

This report provides an overview of selected epidemiological characteristics of measles and rubella in the WHO European Region. It is primarily based on 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 half of 2013.² The reader is referred to WHO EpiData 6/2013, which includes tabulated surveillance data by country corresponding to the period of reporting (January to June 2013).³

This issue of EpiBrief also reports on a recent measles outbreak in Lithuania and measles and rubella outbreaks in the Netherlands. These summaries are based on data provided in aggregated format by the health authorities. In addition, it provides information on the environmental detection of wild poliovirus 1 in Israel and ensuing measures taken to prevent an outbreak.

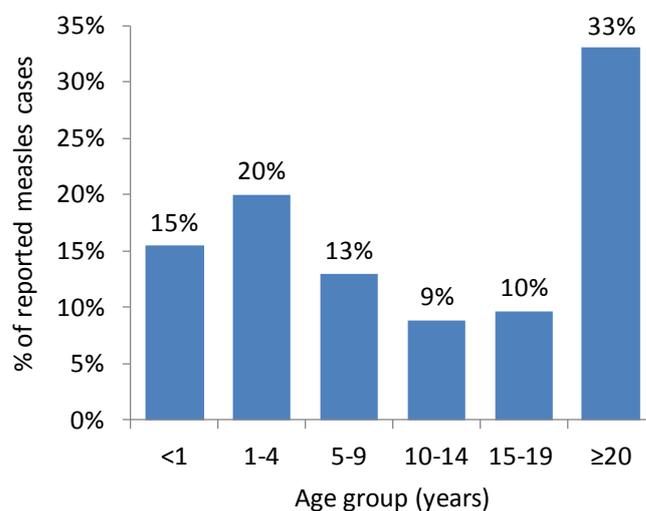
Measles from January to June 2013

Incidence – notifications and laboratory data

For the first half of 2013, 20 601 measles cases were reported in 34 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, 87% of cases (n=18 024) were reported by six countries: Georgia (n=5783; 28%), Germany (n=1097; 5%), Romania (n=1026; 5%), Turkey (n=6547; 32%), Ukraine (n=1821; 9%) and the United Kingdom (n=1750; 9%). With 5325 cases of measles, the 27 Member States constituting the European Union (as of 30 June 2013) reported 30% of all cases in the Region. The highest incidence per million population for the first half of 2013 was reported in Georgia (1351.0) followed by Turkey (86.9).

Of the total, 12 630 (61%) cases were laboratory confirmed and 1419 (7%) were epidemiologically linked cases. The remaining 6552 (32%) were classified as clinically compatible cases. During the first half of 2013, clinical specimens from 726 cases of measles were submitted for measles virus sequencing.

Fig. 1. Age distribution of measles cases in the WHO European Region, first half of 2013 (n=20 533)



N.B. Discarded cases are not included

Sequence data was entered in the Measles Nucleotide Surveillance database (MeaNS)⁴ by national or reference laboratories of the WHO European Region. The genotypes identified in the Region included D8 (n=623), D4 (n=60), B3 (n=42) and D9 (n=1).

Age distribution

The age group was known in 99.7% (n=20 533) of cases, of which 3171 were <1 year old, 4113 were 1–4 years old, 2652 were 5–9 years old, 1824 were 10–14 years old, 1986 were 15–19 years old and 6787 were ≥20 years old. Fig. 1 shows the age distribution by percentage of reported measles cases in the Region during the first half of 2013.

Vaccination status

Vaccination status was known in 13 366 cases (65%). Of the 9844 (74%) unvaccinated cases: 2975 cases (30%) were <1 year old, 2014 cases (20%) were 1–4 years old, 1170 cases (12%) were 5–9 years old, 1862 cases (19%) were 10–19 years old and 1816 cases (18%) were ≥20 years old. The remaining 3522 cases (26%) were reportedly vaccinated with at least one measles-containing vaccine (MCV) dose.

Hospitalization and mortality

Data on hospitalization status was available for 57% (n=11 729) of all reported measles cases. There were

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

² Where these dates were unavailable, cases with the date of notification reported during the first half of 2013 were included.

³ WHO EpiData no. 6/2013 <http://www.euro.who.int/WHO-EpiData-6-2013>

⁴ Measles Nucleotide Surveillance database (MeaNS) <http://www.hpa-bioinformatics.org.uk/Measles>

5459 reported hospitalized cases in connection with measles, amounting to 47% of all cases with known hospitalization status.

During this period, six measles-related deaths were recorded. In addition to the four measles-related deaths reported earlier this year (two from Georgia and two from Turkey),⁵ two more deaths were reported. One death, reported from Romania, occurred in a 4-month-old infant after suffering from acute pneumonia. The other death occurred in Wales, United Kingdom, in a 25-year-old man following acute pneumonia as a complication of measles.

Imported cases

Importation status was known in 54% (n=11 131) of cases. Of these, 145 were reported as imported cases, amounting to 1.3% of cases with a known importation status. The remaining cases were believed to have been infected within their own countries.

Rubella from January to June 2013

Incidence – notifications and laboratory data

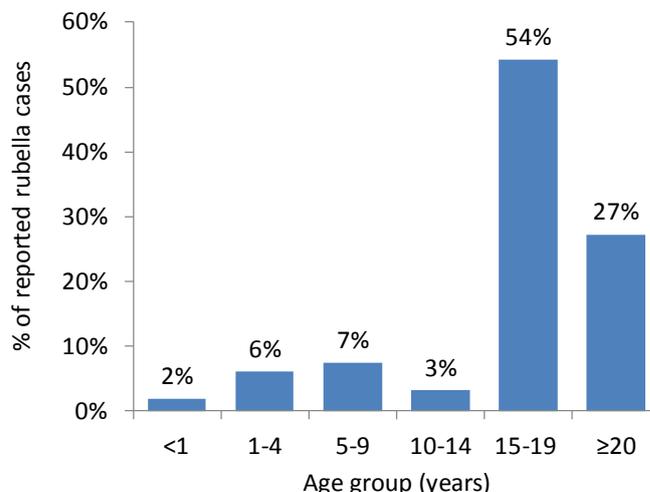
For the first half of 2013, 4904 rubella cases were reported in 19 countries of the WHO European Region among 40 (75%) countries submitting rubella data (including zero reporting). The cases were reported almost exclusively by Poland (n=4520; 92%), which also had the highest incidence per million population (118). The 27 Member States constituting the European Union reported 95.7% (n=4693) of all cases in the Region.

Of the total, 165 (3%) cases were laboratory confirmed. Of these, 83% (n=137) were reported by Romania (77), Kazakhstan (20), the Netherlands (16), Kyrgyzstan (15) and the United Kingdom (9). During the first half of 2013, no data on rubella virus sequences were entered in the Rubella Nucleotide Surveillance database (RubeNS)⁶ by national or reference laboratories of the WHO European Region.

Age distribution

The age group was known in all 4904 cases, of which 92 cases were <1 year old, 295 cases were 1–4 years old, 366 cases were 5–9 years old, 157 cases were 10–14 years old, 2658 cases were 15–19 years old and 1336 cases were ≥20 years old. Fig. 2 shows the age distribution by percentage of reported rubella cases during the first half of 2013.

Fig. 2. Age distribution of rubella cases in the WHO European Region, first half of 2013 (n=4904)



N.B. Discarded cases are not included

Vaccination status

Vaccination status was known in 284 cases (5.8%). Of the 159 (56%) unvaccinated cases: 33 cases (21%) were <1 year old, 28 cases (18%) were 1–4 years old, 17 cases (11%) were 5–9 years, 37 cases (23%) were 10–19 years old and 44 cases (28%) were ≥20 years old. The remaining 125 cases (44%) were reportedly vaccinated with at least one rubella-containing vaccine dose. These were reported mostly by Georgia (67 cases) and Romania (36 cases).

Imported cases

Importation status was known in 6% (n=281) of rubella cases. Of these, 11 were reported as imported cases, amounting to 3.9% of cases with a known importation status. The remaining cases were believed to have been infected within their own countries.

Measles outbreak in Lithuania

An outbreak of measles affecting 34 persons has occurred in Lithuania in the region of the capital city, Vilnius. All cases were laboratory confirmed. The first identified case was an unvaccinated 12-year-old child who had rash onset on 24 April 2013. There was no evidence of importation of the measles virus. The most recent reported case had date of disease onset on 17 June 2013.

Most cases (68%; n=23) were adults 30 years and older, followed by adults (15%; n=5) between 20 and 29 years of age. The remaining six cases included an infant (< 1 year old), a child between 1–4 years and

⁵ WHO EpiBrief, 2013, 2:1–7

⁶ Rubella Nucleotide Surveillance database (RubeNS) <http://www.hpa-bioinformatics.org.uk/rubella>

four other persons aged 5–19 years. The vaccination status of the majority of cases (56%; n=19) was unknown; these were all adults 20 years and older. Among the remaining cases, nine were unvaccinated and six others had received one vaccine dose.

The Ministry of Health and Centre for Communicable Diseases and AIDS reported the outbreak and offered the combined measles-mumps-rubella (MMR) vaccine to all those who were not previously vaccinated or who had received only one dose of the vaccine. The vaccination activity mainly focused on adults – the group most affected by the outbreak. The media facilitated communication on the outbreak and vaccination activity to the public. Information on the outbreak, vaccination recommendations and case reporting and investigation procedures was posted on the Ministry's web site and sent by postal mail directly to public health centres, physicians of municipalities and the national public health laboratory.

The recommendation for vaccination also specified that health care workers should receive two doses of MMR vaccine if unvaccinated or found to be susceptible after being tested for immunity to measles.

Measles and rubella outbreaks in the Netherlands

An outbreak of measles is currently ongoing in the Netherlands. The first identified case of measles had a rash appearing on 12 May 2013. By the end of July, 780 cases of measles were reported, mostly in municipalities with vaccination coverage below 90%. Most cases of measles (93%) occurred among individuals of the orthodox Protestant denomination.

During the months of June and July, the country also experienced an outbreak of rubella. 54 cases of rubella were reported, all linked to a primary school of orthodox Protestant denomination. Of the 54 cases, 16 (30%) were laboratory confirmed. No complications were reported. Of the total cases of rubella, 15 cases (28%) were unvaccinated and vaccination status was unknown for the remaining 39 cases (72%). The most recent cases had a date of onset of 15 July 2013 and therefore the outbreak is considered to be over.

Most measles cases were unvaccinated (n=751; 97%), 20 cases (3%) were vaccinated with one dose, and two cases were vaccinated with two doses. In seven cases the vaccination status was unknown. Measles was laboratory confirmed in 220 cases (28%). The other

cases were epidemiologically linked with a confirmed case. The most-affected group was 4–12 year olds (n=451; 58%), followed by 13–18 year olds (n=190; 24%). Complications arising from measles, including acute encephalitis, pneumonia and otitis media, were reported in 94 cases (12%); and 37 cases (5%) were hospitalized. No measles-related deaths were reported.

In response to the measles outbreak, the Dutch health authorities are offering an extra MMR vaccine to infants aged 6–12 months in certain specific risk groups as explained below. The first regularly scheduled dose of MMR vaccine is being offered to children in these risk groups starting at 12 months rather than the usual 14 months. The supplemental and early vaccination campaign is targeting all infants and young children living in municipalities where MMR vaccination coverage is lower than 90% and, outside these municipalities, to all orthodox Protestant families. The campaign is primarily aiming to protect unvaccinated individuals below 14 months of age who are at increased risk for measles complications.

Parents of children living in 29 municipalities with vaccination coverage below 90% received a personal invitation for additional or early vaccination by post (n=29 municipalities, 7% of all municipalities in the Netherlands). The media specifically focused on reaching the orthodox Protestant communities outside of these municipalities. Furthermore, unvaccinated children 14 months and older were invited for catch-up vaccination through the media.

The authorities have furthermore encouraged health care workers born after 1965 to check their vaccination or immunity status and, if necessary, be vaccinated. Health care workers born before 1965 are considered immune by natural exposure. In addition, according to the national infectious diseases guidelines, unprotected close contacts (>6 months of age) of a case of measles are offered vaccination. If the close contacts are infants 4–6 months of age the administration of immunoglobulin is considered, taking into account the time of exposure and the measles immune status of the mother.

No specific control measures have been taken in response to the rubella outbreak. However, efforts to limit transmission of measles in infants and young children will also help to limit transmission of rubella virus since the MMR vaccine is being recommended.

Wild poliovirus 1 detection in Israel

The environmental surveillance system for poliovirus in Israel has detected the presence of wild poliovirus 1 (WPV1) circulating in the southern part of the country. The first positive samples from sewage were collected in Be'er-Sheva in February 2013. Since then the virus has been identified in different locations mostly in the southern part of Israel. Genetic sequencing tests have established that the virus is of the south Asian genotype and is genetically linked to WPV1 found in Pakistan in mid-2012 and in sewage samples in Cairo, Egypt in December 2012.

No cases of polio have been detected in Israel at the time of writing this report. The last outbreak of paralytic polio in Israel occurred in 1988 when 16 cases were reported. The outbreak instigated national immunization campaigns of 3 million people with oral polio vaccine targeting the population up to 40 years of age. Since then, Israel has been free of polio and vaccination coverage of children up to 6 years of age with 5 doses of poliovirus vaccine, including inactivated poliovirus vaccine (IPV) and the live attenuated oral poliovirus vaccine (OPV), has been high. The current schedule, in place since 2005, consists of 5 doses of IPV given at 2, 4, 6 and 12 months and 6 years of age.

The immediate response to the continued detection of WPV1 included a national catch-up campaign with IPV, targeting children who had not completed their primary IPV series or failed to receive booster doses. At the same time, incompletely vaccinated adults and adults without documentation of complete vaccination were offered IPV. The campaign started in early June 2013. Considering the mode and persistence of transmission this activity alone was not expected to interrupt WPV1 transmission. Therefore, a parallel nationwide immunization campaign aiming at high vaccination coverage with one dose of bivalent OPV has been undertaken. This campaign started in the southern part of the country. While both IPV and OPV provide personal protection from illness, OPV vaccine also induces gastrointestinal mucosal immunity that prevents further transmission of the virus. The campaign is targeting children up to 9 years of age – the cohorts that had never received OPV. The situation will be reassessed following the current round of immunization.

Emphasis has also been placed on the importance of hygiene measures, such as hand-washing and ensuring

sewage workers are vaccinated with IPV. In addition, surveillance for acute flaccid paralysis (AFP) has been enhanced since 1 June 2013 to include all ages and testing of cases of aseptic meningitis for wild poliovirus. Environmental surveillance for poliovirus has been intensified and extended geographically.

Comments

Measles and rubella

The number of reported measles cases in the European Region for the first half of 2013 is 8% less than that reported for the same period in 2012 (n=22 394). In 2013, new outbreaks of measles have occurred in several countries while in others transmission intensified. The large-scale outbreaks of measles in Georgia and Turkey are still ongoing,⁷ although the data suggests that disease transmission may be declining following a peak of occurrence in spring. Outbreak response vaccination activities are continuing in both of these countries. In Georgia plans are in place to ensure that all children through 14 years of age are adequately vaccinated.

Most of the measles cases in the Region occurred in the general population, however, minority groups were also affected. In addition to outbreaks affecting ultra-orthodox Jewish communities, Traveller communities and those following an alternative 'closer to nature' lifestyle, outbreaks of measles, and of rubella, have also affected orthodox Protestant communities.

Rubella continues to be reported in fewer countries than measles. However, the large number of cases (n=35 752) in Poland reported on the web site of the National Institute of Public Health - National Institute of Hygiene, for January till the end of July 2013⁸ is disconcerting in the light of the 2015 goal for eliminating the disease.

The current epidemiological situation of measles and to a lesser extent the persistent transmission of rubella in a few countries requires accelerated action and intensified efforts by all those involved, particularly politicians, decision makers, public health authorities and health care workers. These vaccination activities need to supplement routine vaccination programmes to close immunity gaps in the population. Engagement of the public is also warranted to generate demand for vaccination. At the same time, countries are required to conduct high-quality integrated epidemiological and laboratory surveillance of measles and rubella as

⁷ WHO EpiBrief, 2013, 2:1–7

⁸ National Institute of Public Health- National Institute of Hygiene [in Polish] http://www.pzh.gov.pl/oldpage/epimeld/2013/INF_13_07B.pdf

stipulated in the Region's measles and rubella elimination plan. As countries approach elimination, genotyping of circulating measles and rubella viruses becomes increasingly important to ascertain the lack of indigenous transmission.

Wild poliovirus

The detection of wild poliovirus 1 in sewage in Israel is of great concern and highlights the potential for re-establishing transmission in the Region. No clinical cases have been seen in Israel, most likely due to high immunization coverage with IPV. Nationwide measures to prevent cases of poliomyelitis and stop the

environmental spread of the virus have been adopted. A key aspect of the response is to increase public understanding of the importance of stopping the circulation of the virus, particularly in areas that have immunity gaps, thus protecting vulnerable members of the community. Addressing public concerns regarding re-introduction of a live attenuated vaccine has been a formidable challenge. The detection of wild poliovirus 1 in the environment highlights the importance of AFP surveillance, enterovirus surveillance and environmental surveillance for maintaining the Region's polio-free status.

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