

This report provides an overview of selected epidemiological characteristics of measles and rubella in the WHO European Region. It is primarily based on epidemiological data submitted to the centralized information system for infectious diseases.¹ The analyses of these diseases are performed on cases with disease onset dates during the first nine months of 2013. Where these dates were unavailable, cases with the date of notification reported during the first nine months of 2013 were included. The reader is referred to WHO EpiData 9/2013, which includes tabulated surveillance data by country corresponding to the period of reporting (January to September 2013).² This issue also reports on a measles-related death in the Netherlands, and on the measures taken by Israel and Turkey to prevent the spread of wild poliovirus and the occurrence of clinical cases. A description of rotavirus surveillance activities undertaken in six countries of the Region is also included with a focus on 2012 data.

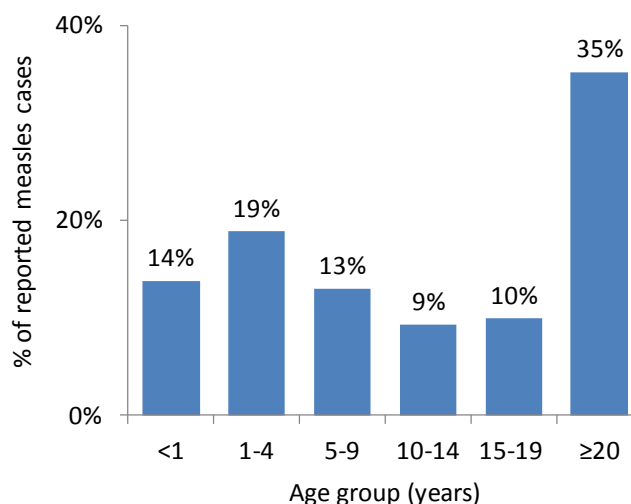
Measles from January to September 2013

Incidence – notifications and laboratory data

For the first nine months of 2013, 26 321 measles cases were reported in 37 countries of the WHO European Region among 50 (94%) countries that submitted measles data (including zero reporting). Three countries, namely Bosnia and Herzegovina, Monaco and San Marino did not submit reports. Of the total, 83% of cases (n=21 885) were reported by six countries: Georgia (7456; 28%), Germany (1651; 6%), Italy (1639; 6%), Turkey (7115; 27%), Ukraine (n=2155; 8%) and the United Kingdom (n=1869; 7%). With 8167 cases of measles, the 28 Member States constituting the European Union reported 37% of all cases in the Region. The highest incidence per million population for the first nine months of 2013 was reported in Georgia (1742.3) followed by Turkey (94.4).

Of the total, 15 276 (58%) cases were laboratory confirmed and 2278 (9%) were epidemiologically linked cases. The remaining 8767 (34%) were classified as clinically compatible cases. During the first nine months of 2013, clinical specimens from 964 cases of measles were submitted for measles virus sequencing (as of 1 November 2013). Sequence data was entered

Fig. 1. Age distribution of measles cases in the WHO European Region, first nine months of 2013 (n=26 575)



N.B. Discarded cases are not included

in the Measles Nucleotide Surveillance database (MeaNS)³ by national or reference laboratories of the WHO European Region. The genotypes identified in the Region included D8 (n=819), D4 (n=79), B3 (n=61), D9 (n=2) and H1 (n=3).

Age distribution

The age group was known in 99.9% (n=26 304) of cases, of which 3627 were <1 year old, 4944 were 1–4 years old, 3406 were 5–9 years old, 2451 were 10–14 years old, 2619 were 15–19 years old and 9257 were ≥20 years old. Fig. 1 shows the age distribution by percentage of reported measles cases in the Region during the first nine months of 2013. Fig. 2 overleaf shows the age distribution of measles cases in the six countries that reported most cases.

Vaccination status

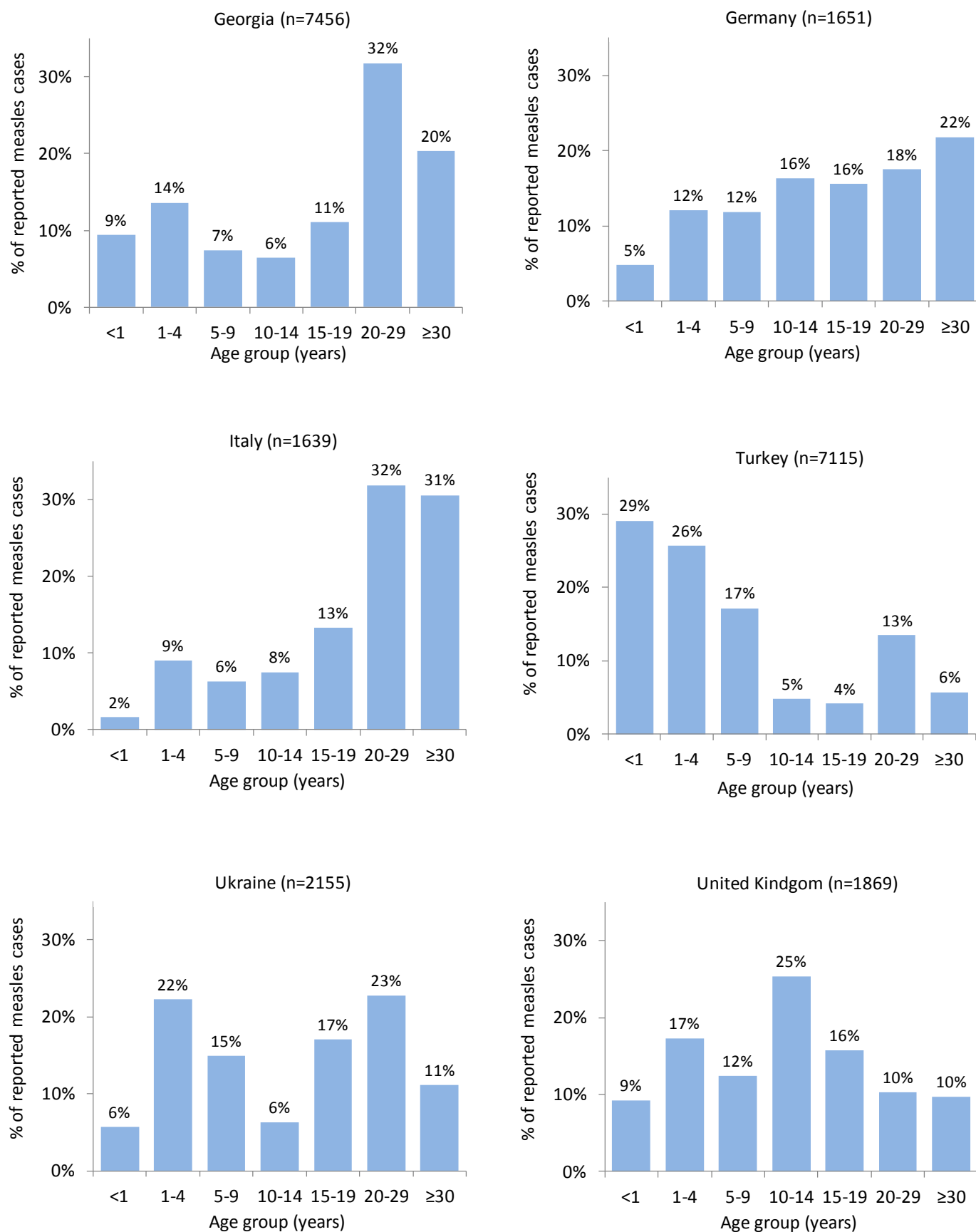
Vaccination status was known in 16 313 cases (62%). Of the 12 029 (74%) unvaccinated cases, 12 022 cases had data on age: 3384 cases (28%) were <1 year old, 2440 cases (20%) were 1–4 years old, 1580 cases (13%) were 5–9 years old, 2452 cases (20%) were 10–19 years old and 2166 cases (18%) were ≥20 years old. The remaining 4284 cases (26%) were reportedly vaccinated with at least one measles-containing vaccine (MCV) dose.

¹ World Health Organization. Computerized system for infectious diseases (CISID) <http://data.euro.who.int/CISID/>

² WHO EpiData no. 9/2013 www.euro.who.int/WHO-EpiData-9-2013

³ Measles Nucleotide Surveillance database (MeaNS) www.who-measles.org/

Fig. 2. Age distribution of measles cases in the six countries that reported most cases in the WHO European Region in first nine months of 2013 (n=21 885)



Hospitalization

Data on hospitalization status was available for 61% (n=15 937) of all reported measles cases. There were 6496 reported hospitalized cases in connection with measles, amounting to 41% of all cases with known hospitalization status.

Imported cases

Importation status was known in 58% (n=15 313) of cases. Of these, 250 were reported as imported cases, amounting to 1.6% of cases with a known importation status. The remaining cases were believed to have been infected within their own countries.

Measles-related death in the Netherlands

The National Institute for Public Health and the Environment of the Netherlands has reported the death of a 17-year-old female from measles-related complications on the 26 October 2013. The teenager who belonged to an orthodox Protestant community in the province of Zeeland was not vaccinated against the disease. The current measles outbreak that has been ongoing since May 2013 (EpiBrief no.3/2013)⁴ has predominantly affected individuals of the orthodox Protestant denomination across the country.

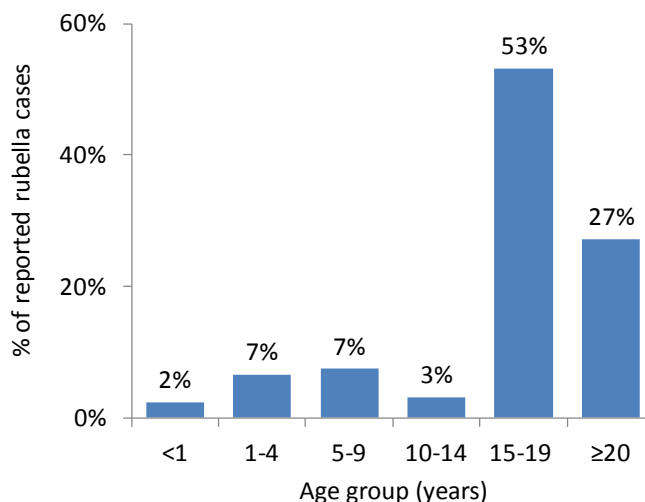
Rubella from January to September 2013

Incidence – notifications and laboratory data

For the first nine months of 2013, 37 502 rubella cases were reported in 22 countries of the WHO European Region among 43 (81%) countries submitting rubella data (including zero reporting). The cases were reported almost exclusively by Poland (n=37 012; 99%), which also had the highest incidence per million population (965.9). The 28 Member States constituting the European Union reported 99.3% (n=37 257) of all cases in the Region.

Of the total, 205 (1%) cases were laboratory confirmed. Of these, 84% (n=173) were reported by Romania (101), Kazakhstan (25), the Netherlands (20), Kyrgyzstan (15) and the United Kingdom (12). During the first nine months of 2013, one rubella virus sequence was entered in the Rubella Nucleotide Surveillance database (RubeNS)⁵ by the reference laboratory of the United Kingdom (as of 1 November 2013). The genotype identified was 2B.

Fig. 3. Age distribution of rubella cases in the WHO European Region, first nine months of 2013 (n=5014)



N.B. Discarded cases are not included

Age distribution

The age group was known in 5009 cases (13%), of which 122 cases were <1 year old, 330 cases were 1–4 years old, 375 cases were 5–9 years old, 160 cases were 10–14 years old, 2664 cases were 15–19 years old and 1358 cases were ≥20 years old. Fig. 3 shows the age distribution by percentage of reported rubella cases during the first nine months of 2013.

Vaccination status

Vaccination status was known in 23 896 cases (64%). Of the 20 292 (85%) unvaccinated cases, 199 cases had data on age: 51 cases (26%) were <1 year old, 34 cases (17%) were 1–4 years old, 15 cases (8%) were 5–9 years, 39 cases (20%) were 10–19 years old and 60 cases (30%) were ≥20 years old. The remaining 3604 cases (15%) were reportedly vaccinated with at least one rubella-containing vaccine dose. These were reported mostly by Poland (3445 cases).

Imported cases

Importation status was known in 1% (n=425) of rubella cases. Of these, 15 were reported as imported cases, amounting to 3.5% of cases with a known importation status. The remaining cases were believed to have been infected within their own countries.

⁴ WHO EpiBrief no. 3/2013 www.euro.who.int/who-epibrief-3-2013

⁵ Rubella Nucleotide Surveillance database (RubeNS) www.hpa-bioinformatics.org.uk/rubella

Rotavirus surveillance

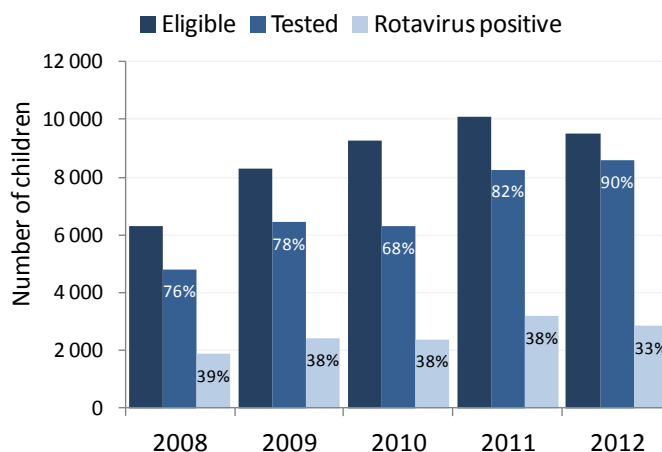
Background

The WHO European Regional Rotavirus Surveillance Network currently encompasses six countries which conduct sentinel surveillance for rotavirus in children hospitalized with diarrhea. Five of the countries, namely Azerbaijan, Georgia, the Republic of Moldova, Tajikistan and Ukraine established rotavirus surveillance in 2007 and the sixth, Armenia, began in 2009. The establishment of rotavirus sentinel surveillance systems in these countries was recommended by WHO to provide data needed to inform decisions about the use of rotavirus vaccines and was made possible with the support of the Global Alliance for Vaccines and Immunization (GAVI).

The sentinel sites of this network are part of a larger WHO global network which includes sites in 64 countries across all WHO Regions and include both GAVI- and non-GAVI-supported countries. More information on the global network including summaries of recent results is available at www.who.int/nuvi/surveillance/en/.

The surveillance network involves the participation of selected 'sentinel' hospitals where children <5 years of age with diarrhoea are enrolled and tested to determine how many of them are infected with rotavirus. Participating sites all use the same protocol which includes standardized definitions and procedures to facilitate the comparison of results over time and across countries. National rotavirus

Fig. 4. Number of eligible children with diarrhoea enrolled in rotavirus surveillance, proportion tested and proportion positive for rotavirus by year in the six counties participating in the WHO European Regional Office Rotavirus Surveillance Network, 2008–2012

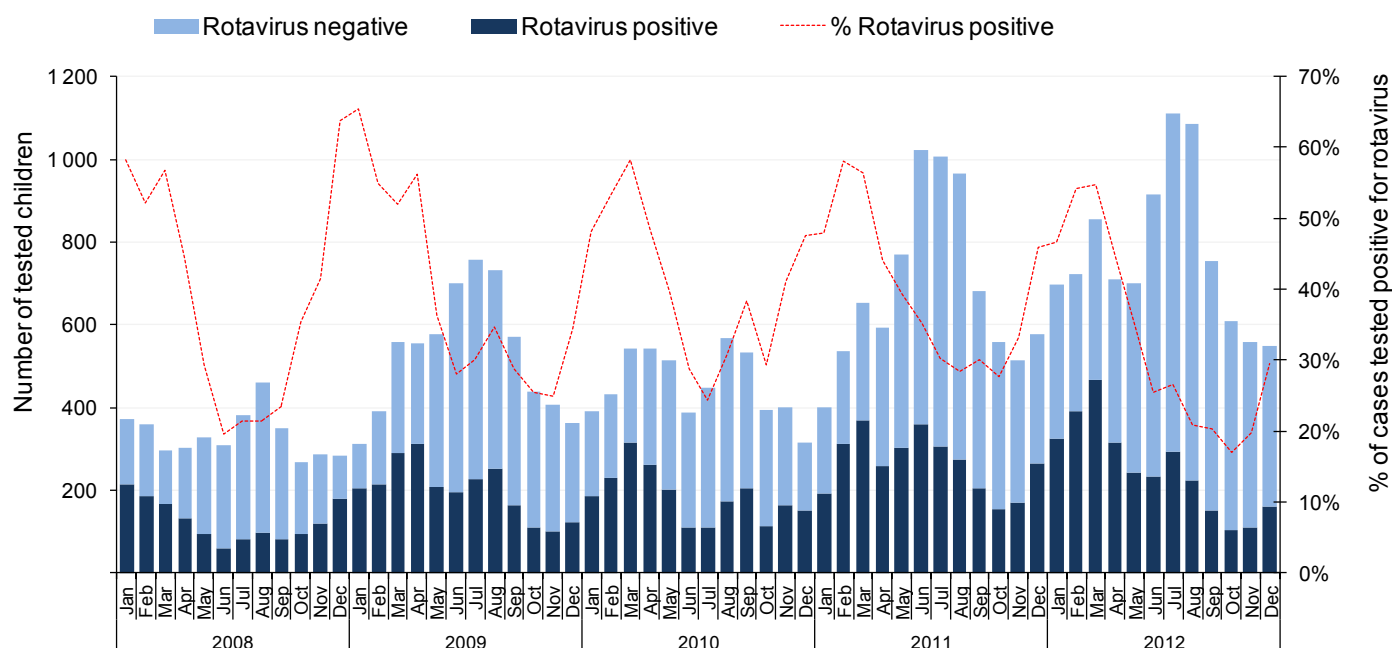


laboratories test for rotavirus using enzyme-linked immunosorbent assay (ELISA) kits and the Regional Reference Laboratory (Republican Research and Practical Center for Epidemiology and Microbiology) in Minsk, Belarus performs genotyping and quality control of the tests performed in national laboratories.

Results

In 2012, 10 145 children hospitalized for diarrhoea were reported by the 12 sentinel hospitals participating in the surveillance network. Of the 9056 children (90%) who were tested for rotavirus, 2968 (33%) were found to be infected with the virus (Fig 4). The proportion of children tested positive for rotavirus ranged from 14%

Fig. 5. Seasonal trends of cases with diarrhoea tested and proportion of cases positive for rotavirus in the six counties participating in the WHO European Regional Office Rotavirus Surveillance Network, 2008–2012



in Azerbaijan to 40% in Republic of Moldova. Among tested children, rotavirus was found in a high proportion of children in all age groups. This ranged from 21% of children <6 months of age to 37% among children 12–23 months.

Diarrhoea caused by rotavirus exhibited a cyclic seasonal pattern (Fig 5) in most of the participating sites accounting for a much higher proportion of diarrhoea hospitalizations in the mid-winter months than at other times during the year. In contrast to diarrhoea due to other causes, which are typically more common in the summer months, the number of cases with diarrhoea caused by rotavirus usually peaks between January and March.

Based on the strains that were typed for 2011, four genotypes (G1P8, G2P4, G3P8 and G4P8) accounted for more than 75% of the strains circulating in the participating countries. This was similar to the distribution of strains seen in the previous year.

Wild poliovirus 1 detection in Israel

Following the detection of wild poliovirus 1 (WPV1) in Israel in sewage samples of February 2013 (EpiBrief no.3/2013),⁶ epidemiological and environmental surveillance for poliovirus continues intensively across the country. At the same time, the nationwide immunization campaign targeting children up to 10 years of age with live attenuated oral poliovirus vaccine (OPV) continues. By 11 November 2013, 78% coverage of the children targeted for vaccination was reached nationwide. In the Southern District of the country, where wild poliovirus was first detected in sewage, 89% of the targeted children were vaccinated. A second round of OPV vaccination is currently being undertaken in this area. Israel will continue administering OPV to children in their first two years of life as long as regional developments deem this necessary. The number of doses per child, the exact ages at which OPV will be given as well as the need for catch up in children up to 10 years of age not previously vaccinated, have yet to be decided.

The monitoring of WPV1 in sewage samples continues uninterrupted. Although WPV1 is still being detected, results from sampling sites in Israel's Southern District indicate a decreasing load of WPV1. Since 1 June 2013 when surveillance for acute flaccid paralysis (AFP) was enhanced (EpiBrief no.3/2013),⁶ the Ministry of Health has received notification of 55 AFP cases. No cases of

polio have been detected in Israel at the time of writing this report.

Turkey's response to poliomyelitis outbreak in Syria

As part of the cross-regional response to the outbreak of poliomyelitis in the Syrian Arab Republic, the public health authorities in Turkey are scaling up the surveillance of acute flaccid paralysis. At the same time a vaccination campaign with two rounds of oral poliovirus vaccine is planned to be completed by the end of 2013. All children less than five years of age in selected provinces of the south-eastern part of the country irrespective of their vaccination status are targeted for immunization and the children who are under-vaccinated will be administered vaccines to complete their vaccination schedule. Syrian citizens under temporary protection in Turkey will also be included in the supplementary immunization activities. A newly established WHO field presence in the south eastern province of Gaziantep, Turkey at the border of the Syrian Arab Republic, is serving to support public health services operations.

Comments

Measles and rubella

The number of reported measles cases in the European Region for the first nine months of 2013 is similar to that reported for the same period in 2012 (n=26 069). New outbreaks of measles that have occurred in several countries persisted while in others transmission intensified. Measles affected individuals of all age groups. Overall, just over one-third of cases were adults aged 20 years and older. The age distribution of cases varied in the different countries reflecting the timing of the implementation of measles vaccination programmes, strategies used and coverage achieved.

Rubella continues to be reported in much fewer countries than measles. However, the large number of cases reported in Poland (n=37 012) remains disconcerting in the light of the 2015 goal for eliminating the disease.

The current epidemiological situation of measles and rubella requires accelerated action and intensified efforts by all those involved, particularly politicians, decision makers, public health authorities and health care workers. The recently launched "Package for

⁶ WHO EpiBrief no. 3/2013 www.euro.who.int/who-epibrief-3-2013

accelerated action" for measles and rubella elimination⁷ identifies priority areas in which the Regional Office will strengthen technical support to countries as they seek to eliminate measles and rubella, and sets indicators and milestones by which progress resulting from the efforts of all stakeholders can be measured.

The Package for accelerated action groups recommended activities in the following six categories:

- vaccination and immunization system strengthening
- surveillance
- outbreak prevention and response
- communications, information and advocacy
- resource mobilization and partnerships
- verification of measles and rubella elimination

Rotavirus surveillance

Data provided by these sentinel surveillance systems was used to inform decision-making on the GAVI-supported introduction of rotavirus vaccine into the national childhood immunization schedule of three countries, namely Armenia (2012), Georgia (2013) and the Republic of Moldova (2012). This is an efficient way of collecting information on the burden of severe disease due to rotavirus and a similar approach could be applied elsewhere.

Rotavirus surveillance is planned to continue in these countries as well as in countries which have not yet introduced rotavirus vaccine. The aim is to monitor trends in diarrhoea caused by rotavirus, observe any changes in circulating rotavirus genotypes and to assess the impact of the vaccine. To date, eight other countries in the Region (Austria, Belgium, Finland, Israel, Luxembourg, Germany, Greece and the United Kingdom) have rotavirus vaccination included in national immunization programmes.

Date of publication: November 2013

Suggested citation: *WHO EpiBrief*, 2013, 4:1–6

© World Health Organization, 2013.

All rights reserved. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Wild poliovirus

As long as poliomyelitis persists in some countries, the importance of maintaining high immunization coverage against poliomyelitis across all age groups in all countries of the Region cannot be overestimated. In addition, WHO's publication "International travel and health" recommends that all travellers to and from polio-infected areas be fully vaccinated against poliomyelitis. Countries receiving travellers or accommodating people displaced by conflicts or seeking asylum from polio-infected areas should identify anyone who is not vaccinated or incompletely vaccinated, or whose vaccination status is unknown, and provide him/her with missing doses of polio vaccine according to the national schedule of the country of origin.

The OPV vaccination campaigns in Israel and selected provinces in the south-eastern part of Turkey together with enhanced AFP surveillance are important measures to prevent cases of poliomyelitis and stop the spread of the virus. Indeed, high-quality surveillance – i.e. AFP, environmental or enterovirus surveillance – is essential for early detection and reporting of poliomyelitis.

The detection of WPV1 in sewage in Israel and the confirmed outbreak of poliomyelitis in the Syrian Arab Republic are once again reminders that the European Region will remain at risk for re-introduction of wild poliovirus until global polio eradication has been achieved.

⁷ *Measles and Rubella Elimination 2015-Package of Accelerated Action: 2013-2015* www.euro.who.int/package-for-accelerated-action-2013-2015