IMMUNIZATION HIGHLIGHTS 2013

World Health Organization
Regional Office for Europe
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Abbreviations

CCEM  Cold Chain Equipment Manager

CDC  United States Centers for Disease Control and Prevention

ECDC  European Centre for Disease Prevention and Control

ETAGE  European Technical Advisory Group of Experts

EQA  External quality assessment

GAVI  Global Alliance for Vaccines and Immunization

Hib  Haemophilus influenzae type b

HPV  Human papillomavirus

IBD  Invasive bacterial diseases

IPV  Inactivated polio vaccine

NITAG  National Immunization Technical Advisory Group

NIP  National immunization programmes

NUVI  New and underutilized vaccine implementation

NVC  National Verification Committee for Measles and Rubella Elimination

OPV  Live attenuated oral polio vaccine

PCV  Pneumococcal vaccine

RC  WHO Regional Committee for Europe

RCC  European Regional Commission for the Certification of the Eradication of Poliomyelitis

RVC  European Regional Verification Commission for Measles and Rubella Elimination

SIA  Supplemental immunization activity

TIP  Tailoring immunization programmes

UNICEF  United Nations Children’s Fund

VPI  Vaccine-preventable Diseases and Immunization Programme of the WHO Regional Office for Europe

WPV1  Wild poliovirus type 1


**Introduction**

The WHO Regional Office for Europe is dedicated to improving public health, reducing health inequalities and ensuring equitable access to high-quality health systems, as envisioned in the Region’s health policy framework Health 2020.

For the Vaccine-preventable Diseases and Immunization Programme (VPI), this means striving together with partners and Member States to ensure that every person in every community in the Region has a fair chance of living free from vaccine-preventable diseases.

Despite the wide diversity in health systems across our vast Region, all 53 Member States have agreed to the priority goals of eliminating measles and rubella and maintaining polio-free status. The Region faced serious threats to the achievement of these goals in 2013, with outbreaks of measles in many countries, a large outbreak of rubella in Poland and environmental detection of wild poliovirus in Israel.

Outbreaks are a disturbing reminder of fundamental weaknesses in immunization programmes that can over time lead to larger-scale threats to public health. In addition to working closely with countries to contain outbreaks, the WHO Regional Office for Europe provided extensive technical support in 2013 to help Member States:

- strengthen their immunization services, focusing particularly on underserved populations and identifying barriers to immunization;
- increase outbreak preparedness and response, including closing immunity gaps;
- establish or strengthen national immunization technical advisory groups (NITAGs);
- improve disease surveillance and strengthen laboratory networks; and
- introduce new vaccines and prepare for the introduction of others, such as against pneumococcal infection (PCV), meningitis C, rotavirus and human papillomavirus (HPV).

The European Region is at a pivotal point for immunization: traditionally well-functioning immunization programmes are challenged by destabilizing factors, such as vaccine refusal and health care system restructuring, while several middle-income countries are facing “graduation” from donor funding for vaccines, which could threaten future progress.

Nothing short of an all-out effort, by WHO, Member States and partners will ensure that the Region stays on track to meet its priority immunization objectives. The urgency of the current situation was apparent at the September 2013 meeting of the WHO Regional Committee for Europe (RC), during which immunization topics received extensive attention and support from Member States: in a pre-meeting on poliomyelitis (polio), a session on the regional implications of the Global Vaccine Action Plan1 and the Polio Eradication and Endgame Strategic Plan, and a plenary session in which VPI presented its Package for accelerated action 2013–2015 to eliminate measles and rubella.2

**Vision for the future**

In line with the renewed commitment expressed by Member States at both the RC and the World Health Assembly in 2013, the WHO Regional Office is developing a longer-term vision for immunization based on the Global Vaccine Action Plan for the Decade of Vaccines (2011–2020). Consultations with Member States and partners on a Regional Vaccine Action Plan 2015–2020 began in 2013 and will continue in 2014, leading up to presentation of the final Plan at the 64th session of the RC in September 2014.

Development of the Plan will in itself bring us closer to our immunization goals, by strengthening ties with and among Member States, drawing attention and resources to the specific challenges facing the European Region and providing a framework with which to monitor and evaluate our joint progress over the coming decade.

**Dr Dina Pfeifer**  
Programme Manager  
Vaccine-preventable Diseases and Immunization (VPI) Programme  
WHO Regional Office for Europe
About the VPI Programme

The Vaccine-preventable Diseases and Immunization Programme at the WHO Regional Office for Europe provides policy guidance and technical assistance to countries to maximize equitable access to vaccines of assured quality, including new immunization products and technologies.

Over 20 dedicated professionals at the Regional Office in Copenhagen as well as in several country offices carry out the Programme’s work in close collaboration with national authorities, societies and associations and our partners, including the Bill and Melinda Gates Foundation, Directorate-General for Health and Consumers (DG SANCO), European Centre for Disease Prevention and Control (ECDC), GAVI Alliance, Measles and Rubella Initiative, United States Centers for Disease Control and Prevention (CDC), United Nations Children's Fund (UNICEF), United Nations Foundation and WHO headquarters.

Most Programme activities focus on diseases with elimination and eradication targets: controlling the current measles and rubella outbreaks, achieving measles and rubella elimination by 2015 and sustaining the Region’s polio-free status.

Achieving elimination and immunization targets depends to a large extent on countries’ capacities to monitor the spread of disease. VPI therefore supports countries in strengthening surveillance for vaccine-preventable diseases. It also provides technical support and guidance for expanding immunization systems and schedules to include new and underutilized vaccines.
1. Status of measles and rubella in the WHO European Region and progress towards elimination
While national-level coverage with a first dose of measles- and rubella-containing vaccines is generally high throughout the European Region, subnational and second dose coverage rates are still unacceptably low in many Member States. Moreover, immunity gaps in certain subpopulations persist, providing sufficient opportunity for this highly contagious disease to find susceptible individuals once it is re-introduced into a country.

After historically low incidence in 2007–2009, measles has resurfaced: over half of Member States in the WHO European Region reported measles cases for 2013, amounting to a total of 31,685 cases.\(^3\) Nine countries reported over 1000 cases each, with the highest incidence rate (1830 per million population) reported by Georgia.

Most of these outbreaks occurred in the general population, however outbreaks in some Member States affected particular groups. An outbreak of over 2000 reported cases in the Netherlands, for example, affected mostly unvaccinated orthodox Protestants. With over a third of cases across the Region aged 20 years and older in 2013, it is clear that adults not targeted when measles vaccination programmes were first implemented in their countries more than 20 years ago have emerged as a susceptible group in many Member States.

The WHO Regional Office worked intensely throughout the year to help countries prevent or control measles outbreaks. Among other activities, a meeting on an outbreak in the Caucasus was held in Tbilisi, Georgia, on 10–11 July 2013, to coordinate response efforts with representatives from the ministries of health of Armenia, Azerbaijan and Georgia and partners (CDC, Rostropovich-Vishnevskaya Foundation (RVF) and UNICEF). After the meeting, supplementary immunization activities (SIAs) were initiated in Azerbaijan and Georgia, which were both significantly affected by the outbreak. A follow-up meeting in August with Georgian experts looked at macroplanning of the SIAs, including dispersion of immunization teams in the geographically distanced/hard-to-reach territories. A review of the response effort later conducted by the Regional Office pointed to lessons learnt and the need for continuation and extension of SIAs targeting other susceptible cohorts to prevent further outbreaks.

\[\text{Increase of cases between 2007 and 2013: 348%}\]

Measles

“The 2015 deadline is fast approaching and if we miss children today, they will get measles tomorrow.”

Zsuzsanna Jakab and David Salisbury,

Significant progress has been made in reducing the burden of rubella and congenital rubella syndrome in the WHO European Region in the past decade: between 2001 and 2010, the Region achieved a 99% decline in reported cases. In contrast to the wide geographic spread of measles in 2013, 98% of the Region’s 39,367 reported rubella cases for 2013 were limited to just one country (Poland). The large majority of these cases were males aged 15–29, reflecting the country’s policy in the period 1989 to 2003 of vaccinating only girls for rubella.

Progress toward elimination of measles and rubella

In 2010 all Member States in the European Region established 2015 as the target date for elimination of measles and rubella. The Framework for the verification process in the WHO European Region lays out the methodology and reporting requirements for this process, including establishment (in 2012) of the Regional Verification Commission (RVC) as the independent verification authority. Each Member State is also mandated by the Framework to establish a national verification committee (NVC) and to submit annual reports to the RVC on their progress toward elimination. The Region as a whole can be certified as having eliminated measles and rubella after three years of confirmed interrupted transmission in every Member State.

The Regional Office conducted a series of subregional meetings between October 2012 and June 2013 (in part with ECDC) to brief all Member States on the verification process, establishment of NVCs and reporting requirements.

At its second annual meeting on 28–30 October 2013, the RVC reviewed reports submitted by 35 NVCs on the period 2010–2012, concluding that 15 Member States had documented interruption of measles transmission and 18 Member States had documented interruption of rubella transmission.

Package for accelerated action

With less than half of Member States having documented interruption so far, and a resurgence of measles and rubella cases in the past few years, it has become clear that “business as usual” will not be sufficient to reach the elimination target. In response to the urgent need to act, the Regional Office developed a Package for accelerated action 2013–2015, which was adopted by the 63rd session of the WHO Regional Committee in September 2013. The Package identifies areas in which the Regional Office is scaling up its technical support to Member States as the Region approaches the elimination target date. It also calls for intensified efforts by all those involved, particularly politicians, public health authorities, health care workers and international partners.
resulting from the extra efforts of WHO and other stakeholders will be measured based on a set indicators and incremental milestones.

To strengthen joint action, WHO Regional Director for Europe, Zsuzsanna Jakab, hosted a high-level advocacy meeting in Copenhagen, Denmark, on 31 October 2013 for partners and select Member States. The meeting facilitated consensus on priority approaches to reach elimination and resulted in renewed commitment to implement identified strategies.

In support of the regional effort, new tools and information sources for Member States were published, including Guidelines for measles and rubella outbreak investigation and response in the WHO European Region\(^6\), Guidance on conducting serosurveys in support of measles and rubella elimination in the WHO European Region\(^7\), and regular epidemiological and laboratory data summaries and analyses on measles, rubella, polio and other vaccine-preventable diseases (WHO EpiData and WHO EpiBrief).\(^8\)

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**MEASLES AND RUBELLA 2013**

**Key achievements:**

- Strengthening surveillance in key Member States
- Initiation of verification process for measles and rubella elimination
- Technical support for outbreak response in affected Member States
- Publications of guidance and tools to support Member States’ elimination efforts

**Key challenge:**

Maintaining Member States’ commitment to elimination target

**Priorities for 2014:**

- Continuing RVC and NVC activities for the verification process
- Establishment of NVCs in remaining Member States
- Accelerating action by all stakeholders to close immunity gaps

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2. Sustaining the Region’s polio-free status
Continued circulation of wild poliovirus in any country threatens the polio-free status of every country. Detection of wild poliovirus in environmental samples in Israel, the West Bank and Gaza Strip, as well as polio outbreaks seen in previously polio-free areas (Syrian Arab Republic, Horn of Africa and Cameroon) in 2013, served as a stark reminder of the need for constant vigilance in the European Region through a combination of high immunization coverage, quality surveillance, risk assessment and mitigation activities.

Israel

Immediately after being alerted in May 2013 that wild poliovirus type 1 (WPV1) had been detected in the sewage in the Southern District of Israel, the Regional Office worked closely with Israel’s health authorities to initiate a rapid and effective response. In June, a team of international polio experts, coordinated by WHO, completed a five-day mission to Israel to review environmental sampling results, data on population immunity against polio and initial response measures conducted by health authorities. Based on their findings, the team provided recommendations for further action, including SIAs with live attenuated oral polio vaccine (OPV) as the main tool to interrupt wild poliovirus transmission. WHO experts also worked with Israel’s national polio laboratory to determine the origin of the wild virus, which was established to be of the South Asian genotype. To date, no clinical cases of poliomyelitis have been reported.

Following the mission, epidemiological and environmental surveillance for poliovirus intensified across the country. Despite high national coverage with inactivated polio vaccine (IPV), several rounds of SIAs were initiated, starting with a nationwide immunization campaign targeting children up to 10 years of age with OPV. These efforts were accompanied by a broad communication campaign, which secured public participation and support for the effort. The participation of the Minister of Health and the Prime Minister in the campaign contributed significantly to the campaign’s success.

The Regional Office collaborated throughout the campaign with international partners and national authorities to ensure the timely and sufficient supply of vaccines, monitor progress, continually assess the risk of cross-border transmission and evaluate the impact of the response measures.

By October 2013, 79% of the targeted children were vaccinated nationwide, and 88% were vaccinated in the Southern District.

Risk assessment

In June 2013, the Regional Certification Commission (RCC), for which the Regional Office serves as Secretariat, reviewed poliovirus surveillance indicators, population immunity indicators and immunization system sustainability in each of the 53 Member States of the Region to assess the risk of continued transmission following importation of poliovirus. The Commission deemed 18 countries to be at intermediate risk and four (Bosnia and Herzegovina, Georgia, Romania and Ukraine) to be at high risk of transmission following importation.

The situation in Ukraine is particularly critical, as national polio vaccination coverage levels fell dramatically in 2011 and 2012 to below 80% nationally (and to below 60% in some areas of the country). WHO Regional Director Zsuzsanna Jakab called for a public health response to rapidly and successfully curb the risk of a polio outbreak. WHO subsequently recommended that Ukraine carry out two rounds of nationwide supplementary polio vaccination campaigns to all children born since January 2008.

“We have reviewed the evidence and the steps that have been taken to date. We are thankful to the Government of Israel for their openness and we are fully committed to supporting their efforts.”

Dr Dina Pfeifer, Programme Manager for Vaccine-preventable Diseases and Immunization, concluding the WHO-led mission in Israel, 26 June 2013
Risk mitigation

Turkey
On 17 October 2013 wild poliovirus type 1 (WPV1) was detected in the Syrian Arab Republic. Since that date a comprehensive outbreak response has been implemented across the region, including all bordering countries. As part of the response, public health authorities in Turkey scaled up the surveillance of cases of acute flaccid paralysis and initiated a vaccination campaign with two rounds of OPV to be completed by the end of 2013. All children under five years of age in selected provinces of the south-eastern part of the country irrespective of their vaccination status were targeted for immunization. Syrian citizens under temporary protection in Turkey were also included in the SIAs. By the end of 2013, over 1.5 million doses of OPV were administered to Turkish and Syrian citizens, predominantly children up to five years of age, in 11 provinces of Turkey that border the Syrian Arab Republic.

In addition to working closely with national authorities to control the situation and prevent the spread of polio into Turkey, WHO established a field presence in the south-eastern province of Gaziantep, Turkey at the border of the Syrian Arab Republic to provide additional support to the response.
Polio outbreak preparedness
To increase countries’ preparedness and capacity to respond to a potential outbreak, the Regional Office prompted two Polio Outbreak Strategic Exercises (POSE) in 2013: a national exercise in the United Kingdom in February, and a multicounty exercise for Armenia, Azerbaijan, Georgia and Ukraine on 15–16 May 2013. The latter was also attended by an observer from the Russian Federation, as well as experts from European polio reference laboratories, WHO, UNICEF, the United States Agency for International Development (USAID) and the RCC.

In addition, when a large number of travellers from Israel increased the potential risk of WPV introduction from Israel in September 2013, a detailed Contingency Plan for Responding to the Polio Outbreak Threat in Ukraine and a Polio Outbreak Communications Framework were developed by the Regional Office and UNICEF for further adaptation and implementation in the country.

To review polio preparedness in European Union countries, the Regional Office organized a meeting with various European partners in December 2013. The informal discussion with representatives of CDC, ECDC, the European Commission’s Directorate-General for Health and Consumers, European Medicines Agency, UNICEF and WHO headquarters focused specifically on the assessment of risk and risk mitigation methodologies, but also on strengthening surveillance and issues related to vaccine supply. A primary concern is the large numbers of Member States that have not secured vaccines for outbreak response and that do not have formal national preparedness plans.

Other notable polio-related activities conducted by the Regional Office in 2013 included country assessments and review of country preparedness plans, independent polio surveillance reviews and technical assessment of polio laboratories (all of which passed the WHO proficiency test in 2013).

POLIOMYELITIS  2013

Key achievement:
Maintenance of Region’s polio-free status

Key challenge:
Ongoing threat to the Region posed by polio outbreaks in other WHO regions and inadequate immunization coverage in some areas

Priorities for 2014:
Improving outbreak response planning and capacities
Closing of immunity gaps
3. Strengthening national immunization systems
Supporting the establishment of advisory bodies
In 2013, the Regional Office provided technical and consultancy support to low- and middle-income countries in establishing or strengthening national immunization technical advisory groups (NITAGs), building capacity of national experts, and exchanging best practices with long-functioning NITAGs. The Office additionally provides ongoing support to countries in facilitating evidence-based decision-making on introduction of new vaccines.

The Regional Office conducted three regional training workshops for 14 Member States in 2013, as a result of which NITAGs were established in Azerbaijan, Kazakhstan, Republic of Moldova, Ukraine and Uzbekistan. Other countries (Albania, Hungary and Serbia) made the decision to establish NITAGs in 2014.

To facilitate linkages between NITAGs and the European Technical Advisory Group of Experts (ETAGE), NITAG members from Armenia, Azerbaijan, Georgia, Republic of Moldova, Ukraine and Uzbekistan attended the ETAGE meeting in October 2013 and an ETAGE member participated in the regional training workshops.

Achieving financial sustainability of national immunization programmes
Twenty countries in the world are currently in the process of scaling down financial support received from the GAVI Alliance for new and underused vaccines, based on a Gross National Income per capita that exceeds the GAVI eligibility threshold. Six of these “graduating” countries are located in the European Region (Armenia, Azerbaijan, Georgia, Republic of Moldova, Ukraine and Uzbekistan).

Together with GAVI and other partners, WHO is dedicated to providing technical support graduating countries throughout this process. The Regional Office provides assistance and training for various aspects of strategic planning: strengthening countries’ ability to mobilize additional funding from domestic resources, increasing efficiency of national immunization programmes and strengthening national vaccine procurement and regulation systems to enable access to quality-assured vaccines at an optimum and affordable price.

In this context, multipartner missions have been conducted to Armenia, Azerbaijan, Georgia, Republic of Moldova and Uzbekistan to assess graduation-related challenges; and graduation action plans have been developed to address identified challenges in 2012 and 2013. Technical assistance has been provided to graduating countries in implementing the graduation action plans, and implementation is being monitored by the Regional Office on a quarterly basis. The ultimate purpose of this process is to sustain immunization achievements in graduating countries after graduation from donor support.

Vaccine procurement and regulation
WHO supports increasing efficiency of national immunization programmes by strengthening national vaccine procurement and regulation systems, to enable access to quality-assured vaccines at an affordable price. The Regional Office organized a subregional training workshop, with support from WHO headquarters and UNICEF, for participants from 13 low- and middle-income countries, representing immunization programme, vaccine procurement, vaccine financing and regulation areas. In addition, to empower individual countries in negotiating with vaccine manufacturers, WHO supports vaccine price transparency and data sharing among countries. The Regional Office and many of its Member States are therefore actively involved in the global Vaccine Product, Price and Procurement (V3P) Project, whose aim is to create a comprehensive information source for vaccine prices to help public procurement agencies make more informed decisions on the procurement of vaccines.
The Vaccine Product, Price and Procurement (V3P) Project

The lack of reliable, accurate and neutral vaccine product, price and procurement information has been identified as a key obstacle for both GAVI-graduating and middle-income countries in making informed decisions regarding forecasting, budgeting, and sustainable financing of new and priority vaccines.

Launched in September 2011, the V3P Project is a three-year initiative led by WHO and funded by the Bill and Melinda Gates Foundation. While open to the participation of any country, V3P targets especially middle-income countries, many of which face challenges in the sustainable introduction of new and priority vaccines.

The Project is building a publicly available and sustainable information mechanism that will include a database allowing for the collection, collation, validation and dissemination of price and procurement information provided by countries and procurement partners.

Benefits for countries participating in V3P

The V3P database allows users to make direct comparisons of vaccine prices between countries. Improved market knowledge and understanding of the specific factors influencing vaccine prices provides the potential for significant cost savings.

Implementation in the European Region

The European Region has been actively involved in the V3P project. In 2012-2013, the Regional Office conducted documentation missions in Georgia, Latvia and the Republic of Moldova, and 18 countries provided vaccine pricing data through the annual Joint Reporting Form. Most country representatives have expressed interest in and support for the V3P project.

Supporting immunization systems to meet the demands of expanding immunization programmes

Availability of sufficient immunization supplies (vaccines, injection devices and equipment for safe disposal of immunization-related waste) at the right time, at the right place and in the right condition is essential for reaching vaccination coverage goals. Immunization supply chains and service delivery systems have become more complex, involving multiple products, entities and responsibilities from both public and private sectors. This is accompanied by new risks and challenges, particularly in low- and middle-income countries, in ensuring safe and timely distribution of vaccines to the final point of use.

The Regional Office supports Member States by building regional and in-country expertise:

- to assess national vaccine supply chains using the WHO Effective Vaccine Management assessment tool and develop evidence-based improvement plans;
- to institutionalize best vaccine management practices by adopting harmonized policies, legal frameworks and requirements regulating vaccine distribution systems within broader regulatory frameworks for pharmaceuticals;
- to implement quality assurance systems.

As new vaccine supply challenges go beyond the responsibility and oversight of traditional immunization programmes, WHO also promotes integration with broader health planning, budgeting and financing frameworks, as well as close cooperation with national drug regulatory authorities.

In addition, the Regional Office encourages country initiatives and supports sharing of best practices and lessons learnt in implementing modern immunization information systems, aiming to address immunization programme monitoring challenges and needs, such as: denominator issues, linking immunizations data from different sources, identifying pockets of unprotected, unregistered and hard to reach populations and identifying why people do not receive their vaccines.

In cooperation with PATH (an international NGO), the Office is developing systematic approaches to review national vaccine cold chain systems and to assess current and future needs to meet new vaccine introduction demands at each immunization site. The Cold Chain Equipment Manager (CCEM) approach and tools were piloted in Georgia in 2013 and proposed for use in other countries in the Region.

Using the CCEM tool to review current and future cold chain needs in Georgia

Immunization services in Georgia are highly decentralized. A number of new vaccines are being introduced in the routine immunization schedule, however there are ongoing concerns regarding the ability of the existing cold chain system to meet current and future demands.

Cold Chain Equipment Manager (CCEM) software was used to collect and analyse comprehensive information from 1409 facilities involved in vaccine distribution and provision of immunization services. Based on the results, a cold chain improvement plan is being developed that will address the needs of every service provider, to ensure that each vaccine dose safely reaches the service provision sites.
Re-thinking immunization information systems
Country experiences on implementing computerized immunization information systems were reviewed in two subregional workshops organized by the Regional Office in 2013. Albania, Georgia, Norway, Sweden, the former Yugoslav Republic of Macedonia and Turkey shared their experience in developing integrated electronic immunization information systems, while Armenia and the Republic of Moldova shared lessons learnt in implementing more specific web-based stock management systems for vaccination supplies.

Approaches and lessons learnt in Turkey in implementing a 2D barcode technology to manage vaccine stocks were also shared at global and regional meetings. Investment in immunization has increased 10-fold in Turkey the last decade, and the number of antigens in the national immunization programme increased from 6 in 1995 to 13 in 2012. A 2D barcode system was implemented as a component of a broader system to track pharmaceuticals. It helps authorities manage annual distribution of over 30 million doses of vaccines to 81 provincial storage sites, 950 district sites and about 22 000 public and private immunization service delivery sites. A web-based interface (Aşı-net) interconnects the 2D stock management module, a real-time temperature control module and individual records in the immunization registry. The system is expected to strengthen patient safety and immunization surveillance, and improve stock management and reporting.

Tailoring immunization programmes
The reasons for inadequate performance of national immunization programmes (NIPs) are complex and numerous; and they include both lack of the political will to secure sufficient funding and lack of confidence in the safety or benefits of the vaccines. A renewed focus on immunization and a range of innovative tools to help drive demand are therefore needed to put the immunization agenda back on track.

In line with the Global Vaccine Action Plan and as advised by both the Strategic Advisory Group of Experts on immunization and ETAGE, the Regional Office published in April 2013 the Guide to Tailoring Immunization Programmes (TIP) in English and Russian to help NIPs identify susceptible populations, determine barriers to routine vaccination and recommend evidence-informed revision or design of immunization service delivery and communications.

Bulgaria and Sweden have successfully applied and benefitted from the tool, and a further four Member States (France, Kazakhstan, Switzerland and the United Kingdom) are considering implementation in 2014.

The TIP methodology is also being adapted and applied to increase uptake of seasonal influenza vaccine among specific at-risk groups. A pilot project to promote uptake among health workers was initiated in Montenegro in 2013 as part of a comprehensive occupational health and infection prevention and control strategy. Results of the project will be incorporated in a TIP flu guide to be published in 2014. A guide for tailoring antimicrobial resistance programmes is also being developed.


SYSTEM STRENGTHENING 2013
Key achievements:
Technical assistance to Member States on SIA planning
Training of NITAG members on development of evidence-based recommendations
Publication and implementation of the Tailoring Immunization Programmes (TIP) approach
Development of tools and support for vaccine procurement and management

Key challenges:
Lack of political commitment for NITAG establishment and capacity building
Lack of vaccine product, price and procurement information
Lack of knowledge on the barriers to immunization and how to address them

Priorities for 2014:
Promotion of NITAG establishment and provision of technical support for existing NITAGs
Further rollout of the TIP methodology and documentation of best practices
Capacity building in vaccine financing and management
4. Supporting new and underutilized vaccines implementation (NUVI)
Adding new vaccines to routine immunization schedules includes prioritization of vaccine introduction; development of solutions to overcome anticipated challenges in introduction of new vaccines into existing systems; ensuring equitable distribution of new or underutilized vaccines; development of long-term plans to ensure sustainable use of the vaccines; and positioning of the vaccines within the broader context of disease prevention and control, by simultaneously scaling up the use of complementary disease control strategies.

The Regional Office supports Member States through the entire process of decision-making, introduction and management of new and underutilized vaccines in national immunization programmes. It facilitates the sharing of knowledge and good practice through meetings and workshops held across the Region, and provides guidance and technical support to countries in collecting evidence and making informed decisions about whether, when and how to introduce new antigens.

Evidence base for decision-making
In particular, the Regional Office helps countries conduct cost–effectiveness studies for new vaccines. In middle- and high- income countries these studies provide economic evidence to support decision-making on introduction of new vaccines. In countries that receive support from the GAVI Alliance, the study results help them advocate for sustainable financing of newly introduced vaccines after donor support has ended. The following activities, among others, took place in 2013.

- A cost–effectiveness study in Albania helped the country’s NITAG finalize its recommendation on introduction of rotavirus vaccine.
- In Azerbaijan the results of a cost–effectiveness study were used to advocate for introduction of pneumococcal vaccine to the Cabinet of Ministers.
- The Regional Office supported the Ministry of Health of Uzbekistan to assess the cost of nationwide introduction of HPV vaccine and to define an HPV vaccine immunization delivery strategy.

In the coming years, the Regional Office will continue its work to increase countries’ capacity to conduct self-evaluations of cost–effectiveness of new vaccines.

Preparation and implementation
Once the decision to introduce new vaccines is made, the Regional Office assists national immunization programmes in preparations to introduce the new vaccines and monitor progress. This includes educating medical professionals and academics about the new vaccine to ensure their support and acceptance, as well as providing the ministries of health with technical support, such as in training vaccinators.

In 2013, information packages on rotavirus and pneumococcal vaccines were developed, translated into local languages and disseminated among health care professionals in Armenia, Azerbaijan, Georgia and Republic of Moldova. The Regional Office also provided technical and financial support in conducting trainings on pneumococcal vaccine introduction for medical workers in Azerbaijan, Armenia and Republic of Moldova and on rotavirus vaccine introduction in Georgia.

On 13 December 2013 a GAVI Regional Working Group meeting was conducted at the Regional Office in Copenhagen, Denmark, to discuss new vaccines implementation in GAVI-eligible countries, define future priorities and coordinate partner support. Technical support was also provided to Kyrgyzstan, Tajikistan, and Uzbekistan in development of proposals to GAVI and plans for new vaccine introductions.
Post-introduction evaluations
The Regional Office supports Member States in conducting post-introduction evaluations to assess the impact of new vaccines on immunization programmes and develop lessons learnt for future vaccine introductions. Technical support was provided in 2013 to Armenia, Azerbaijan and Republic of Moldova in conducting post-introduction evaluations of *Haemophilus influenzae* type b (Hib) and rotavirus vaccines.

The Regional Office also supports Member States in evaluating the impact of new vaccines on disease burden.

- Sentinel surveillance systems to monitor rotavirus are supported in seven countries (Armenia, Azerbaijan, Georgia, Republic of Moldova, Tajikistan, Ukraine and Uzbekistan), including three in which the vaccine has recently been introduced.

- Case control studies are also being conducted in Armenia and Republic of Moldova to estimate the effectiveness of rotavirus vaccines.

- Ongoing support is provided to Armenia in conducting intussusceptions surveillance to monitor the safety of rotavirus vaccine in the subregion.

- Sentinel surveillance systems for bacterial meningitis, including disease due to vaccine-preventable agents (*Streptococcus pneumoniae*, *Neisseria meningitidis* and Hib), have been established and are being strengthened in several countries.

Window of opportunity to improve disease control
The Regional Office encourages counties to utilize introduction of pneumococcal and rotavirus vaccines as a catalyst to prioritize and scale up other interventions to prevent and treat pneumonias and diarrhoeas.

Introduction of human papillomavirus (HPV), pneumococcal and rotavirus vaccines
Significant progress has been achieved in the introduction of HPV, pneumococcal and rotavirus vaccines in the European Region.

26 countries have recommended or funded use of HPV vaccine for national immunization programmes. In all countries the primary target group is girls before sexual debut in the age range of 9-12 years. Most recommendations also advise vaccinating “catch-up” populations of older adolescent girls and young women.

31 countries have recommended universal vaccination with pneumococcal conjugate vaccines in children. Rotavirus vaccines are included in the routine immunization schedule in 12 countries, including three middle-income countries.
NUVI 2013

Key achievements:
Successful introduction of rotavirus vaccine in Georgia and pneumococcal vaccine in Armenia, Azerbaijan, and Republic of Moldova
Establishment of NITAGs in Azerbaijan, Kazakhstan, Republic of Moldova, Ukraine and Uzbekistan
Evidence-based decisions on introduction of new vaccines made in Albania, Azerbaijan, Croatia, Kyrgyzstan, Tajikistan and Uzbekistan

Key challenges:
Improving timeliness of vaccinations to achieve high coverage with rotavirus vaccines
Prioritization of new vaccine introductions
Overcoming vaccine hesitancy among medical workers and the public to ensure high coverage with pneumococcal vaccines
Establishment of NITAGs in countries that still do not have standing advisory bodies

Priorities for 2014:
Continue to strengthen NITAGs and build their capacity to enable evidence-based decision-making on immunization
Facilitate collaboration between NITAGs in the Region
Provide support to Member States in preparing for introduction of new vaccines and evaluating introductions
Provide support in reaching and sustaining high coverage with new vaccines
Create opportunities to share experiences and best practices between countries
Provide support to document the impact of new vaccines
5. Strengthening the laboratory component of surveillance
Laboratory investigations, including molecular characterization, are critical to identify imported pathogens, define import-related outbreaks and understand transmission patterns. This is particularly important to ascertain whether the Region has retained its polio-free status and to verify the interruption of endemic transmission of measles and rubella.

European polio and measles/rubella laboratory networks established by the Regional Office are maintaining high levels of proficiency, as monitored through the annual accreditation review, which includes external quality assessments (EQA) and on-site accreditation visits. All WHO polio network laboratories and all measles/rubella network laboratories except one were accredited in 2014.

The Regional Office provides technical advice and guidance to the networks’ laboratories and supports selected countries with reference reagents and laboratory supplies.

Progress and activities in 2013
Performance of the Polio Laboratory Network in the European Region remains high, and all Network laboratories now report through the online Laboratory Data Management System (LDMS).

In 2013, the Network was instrumental in establishing the origin and monitoring of WPV1 circulation in Israel and other countries in the Middle East.

As part of the Network’s ongoing campaign for laboratory biosafety, a series of training workshops was organized by the Regional Office in 2013 to implement best practices in biorisk management. Also, as challenges concerning the shipment of samples and virus isolates to national laboratories or regional reference laboratories continue, participating laboratories received relevant training to ensure adherence to international standards of trans-border shipment of diagnostic samples.

The Measles Rubella Laboratory Network made increasing use in 2013 of the Measles Rubella Laboratory Data Management System database (MRLDMS), a specimen-based online database developed in late 2012 that links epidemiological and laboratory datasets. This link is critical for quality surveillance, and efforts to increase uptake of this system will continue in 2014.

Laboratory investigation and molecular epidemiology of measles outbreaks provided invaluable data for the Regional Verification Committee’s decisions in 2013. Thorough molecular analysis enabled several countries to report distinct chains of transmission, clusters or sporadic events.

Rubella surveillance, including laboratory investigation and genotyping of rubella cases, remains a challenge for many countries.

Polio Laboratory Data Management System exceeds 30 000 records in 2013
The Polio Laboratory Data Management System (LDMS) developed by the Regional Office has revolutionized the way case-based laboratory data are linked to the corresponding epidemiological records. Since its release following the 2010 polio outbreak in Tajikistan, LDMS has increased agreement between the two datasets to over 98%. As of 15 August 2013, this tool for online reporting of laboratory test results collected 30 000 records in total from all WHO polio laboratories in the regional network, thereby enhancing acute flaccid paralysis, enterovirus and environmental surveillance in the European Region.

In addition to its reporting component, the system offers overall immunization profiles of the 53 Member States in the Region, and valuable resources such as laboratory manuals and biosafety guidelines. The polio LDMS architecture and code have also been adopted for the measles and rubella laboratory network and there is interest from other regions to adopt the system or to use its logic.

More information: http://ldms.euro.who.int
**MeaNS and RubeNS**

MeaNS (Measles Nucleotide Surveillance) and RubeNS (Rubella Nucleotide Surveillance) are web-accessible and quality-controlled nucleotide databases for the WHO Measles and Rubella Laboratory Network which were jointly established by WHO and Public Health England. These databases are potent tools to track viral sequence diversity and monitor elimination of virus strains. They are funded, curated and hosted by the WHO Global Specialized Laboratory for measles and rubella at Public Health England.

In 2013, the MeaNS database was instrumental in detecting the rapid dominance of the measles genotype D8 in the European Region, and the concomitant circulation of several D8 lineages. Key future challenges are to strengthen molecular investigation of rubella cases and increase the level of reporting to RubeNS.

In total, WHO European reference laboratories have recorded more than 9000 measles virus sequences in MeaNS and more than 300 rubella virus sequences in the RubeNS database.


**Rotavirus and IBD sentinel surveillance lab achievements**

Building on polio and measles/rubella network models and experience, similar EQA have been successfully organized for sentinel surveillance laboratory networks for rotavirus and invasive bacterial diseases (IBD).

The Regional Office supports sentinel surveillance for rotavirus diarrhoea and/or IBD in seven countries that are or have been eligible for GAVI support for new vaccines. These surveillance systems based in selected referral hospitals provide detailed laboratory information which can be linked to the clinical and epidemiologic information of cases identified in the participating hospitals.

In 2013, the Regional Office provided ongoing technical support to and monitoring of the hospitals and laboratories involved in surveillance, and provided supplies and reagents needed to support surveillance.

Progress was made in the development and standardization of data management systems needed to support these surveillance systems, including the development of databases linking regional reference laboratory results with individual case data at the national level. Among six countries where rotavirus surveillance has been supported for the past several years, three have used the information provided by the surveillance in their decision to introduce rotavirus vaccine and are using the data from those systems to assess vaccine effectiveness and/or vaccine impact.
6. Improving communication and advocacy
As in previous years, the Regional Office collaborated closely with national authorities to improve their public communications related to immunization and to advocate for strengthening immunization programmes. This support included providing tools:

- to drive demand for routine and supplementary immunization activities;
- to address vaccine safety concerns and crises;
- to strengthen disease outbreak communication capacity; and
- to bolster advocacy platforms through both traditional and social media.

Country communication reviews were conducted in Estonia and Romania in 2013. Numerous recommendations from those reviews have been advanced by national counterparts, including the establishment of vaccine communication working groups in Estonia and Romania.

Specific outbreak communications support was delivered to countries experiencing measles and rubella outbreaks in 2013 or planning to conduct SIAs.

Responding to vaccine safety concerns
As once-common diseases become less frequent, fear of the diseases themselves tend to become overshadowed by vaccine safety concerns, sometimes fueled by misinformation about vaccination. Health authorities need to promptly investigate any adverse effects following vaccination and effectively manage any crises in public confidence resulting from them.

The Regional Office published Vaccine safety events: managing the communications response in April 2013 (in English and Russian) to help immunization programme managers plan and manage a communications response following a vaccine-related event, with the objective of maintaining public trust and confidence in vaccines. Implementation of the manual will be supported, starting in 2014, with a series of subregional vaccine safety management and communication trainings, a facilitator’s guide for the trainings, and a handy desktop version of the manual.

Watch out – Measles is about!
Complacency can lead to a resurgence of “forgotten” diseases. As measles cases become increasingly scarce, innovative measures are needed to remind people that this disease is still lurking, as a very real threat to public health and to the elimination goal.

This message was brought home to high-level decision makers at the WHO Regional Committee meeting in September 2013, when “Mr Measles” and his arch enemy “The Innoculator” stormed the session on measles and rubella elimination (www.youtube.com/results?search_query=mr%20measles%20&sm=3).

The street theatre concept was developed by the Regional Office for adaptation and use by national authorities to raise public awareness and promote immunization. It has been successfully piloted in Bath, United Kingdom, and is scheduled to be used in several Member States in 2014.

European Immunization Week
As in previous years, all 53 Member States participated in European Immunization Week (EIW) in 2013. The Regional Office supported national efforts by contributing to several events, scaling-up the initiative’s online presence, launching several publications and releasing the code for a smart phone “app” that can be adapted by national authorities to local languages and national immunization schedules. The app will give parents easy access to information on vaccines as well as reminders of when their child’s next immunization is due.

Highlights of the year’s activities were compiled in the Narrative report: European Immunization Week 2013. Work began in 2013 to plan both the next EIW and jubilee celebrations for the initiative’s 10th year in 2015. Among other projects, the Regional Office developed a street theatre concept to raise public awareness on measles, which can be adapted to national contexts and priorities.

Immunization online
The sections of the WHO Regional Office for Europe website related to immunization and vaccine-preventable diseases are well visited, with over 135 000 page views in 2013. The VPI Programme’s twitter channel (@WHO_EUROPE_VPI) grew consistently in 2013 in reach and represents a communication outlet with large growth potential in the coming year. The Programme uses Twitter especially to announce publications, direct attention to website features and resources, raise public awareness and report on special events.

In October 2013 the Regional Office advised Azerbaijan’s Ministry of Health in establishing a vaccines and immunization website to serve as a prominent source of reliable information in local languages for the general public and other target groups. The template will be further developed for use by other Member States to help them strengthen their online presence and website usability.

Other advocacy work
The Regional Office also promoted immunization in 2013 through the following projects and products:

• a high-level advocacy meeting in Copenhagen, Denmark, on 31 October 2013 for partners and select Member States;

• an additional online resource for caregivers and health workers entitled Talking with patients and parents about HPV vaccination for girls (in English, French, German and Russian);

• initial development of a new tablet/desktop ‘app’ for use by general practitioners and frontline health workers in explaining the risks and benefits of vaccine-preventable diseases and vaccines to hesitant parents;

• monthly tables and quarterly analyses of epidemiological data (WHO EpiData and WHO EpiBrief);

• numerous high-profile interviews, including with the BBC, CNN, NewScientist, VaccinesToday, national television in Denmark and Romania, and various press outlets in Estonia and Ukraine;

BEHAVIOUR CHANGE AND COMMUNICATIONS 2013

Key achievements:
- Provision of support and tools for vaccine safety communications
- Launch of immunization reminder app
- High-level advocacy dialogue with priority countries

Key challenges:
- Reducing complacency and vaccine safety concerns among under-vaccinated subpopulations
- Increasing Member States’ commitment to elimination targets and their capacities to communicate the risks and benefits of immunization

Priorities for 2014:
- Increasing political commitment through high-level advocacy visits
- Subregional training on vaccine safety risk management and safety communication
- Production of additional immunization resources for health care professionals
- Release of multi-language versions of immunization reminder app and further development of decision support app
- Completion of further country communication reviews, further development of online and social media channels

To initiate better cooperation with and involvement of health care workers’ professional associations in measles and rubella elimination activities, the Regional Office also actively contributed to regionwide health care association conferences, supported Antwerp University’s summer school on vaccinology and initiated an Alliance of Health Professionals for a Measles- and Rubella-free Europe. An initial brainstorm meeting of the Alliance was held on 4 December 2013 in Copenhagen, Denmark and attended by representatives of the International Pediatrics Association, the European Society of Paediatric Infectious Diseases, Health Security Executive and the International Federation of Medical Student Associations. Activities will continue in 2014, with participation of professional associations in Regional Office meetings, including the regional Immunization Programme Managers Meeting in March 2014.
New publications
Available in English and Russian at www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/publications

• Guidelines for measles and rubella outbreak investigation and response in the WHO European Region
• Guidance on conducting serosurveys in support of measles and rubella elimination in the WHO European Region
• The Guide to Tailoring Immunization Programmes (TIP): Increasing coverage of infant and child vaccination in the WHO European Region
• Meeting report: prevention and control of measles outbreaks in the Caucasus, 10–11 July 2013, Tbilisi, Georgia
• Narrative report: European Immunization Week 2013 (also in French and German)
• Report of the 12th meeting of the European Technical Advisory Group of Experts on Immunization (ETAGE)

Peer-reviewed articles
• Muscat M, Jankovic D, Goel A, Butler R, Pfeifer D. Progress in the elimination of measles and rubella in the WHO European Region. [in German]. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2013 Sep;56(9):1225-30

Regional Committee documents
Available in English, French, German and Russian at www.euro.who.int/en/about-us/governance/regional-committee-for-europe/sixty-third-session/documentation

• EUR/RC63/12 Progress report on measles and rubella elimination and the package for accelerated action to achieve elimination by 2015
• EUR/RC63/Inf.Doc./14 Draft background text on regional implications of the new polio strategic plan
WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

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