthening capacity for bench work to support rapid expansion of ES, along with the requirement of monitoring indicators to provide a regular review of ES activities.

The sessions on containment and bio-risk management clearly defined the role of the laboratory in implementation of the ‘WHO global action plan to minimize poliovirus facility-associated risk after type-specific eradication of wild polioviruses and sequential cessation of routine OPV use’ (GAPIII).
Decade of Vaccines Economics: Cost of Illness Study (DOVECOI) in Bangladesh: Training for Standardized Data Collection, Data Entry and Data Monitoring Procedures

Dagna Constenla and Md. Jasim Uddin, Johns Hopkins University and icddr,b

Location: Dhaka, Bangladesh

Date: 26-28 July 2017

Participants: Eleven participants including: two field research officers, four field research assistants, and five co-investigators representing IVAC and icddr,b.

Purpose: To train field research officers and field research assistants in the use of data collection instruments and how to conduct a cost of illness study using surveys, and conducting interviews in participating healthcare facilities, pharmacies and households. Field research officers and field research assistants were introduced to the study background and objectives, the data collection tools, and data entry and monitoring procedures. Various role playing activities and case study exercises were used to reinforce standardized data collection, data entry, and data monitoring procedures.

Study team including Line Director, Maternal Neonatal Child and Adolescent Health and Programme Manager, Expended Programme on Immunization (EPI) of the Ministry of Health and Family Welfare of the Government of Bangladesh.

Details: While vaccines are regarded as one of the most cost-effective public health interventions, substantial gaps still exist in the evidence base on their broader economic impact, including cost of illness estimates. The present study aims to fill such data gaps to better understand the value of vaccination, the true economic burden of childhood diseases, and provide evidence to support ongoing investments into interventions targeting childhood diseases.

Recognizing the increasing need for governments to have a strong, robust evidence base for their resource allocation decisions, IVAC and icddr,b investigators met with field research officers and field research assistants in Dhaka, Bangladesh on July 26-28, 2017 to conduct a training on the use of standardized methods for collecting, entering and monitoring cost data in participating healthcare facilities, pharmacies and households in Bangladesh.

For 3 days, two field research officers and four field research assistants learned cost concepts and costing, as well as methods on how to collect resource utilization and cost data from multiple levels of care. A research protocol was developed and several surveys were conducted to collect cost of illness data. A handbook detailing standardized data collection and monitoring procedures was available during the training as were other training materials.

A pilot test to assess the use and applicability of the data collection tools in the Bangladesh context and to evaluate the accuracy of entering data electronically were conducted shortly after training. Data will be entered using tablets and tablet checks and blinded data reviews will be performed regularly to ensure that data integrity, enrollment, and quality control procedures are followed. Results will be available at the end of 2018. Evidence of the cost of treatment and productivity losses is critical to informing policy decisions and securing financial support for vaccination.

This effort is supported by the Bill & Melinda Gates Foundation.
Training on monitoring vaccination coverage and preventive chemotherapy to eliminate lymphatic filariasis

Jean Andre and Mauricio Cerpa, PAHO-Haiti; Marcela Contreras and María Jesús Sánchez, PAHO-Washington, DC; Laure Dumolard, WHO Headquarters; Ana Morice and Ana María Recinos, PAHO (consultants)

Location: Port-au-Prince, Haiti
Date: 31 July-4 August 2017
Participants: Twenty-six people from the neglected diseases and immunization programmes in Haiti that work at the ministry of health, International Medical Aid (IMA), Carter Centre and PAHO.

Purpose: To monitor and analyze vaccination and preventive chemotherapy (PC) coverage for deworming and lymphatic filariasis elimination.

Details: In 2012, PAHO’s Comprehensive Family Immunization and Neglected Diseases units started developing a joint protocol to monitor vaccination and deworming coverage. From this process, six modules were created through a decision algorithm, that can be used jointly or separately to analyze vaccination and Preventive Chemotherapy (PC) coverage.

Since 2015, twelve workshops have been conducted on using this toolkit, training a total of 689 people.

During the workshop, the concepts, advantages and limitations of the methods were discussed, including analysis coverage based on administrative data, Rapid Coverage Monitoring (RCM), Data Quality Self-Assessment (DQS/DQA) and surveys. Practical exercises, PC and vaccination coverage analyses for the country according to time, place, person and opportunity were made, evaluation of numerators and denominators, as well as field work to apply the DQS/DQA and RCM tool door-to-door. The practice on the field was done in the Tabarre community and in the Centre de Santé Sans Lits de la Croix des Missions, in the L’Ouest Department. Based on what was learned, actions to improve analysis and coverage for both programmes were presented. The participants highlighted the interactive and participatory methodology and the field work to apply the tools for coverage monitoring as the most positive of the workshop.
Workshop on Immunization Data Quality in Nicaragua

Jazmina Umaña, Ministry of Health, Nicaragua; Nancy Vasconez, PAHO-Nicaragua; Marcela Contreras and Martha Velandia, PAHO-Washington, DC

Location: Managua, Nicaragua

Date: 15-17 August 2017

Participants:
- Nicaragua’s Expanded Programme on Immunization (EPI)
- Representatives from Nicaragua’s Local Comprehensive Healthcare System (SILAIS)
- Representatives from PAHO-Nicaragua
- Representatives from PAHO-Washington, DC

Purpose: To strengthen the capacity of the EPI teams that are in charge of immunization data quality using modules from the Toolbox For Coverage Monitoring of Integrated Public Health Interventions, developed by PAHO.

Details: Correctly filling out immunization registries that generate administrative coverage has been essential to guiding the management, follow-up and evaluation of activities within immunization programmes. Vaccination coverage indicators must be interpreted based on aspects related to data quality, therefore it is necessary to know their limits and possibilities. Another essential aspect for coverage analysis is disseminating the results in a way that constitutes them as contributing to decision-making aimed at elevating coverage and implementing actions to improve the quality of the analysis.

PAHO’s Immunization Unit and Neglected Diseases Unit have developed a Toolkit for Monitoring the Coverage of Integrated Public Health Interventions to facilitate using concepts and methods that make improving coverage data quality easier, as well as analyzing and using that information. The Toolkit includes modules on topics such as analyzing administrative coverage, rapid coverage monitoring, and evaluating data quality, among others. The tools can be applied in an integrated way or individually, facilitating coverage analysis and monitoring for any health programme.

The data quality module was used in this workshop, aiming to strengthen the capacity of the national EPI team and statistics team from the subnational level or SILAIS. Forty-four representatives from the SILAIS and the national level participated. The workshop was divided into: 1) a theoretical section on data quality, which accounted for Nicaragua’s context, as well as concepts, methodologies, and instruments to monitor and evaluate data quality, and; 2) a practical section which considered a visit to the different levels involved in the flow of immunization-related information, where a thorough data quality exercise identified findings, strengths and opportunities for improvement. These were analyzed and presented in a plenary session, prompting a discussion and generating commitments towards future improvement.

The workshop was well received by participants. An extension of the workshop to local levels and use of the tools acquired were among the conclusions.
Countries from Africa and the Americas share/exchange their experiences with the Electronic Immunization Registry (EIR) information system

Marcela Contreras, Gabriela Felix, PAHO; Catherine Muyawala and Chilunga Puta, PATH; Tove Ryman, BMGF; Dan Ehlman, CDC

Location: Santiago, Chile

Date: 22-25 August 2017

Participants: Those responsible for immunization information systems in the Americas, specifically in Bolivia, Chile, Colombia, Costa Rica and Honduras.

- Those responsible for immunization information systems in Africa, specifically in Ghana, Tanzania and Zambia.
- Pan American Health Organization (PAHO)
- PATH, BID Learning Network
- Bill and Melinda Gates Foundation (BMGF)
- Centers for Disease Control and Prevention (CDC)

Purpose: For selected countries from Africa and the Americas to share their experiences with electronic immunization registries (EIRs) and good practices to effectively manage them.

Details: Experiences and lessons learned were reviewed among participants during the workshop, touching on topics like planning, implementing, monitoring and evaluating the system’s data quality, interoperability, using and analyzing information within the systems and using EIRs in vaccination strategies and future challenges. Additionally, two vaccinating centers and maternity wards in private clinics were visited, as well as two public vaccinating centers, so workshop participants could witness the spectrum of health services in Chile and how the EIR system tool is actively used.

The discussion on lessons learned highlighted the following topics: EIR data quality monitoring, information security, user management, establishment of contracts in the case of external providers, role of electronic clinical files, sustainability planning, the fact that EIRs require time and budgeting to ensure proper implementation of an information system’s entire cycle, user involvement at all levels, the importance of having interoperability guidelines, documenting the analyses that are being done and conduct new analyses, the importance of health personnel committed and empowered, the idea of considering an online and offline version of the tool when designing the EIR, among others.

The shared vision regarding EIR implementation was the main conclusion drawn from the workshop, despite participants coming from different contexts. The lessons learned and shared challenges were established, valuable feedback among countries was provided, and the importance of continuing to promote exchanges of experiences among countries in the Americas and other regions was emphasized.
Workshop on Electronic Immunization Registries (EIRs) in Argentina

Analia Aquino, Susana Devoto, Gustavo Iriarte, Amelia Monti, Martin Saralegui, Emanuel Sarmiento and Patricia Torrilla, Ministry of Health-Argentina; Mirta Magariños, PAHO-Argentina, Marcela Contreras, PAHO-Washington, DC

Location: Buenos Aires, Argentina

Date: 5 September 2017

Participants: Representatives from the Directorate of Control for Immuno-preventable Diseases (DICEI), ministry of health-Argentina; Those responsible for EIR systems in Argentina; PAHO-Argentina; PAHO-Washington, DC.

Purpose: To share the experiences and lessons-learned from implementing and using EIR systems in Argentina, as well as establish the future challenges in the country regarding the use of EIR systems.

Details: The DICEI from the Ministry of Health in Argentina conducted a workshop on implementing and using EIR systems in Argentina, in conjunction with those responsible for the system at all sub-national levels. Argentina has 24 provinces, 12 of which utilize the EIR system developed by the DICEI, named NOMIVAC. The other 12 provinces use their own systems, which should transfer nominal vaccination information to the main repository.

During this workshop, PAHO and Argentina delivered presentations on progress in the Region of the Americas, and in the country, in relation to EIR system implementation and data quality, emphasizing the importance of counting on basic and complex tools, like the EIRs to monitor EPI performance at all levels, to support data analysis and systematic monitoring of immunization quality.

Through teamwork, participants discussed the following central themes: indicators for implementing the system they use, limitations and advantages to having an online/offline EIR system, standards for data quality in a consolidated EIR system and use of the information generated by an EIR.

At the end of the workshop, future challenges regarding the use of EIR systems in Argentina were discussed, where participants highlighted strengthening EPI performance indicator reports in the system, improving motivation for system users, reducing error rates, and stimulating analysis at all levels, among others.
The third Eastern and Southern African Region Immunization Supply Chain Management Workshop

Hailu Makonnen Kenea, United Nations Children’s Fund (UNICEF) Eastern and Southern Africa Regional Office (ESARO)

Location: Kigali, Rwanda

Date: 4-8 September 2017

Participants: Fifty participants representing nineteen Eastern and Southern African Region (ESAR) Countries (Angola, Botswana, Burundi, Eritrea, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Rwanda, Somalia, South Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe) working for Ministries of Health, and representatives from UNICEF, WHO, CHAI, PATH and JSI.

Purpose: To share global and regional updates and country level experiences in ISCM; to build skills in the development of Comprehensive Effective Vaccine Management (cEVM) Improvement Plans (IP) with a particular focus on the National Vaccine Stores, the Stock and Distribution Management processes, as well as the effective use of Key Performance Indicators (KPIs); in developing and implementing the Operational Deployment Plan for infrastructure investment through the Gavi Cold Chain Optimization Platform; to share experiences on implementing system design activities; a site visit to the Central Vaccine Store in Kigali; and experiences in setting up effective oversight and technical groups such as National Logistics Working Groups (NLWGs).

Details: Recognizing key achievements as well as persisting challenges faced by ESAR countries for the past one year, UNICEF, in collaboration with WHO and Gavi, organized the 3rd ISCM Regional Workshop in Kigali from 3rd to 8th September 2017. The workshop intended to support ESA countries and their in-country technical partners to keep the momentum in the area where good progress have been achieved and to address the weaknesses identified through various interventions to ensure further progress in key ISCM priority areas, which included infrastructure, system, and HR capacity improvements at country level towards sustainable development.

Post-workshop evaluation and feedback that was generated demonstrated an increase in knowledge and skills in key thematic areas covered during the workshop. The workshop was adequately supported by 13 facilitators coming from UNICEF & WHO Headquarters, UNICEF ESARO & Supply Division, Gavi, the Global Alliance, and JSI.

The workshop provided an opportunity to participants’ to share experiences, and to conduct a field visit to the National Vaccine Store to connect with reality in terms of Good Warehouse Practices.

30 participants successfully completed an ISCM learning course on Agora, UNICEF’s global hub for learning and development. The workshop renewed the motto “Let us make the National Vaccine Store meet the 80% scores EVM requirement”.

Participants with UNICEF Representative & the MoH officials, 04 Sep 2017
Meeting of the Regional Polio Laboratory Network

**Gloria Rey-Benito** and Andrea Villalobos, Pan American Health Organization

**Location:** Santiago, Chile  
**Date:** 11-12 September 2017  
**Participants:** Polio laboratory representatives from Argentina, Brazil (two labs), Canada, Colombia, Caribbean sub-region, Chile, Mexico, United States, and Venezuela attended the meeting. Representatives from the CDC, Polio and Picornavirus Laboratory Branch (PPLB) and Global Immunization Division (GID), WHO’s Global Polio Laboratory Network (GPLN) coordinator, and PAHO’s Regional Polio Laboratory Network (RPLN) also participated in the meeting.

**Purpose:** To review:
1. Recent advances in global polio eradication with an emphasis on laboratory support to the programme.
3. Progress, achievements and challenges in poliovirus containment in the network laboratories and adaptation of procedures in the GPLN.

**Details:** Status updates on the global and regional Polio Laboratory Network were provided by GPLN’s coordinator and the PAHO Regional-VPD Laboratory Network, both highlighting the critical importance of maintaining the integrity and functionality of surveillance for poliovirus as an essential function to achieve and sustain a polio-free world. All polio laboratories should follow WHO-recommended procedures for detecting and characterizing polioviruses (viral isolation [VI], intratypic differentiation [ITD] and sequencing [SEQ]) from stool and sewage samples collected from cases of acute flaccid paralysis and the environment, respectively.

Overall performance indicators to detect and characterize poliovirus remain good. The performance of the Region of the Americas until 2016 showed that out of the 11 polio laboratories in the Region, all have installed capacity to perform VI/ITD and four have installed SEQ capacity. Considering the results of the performance indicators and results of the proficiency testing panels, the accredited laboratories for 2016 were: 11/11 for VI, 6/11 for ITD and 3/4 for SEQ.

For the GAPIII, two Bio-risk Management trainings and one Containment Certification Scheme (CCS) auditors training have been implemented at the regional level. Poliovirus Essential Facilities (dPEFs) must submit applications for the Certificate of Participation to National Authorities of containment (NAC) according to the CCS.

From 13-15 September 2017, after the RPLN meeting and in cooperation with the Chilean Institute of Public Health (ISP), PAHO and CDC prepared a workshop on poliovirus real-time reverse transcription polymerase chain reaction (RT-PCR) for ITD 5.0 to provide RPLN training in intratypic differentiation assays as recommended by the GPLN, strengthening laboratory surveillance of poliovirus in the Region of the Americas.
Resources

Maternal Immunization Safety Monitoring in Low- and Middle-Income Countries: A Roadmap for Program Development

Eve Lackritz and Maria Stephanach, Global Alliance to Prevent Prematurity and Stillbirth (GAPPS), Seattle

Maternal immunization holds the promise of reducing morbidity and mortality among pregnant women and infants, particularly in LMICs where there is the greatest burden of vaccine-preventable disease and the most limited access to basic health services. Global efforts are underway to develop, evaluate, and implement new vaccines targeted specifically for use in pregnant women in LMICs. As these efforts go forward, it is a critical time to formulate a comprehensive approach to monitoring the safety of maternal immunizations in LMICs and thereby ensure programme success and public confidence.

Monitoring safety of maternal immunizations in LMICs presents a number of unique challenges. Vital registries and health reporting systems for pregnant women and infants are often inadequate, often lacking the sensitivity and accuracy needed to track even severe complications of pregnancy and adverse birth outcomes such as preterm birth, fetal death, and congenital malformations. Pharmacovigilance systems that identify, evaluate, and respond to potential adverse events following immunization (AEFI) are often rudimentary in LMICs.

This report, developed with support from the Bill & Melinda Gates Foundation and input from a large, multidisciplinary group of experts, summarizes the literature and existing programmes in pharmacovigilance and MNCH surveillance in LMICs, identifies gaps, and outlines a roadmap for programme development. The report was developed with a broad array of stakeholders from industry, regulatory agencies, public health organizations, vaccine programmes, aid organizations, country governments, epidemiologists, and clinical researchers.

The report outlines an approach for building on existing data systems for monitoring health of pregnant women and their offspring, and adaptation of pharmacovigilance programmes to address the unique events specific to maternal immunization. The report includes recommendations and an implementation plan that summarize the important role of leadership and mobilization of financial and human resources for safety monitoring in support of maternal immunization programmes in LMICs.

Infographics on safe injection

Hayatee Hasan, WHO Headquarters

An unsafe injection could put you at risk of getting a life-threatening infection. Find out what makes an injection unsafe, who is at risk with this new WHO infographic. To see more WHO infographics, visit this website.
New WHO data on immunization coverage estimates on hepatitis B infections
Hayatee Hasan, WHO Headquarters

A new data dashboard has been published by WHO today that provides estimates of hepatitis B infections at the global regional and country levels and shows how the data has changed since hepatitis B vaccination was introduced.

The analysis was carried out in children under 5 years of age and in the general population. The data provides the best estimates on hepatitis B infections in the 194 WHO Member States and aims to facilitate the comparability across countries and over time.

WHO’s estimates uses a methodology reviewed by the Immunization and Vaccines Related Implementation Research Advisory Committee and was also presented by the Strategic Advisory Group of Experts (SAGE) on immunization.

In an updated hepatitis B vaccines position paper published in July 2017, WHO provided updated information on hepatitis B vaccines. The recommendations concern the target groups for vaccination and the appropriate schedules. In particular, the recommendations stress the importance of vaccination of all infants at birth as the most effective intervention for the prevention of hepatitis B virus-associated disease worldwide.

Reaching all children with at least 3 doses of hepatitis B vaccine should be the standard for all national immunization programmes.

National strategies to prevent perinatal transmission should ensure high and timely coverage of the birth dose through a combination of strengthened maternal and infant care at birth with skilled health workers present to administer the vaccine, and innovative outreach strategies to provide vaccine for infants born at home.

Read more on hepatitis B infections dashboard.
Read the updated hepatitis B vaccines position paper.

Related links

Global Hepatitis Report 2017
Estimations of worldwide prevalence of chronic hepatitis B virus infection
World Hepatitis Day 2017: Eliminate hepatitis
World Hepatitis Summit 2017
Engagement of private nongovernmental health providers in immunization service delivery

Hayatee Hasan, WHO Headquarters

In September 2017, WHO issued a guidance note for national immunization programmes highlighting various considerations and recommendations to support the optimal engagement of nongovernmental (private) vaccination providers in the effective delivery of immunization programmes.

Nongovernmental private vaccination providers come from a diverse range of sectors that include both for-profit and not-for-profit civil society organizations (CSOs), nongovernmental organizations (NGOs) and faith-based organizations (FBOs), and have varying roles in the delivery of vaccination by national immunization programmes, and in the provision of other immunization-related services. For example, health education, advocacy, awareness raising, demand creation, resource mobilization, and vaccine-preventable disease surveillance.

Regardless of whether the government sector proactively engages with the nongovernmental sector, it is likely that nongovernmental organizations and providers are already playing a role in immunization services in most, if not all, countries.

Many national immunization programmes have longstanding existing arrangements with nongovernmental (particularly not-for-profit) providers to provide vaccination services and such arrangements facilitate collaboration between government and nongovernmental sectors.

Read the guidance note.

Immunization Highlights: European Vaccine Action Plan progress report for 2016

Catharina de Kat, WHO Europe

This annual report for 2016 provides an overview of progress made in the WHO European Region towards the vision, goals and objectives of the European Vaccine Action Plan 2015–2020. It covers the progress and challenges of the Member States of the European Region and highlights the support provided to them by the WHO Regional Office for Europe’s Vaccine-preventable Diseases and Immunization programme.
# Calendar

## 2017

### October

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>2-3</td>
<td>Global Framework for Research on Rotavirus vaccines</td>
<td>Geneva, Switzerland</td>
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<tr>
<td>4-5</td>
<td>Gavi High Level Review Panel (HLRP)</td>
<td>Geneva, Switzerland</td>
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<tr>
<td>9-12</td>
<td>Regional Committee for the Eastern Mediterranean</td>
<td>Islamabad, Pakistan</td>
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<tr>
<td>9-13</td>
<td>Regional Committee for the Western Pacific</td>
<td>Brisbane, Australia</td>
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<tr>
<td>11-12</td>
<td>Sixth Global Vaccine Safety Initiative (GVS) Meeting</td>
<td>Kuala Lumpur, Malaysia</td>
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<tr>
<td>16-20</td>
<td>Fifteenth TechNet Conference</td>
<td>Cascais, Portugal</td>
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<tr>
<td>17-19</td>
<td>Strategic Advisory Group of Experts (SAGE) on Immunization</td>
<td>Geneva, Switzerland</td>
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<tr>
<td>23-25</td>
<td>Polio Committee meeting</td>
<td>TBD</td>
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<tr>
<td>24-25</td>
<td>EURO National EPI Programme Managers' meeting</td>
<td>Budva, Montenegro</td>
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<tr>
<td>24-27</td>
<td>Data Partners meeting</td>
<td>Cascais, Portugal</td>
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<tr>
<td>26-27</td>
<td>EURO Technical Advisory Group of Experts (ETAGE)</td>
<td>Budva, Montenegro</td>
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### November

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<tr>
<td>10-24</td>
<td>Joint EURO MR Surveillance &amp; Lab Network Meeting</td>
<td>Belgrade, Serbia</td>
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<td>11-14</td>
<td>EMRO National EPI Managers' meeting</td>
<td>Amman, Jordan</td>
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<tr>
<td>13-17</td>
<td>Global Rotavirus and IB-VPD Surveillance Network Meetings</td>
<td>Geneva, Switzerland</td>
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<td>21-23</td>
<td>AFRO E&amp;S Regional Working Group</td>
<td>Addis Ababa, Ethiopia</td>
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### December

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<tr>
<td>5-7</td>
<td>AFRO Regional Immunization Technical Advisory Group (RITAG) meeting</td>
<td>Johannesburg, South Africa</td>
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<tr>
<td>10-13</td>
<td>30th Intercountry Meeting of National Managers of the Expanded Programme on Immunization and 17th Intercountry Meeting on Measles/ Rubella Control and Elimination</td>
<td>Oman</td>
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<tr>
<td>11-12</td>
<td>Evaluating Therapeutics during Public Health Emergencies</td>
<td>Netherlands</td>
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<td>14</td>
<td>EMRO Regional Technical Advisory Group on Immunization (RTAG)</td>
<td>Oman</td>
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<tr>
<td>15-16</td>
<td>EMRO Regional Working Group meeting</td>
<td>Oman</td>
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### 2018

### January

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<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>18-27</td>
<td>27th Executive Board</td>
<td>Geneva, Switzerland</td>
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### March

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<th>Date</th>
<th>Event</th>
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<tr>
<td>20-22</td>
<td>Global Vaccine and Immunization Research Forum (GVIRF)</td>
<td>Bangkok, Thailand</td>
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Links

Organizations and Initiatives

- American Red Cross
  Child Survival
- Agence de Médecine Préventive
  Africhol
  EpivacPlus
  LOGIVAC Project
  National Immunization Technical Advisory Groups Resource Center
  SIVAC
- Centers for Disease Control and Prevention
  Polio
  Global Vaccines and Immunization
- Johns Hopkins
  International Vaccine Access Center
  VIEW-hub
- JSI
  IMMUNIZATIONBasics
  Immunization Center
  Maternal and Child Health Integrated Program (MCHIP)
  Publications and Resources
  Universal Immunization through Improving Family Health Services (UI-FHS) Project in Ethiopia
- PAHO
  ProVac Initiative
- PATH
  Better Immunization Data (BID) Initiative
  Center for Vaccine Innovation and Access
  Defeat Diarrheal Disease Initiative
  Vaccine Resource Library
  Malaria Vaccine Initiative
  RHO Cervical Cancer
- Sabin Vaccine Institute
  Sustainable Immunization Financing
- UNICEF
  Immunization
  Supplies and Logistics
- USAID
  Maternal and Child Health Integrated Program
- WHO
  Department of Immunization, Vaccines & Biologicals
  New and Under-utilized Vaccines Implementation
  ICO Information Centre on HPV and Cancer
  Immunization financing
  Immunization service delivery
  Immunization surveillance, assessment and monitoring
  SIGN Alliance
- Other
  Coalition Against Typhoid
  Confederation of Meningitis Organisations
  Dengue Vaccine Initiative
  European Vaccine Initiative
  Gardasil Access Program
  Gavi the Vaccine Alliance
  International Association of Public Health Logisticians
  International Vaccine Institute
  Measles & Rubella Initiative
  Multinational Influenza Seasonal Mortality Study
  Network for Education and Support in Immunisation (NESI)
  TechNet-21
  Vaccines Today

WHO Regional Websites

- Routine Immunization and New Vaccines (AFRO)
- Immunization (PAHO)
- Vaccine-preventable diseases and immunization (EMRO)
- Vaccines and immunization (EURO)
- Immunization (SEARO)
- Immunization (WPRO)

UNICEF Regional Websites

- Immunization (Central and Eastern Europe)
- Immunization (Eastern and Southern Africa)
- Immunization (South Asia)
- Immunization (West and Central Africa)
- Child survival (Middle East and Northern Africa)
- Health and nutrition (East Asia and Pacific)
- Health and nutrition (Americas)

Newsletters

- Immunization Monthly update in the African Region (AFRO)
- Immunization Newsletter (PAHO)
- The Civil Society Dose (GAVI CSO Constituency)
- TechNet Digest
- RotaFlash (PATH)
- Vaccine Delivery Research Digest (Uni of Washington)
- Gavi Programme Bulletin (Gavi)
- The Pneumonia Newsletter (Johns Hopkins Bloomberg School of Public Health)