

SURVEILLANCE REPORT

Measles and rubella monitoring

July 2015

Reporting on July 2014 – June 2015 surveillance data
and epidemic intelligence data to the end of July 2015

Main developments

Measles

- During the 12-month period from July 2014 to June 2015, a total of 4 224 cases was reported by 30 EU/EEA countries. Twenty-three countries reported consistently throughout this period.
- Germany accounted for 58.2% of the cases reported during this period.
- In 10 of the countries reporting consistently, the measles notification rate was less than one case per million population, including six countries which reported zero cases during the 12-month period.
- The diagnosis of measles was confirmed by positive laboratory results (serology, virus detection or isolation) in 63.4% of all cases.
- Of all cases, 89.2% had a known vaccination status and of these, 83.8% were unvaccinated. In the target group for routine childhood MMR vaccination (1–4-year-old children), 76.9% of the cases were unvaccinated.
- One measles-related death was reported during the period July 2014–June 2015, and eight cases were complicated by acute measles encephalitis.
- Since the previous report, outbreaks of measles have been detected in several countries in the WHO European Region: Austria, Belarus, Lithuania, Denmark, Norway, the United Kingdom, France, Sweden and Belgium.
- Outside of Europe, measles outbreaks are reported from the Democratic Republic of Congo, Guinea, Sudan, South Sudan, Brazil, Australia, Mali, Algeria, Chile, Peru, Cameroon, Taiwan, Iraq and Malaysia.

Rubella

- Twenty-eight EU/EEA countries reported a total of 2 808 rubella cases during the period July 2014 to June 2015. Twenty-one countries reported consistently for the 12-month period.
- In 18 of the countries reporting consistently, the rubella notification rate was less than one case per million population, including 11 countries reporting zero cases during the 12-month period.
- Poland accounted for 93.9% of all reported rubella cases in the 12-month period. Data were reported in an aggregated format. The highest number of cases was observed in 5–9- and 1–4-year-olds. 28.5% of the cases were unvaccinated. However, this figure needs to be interpreted with caution as only 37 cases were confirmed through laboratory testing.
- No outbreaks of rubella have been detected by epidemic intelligence since the last report.

Measles

Enhanced surveillance data

Measles surveillance data were retrieved from The European Surveillance System (TESSy) on 27 July 2015. The analysis covered the 12-month period from July 2014 to June 2015. Thirty EU/EEA countries reported case-based data for the 12-month period (Table 1).

During the 12-month period, 4 224 cases of measles were reported (Figure 1, Table 1). The number of cases observed in June 2015 by country and the notification rates for the 12-month period are shown in Figures 2 and 3. Over the 12-month period, the measles notification rate was less than one case per million population in ten of the 23 consistently reporting countries, including six countries reporting zero cases (Table 1). The country which reported the most cases was Germany (58.2% of all cases) (Table 1).

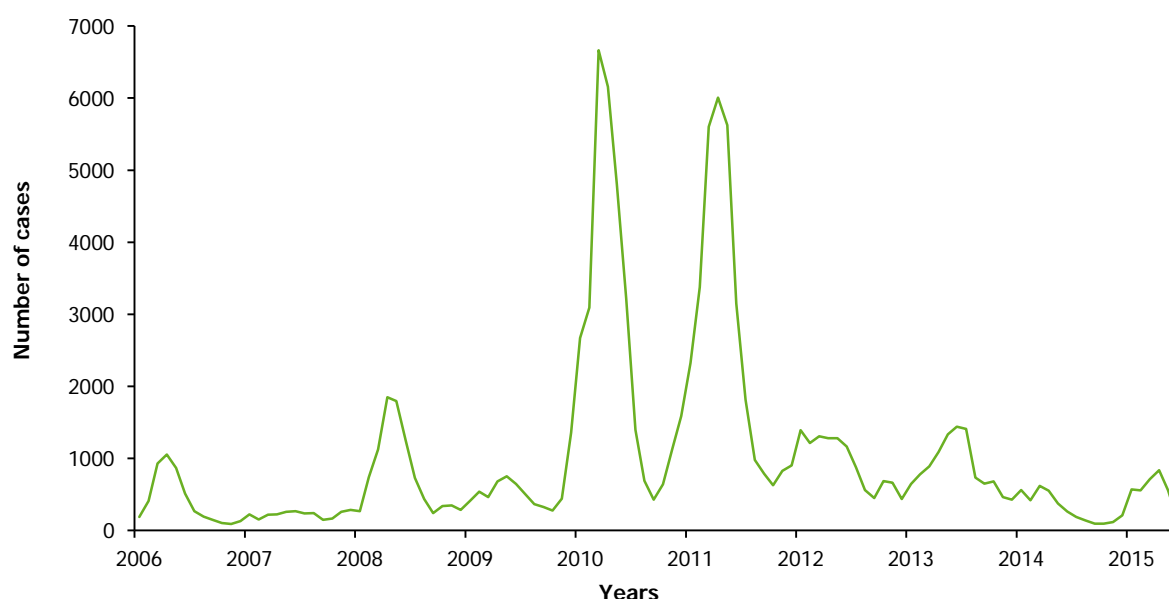
The highest notification rate was among infants under one year of age (54.6 cases per million population), followed by children aged 1–4 years (33.4) (Figure 4). The diagnosis of measles was confirmed by positive laboratory results (serology, virus detection or isolation) in 63.4% of all cases, although there were large variations between countries in the proportion of laboratory-confirmed cases. This can be attributed to the large variation in the number of cases reported by the countries, different laboratory capacities, and the fact that laboratory confirmation may not be considered necessary for all cases during an outbreak because of the higher positive predictive value of a clinical diagnosis in such a context.

Vaccination status was known for 3 768 (89.2%) of the 4 224 cases reported. Of these, 83.8% (3 157 cases) were unvaccinated, 10.4% (390) had received one dose of measles vaccine, 3.9% (147) had received two or more doses, and 1.8% (68) had received an unknown number of doses. The proportion of unvaccinated cases was high in all age groups and highest among infants under one year of age (94.0%) and children 10–14 years of age (85.4%). Cases in the former age group are often too young to be eligible for vaccination. Among children between one and four years of age – the age group targeted by routine childhood vaccination programmes – 76.9% of cases were unvaccinated (Figure 5). Measles vaccination coverage (two doses) for each country is presented in Figure 2.

Over the 12-month period, one death was attributed to measles, and eight cases were complicated by acute measles encephalitis.

The number of cases of measles in the European Union was low compared to recent years (Figure 1). This is most likely due to the impact that recent epidemics had on population immunity levels in EU/EEA Member States, i.e. the number of susceptible individuals within populations dropped. However, the number of cases remains high, particularly when considering that measles and rubella are targeted for elimination in Europe by 2015. High population immunity and high-quality surveillance are essential to achieving this goal. To interrupt the circulation of the virus, vaccination coverage of at least 95% must be reached, with two doses of measles-containing vaccine administered through routine vaccination*. Data from the World Health Organisation (WHO) 2013 show that coverage rates in 22 EU/EEA Member States are below this target, while pockets of susceptible individuals still exist throughout the EU – even in countries with high vaccine coverage. Measures implemented in the Member States will need to be expanded and accelerated if the elimination target is to be reached.

* World Health Organization, Regional Committee for Europe. Renewed commitment to elimination of measles and rubella and prevention of congenital rubella syndrome by 2015 and sustained support for polio-free status in the WHO European Region. World Health Organization, Regional Office for Europe: Copenhagen; 2012.

Figure 1. Distribution of measles cases by month, EU/EEA countries, January 2006–June 2015

Note: During the period January 2006–March 2015, 30 EU/EEA countries consistently reported data on measles every month. Data has not been reported by the Netherlands since April 2015, Romania since May 2015 and Bulgaria, Croatia, Denmark, Germany and Lithuania since June 2015. All 30 countries are included in the figure; Croatia is included from 2012 onwards.

Table 1. Number of measles cases by month and notification rate (cases per million) by country, July 2014–June 2015, EU/EEA countries

Country	2014						2015						Total cases	Cases per million	Total lab-positive cases
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
Austria	4	0	0	3	6	17	37	27	51	63	59	47	314	36.9	220
Belgium	0	1	4	2	5	8	5	7	5	2	18	4	61	5.4	32
Bulgaria	0	0	0	0	0	0	0	0	0	0	0	NR	0	0.0	0
Croatia	0	0	0	0	1	13	50	38	57	37	16	NR	212	49.9	132
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Czech Republic	22	12	4	0	0	0	1	3	1	0	3	1	47	4.5	47
Denmark	1	3	0	0	0	0	0	2	1	1	5	NR	13	2.3	13
Estonia	0	0	0	0	0	0	0	0	0	1	0	0	1	0.8	1
Finland	0	0	0	0	0	0	0	0	1	0	0	0	1	0.2	0
France	15	9	5	3	7	7	7	5	13	94	149	53	367	5.6	132
Germany	17	31	26	35	34	116	432	419	539	575	237	NR	2461	30.5	1548
Greece	0	0	0	0	1	0	0	0	0	0	0	0	1	0.1	1
Hungary	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Ireland	1	0	2	0	1	2	0	1	1	3	1	2	14	3.0	0
Italy	93	76	46	45	30	20	13	18	13	29	35	17	435	7.2	287
Latvia	2	0	0	0	0	0	0	0	0	0	0	0	2	1.0	2
Lithuania	1	0	0	0	0	0	0	0	4	4	0	NR	9	3.1	9
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Malta	0	0	0	0	0	0	0	0	0	0	1	0	1	2.4	1
Netherlands	1	2	2	0	0	0	0	0	0	NR	NR	NR	5	0.3	4
Norway	0	0	0	0	0	0	0	0	2	3	4	0	9	1.8	9
Poland	7	2	1	2	0	2	1	7	10	10	4	4	50	1.3	35
Portugal	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Romania	2	0	1	0	0	1	1	2	0	0	NR	NR	7	0.4	2
Slovakia	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Slovenia	1	0	0	0	28	22	6	8	2	2	0	0	69	33.5	67
Spain	1	1	1	0	0	1	9	8	7	4	6	4	42	0.9	36
Sweden	4	1	1	4	1	1	3	2	1	1	6	6	31	3.2	31
United Kingdom	17	2	1	2	2	0	6	11	3	7	13	8	72	1.1	71
Total	189	140	94	96	116	210	571	558	711	836	557	146	4224	8.2	2680

NR: Data not reported. Liechtenstein does not report.

Countries with a notification rate ≥ 1 per million population are highlighted in green. The threshold adopted as an indicator of progress towards elimination is an incidence of less than one case per million population per year (including confirmed, probable and possible cases, but excluding imported cases).

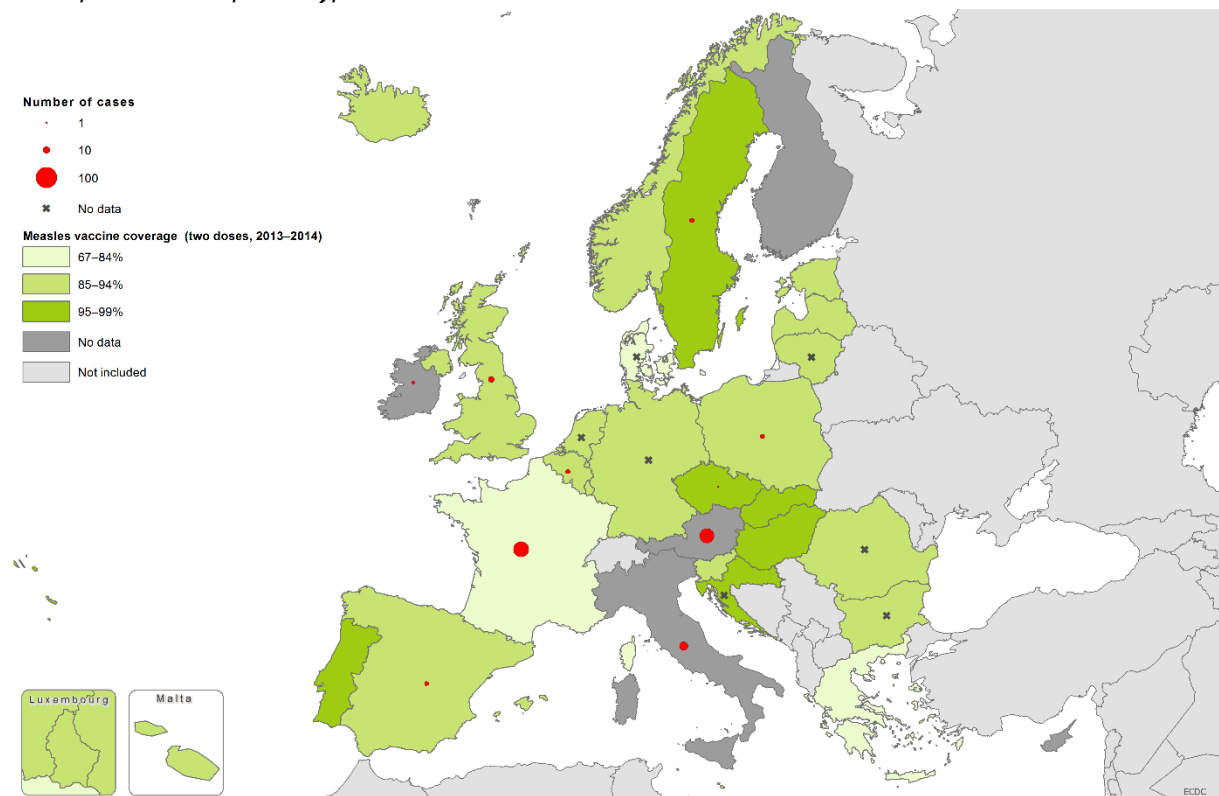
Achieving this target is consistent with progress towards elimination but does not define elimination or confirm that it has been achieved. In the table, all cases (endemic, imported, import-related) are included for the calculation of the notification rate.

All confirmed, probable, possible or unknown cases, as defined by the EU 2012 case definitions, are included.

Tables on measles cases in previous years are available from:

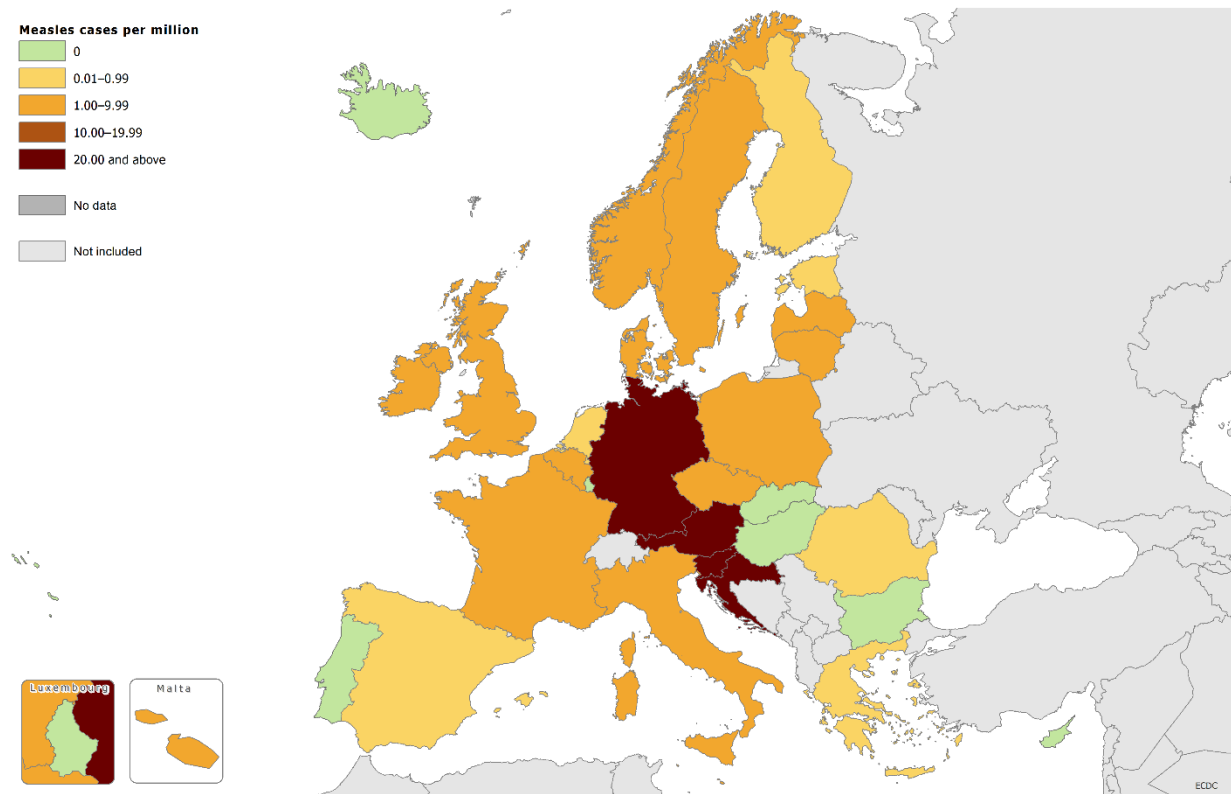
http://www.ecdc.europa.eu/en/healthtopics/measles/epidemiological_data/pages/annual_epidemiological_reports.aspx

Figure 2. Distribution of measles cases by country, June 2015 (N=146), and vaccine coverage (two doses, 2013–2014, WHO*), EU/EEA countries



* Coverage figures (%) are official national figures reported via the annual WHO/UNICEF Joint Reporting Form. See notes at the end of this report for further explanations.

Figure 3. Measles notification rate (cases per million) by country, July 2014–June 2015, EU/EEA countries (n=4 224)



Note: Notification rate is also calculated for countries that have not reported consistently for the past 12 months.

Figure 4. Measles notification rate (cases per million) by age group, July 2014–June 2015, EU/EEA countries (n=4 218 cases with known age)

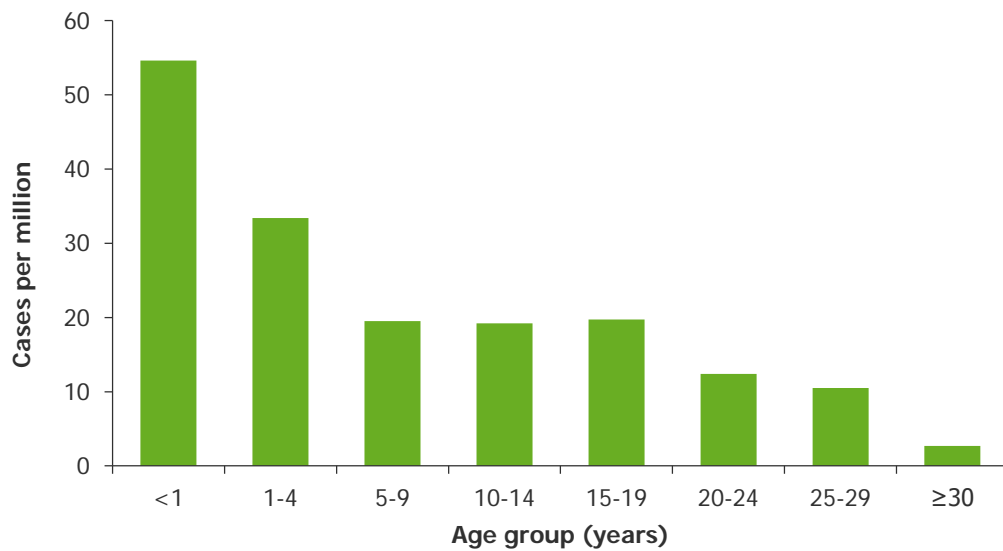
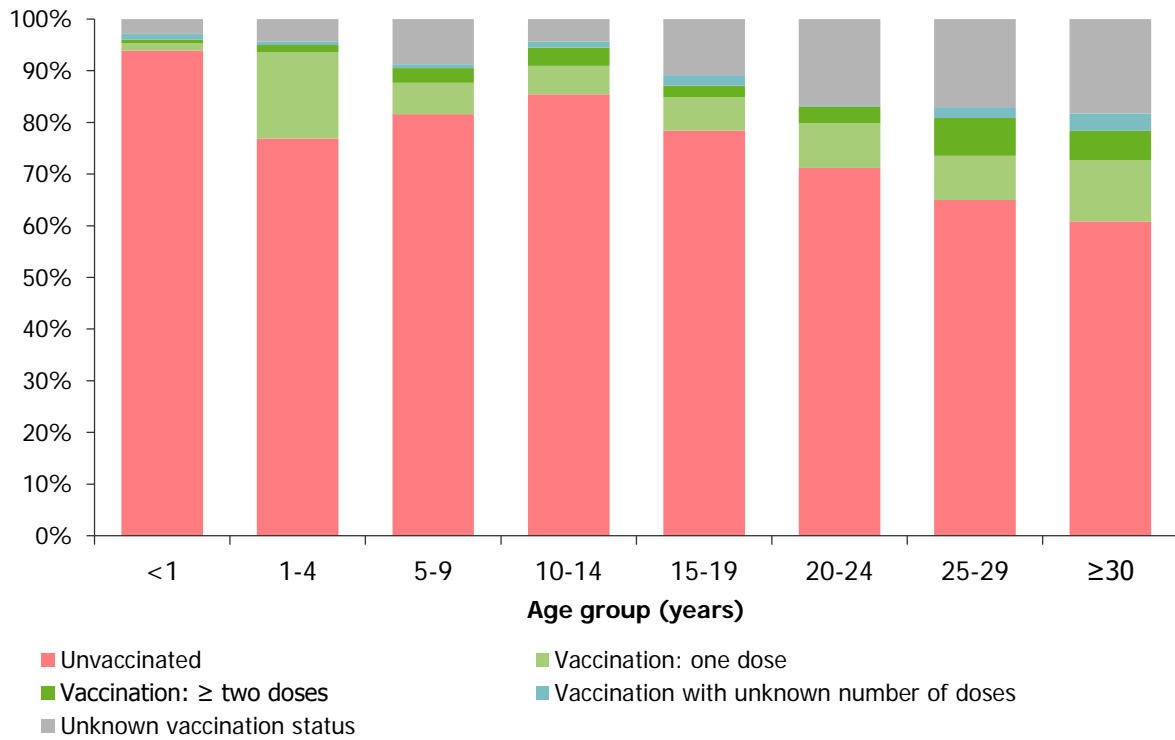


Figure 5. Percentage distribution of vaccination status among measles cases by age group, July 2014–June 2015, EU/EEA countries (n=4 218 cases with known age)



Epidemic intelligence

Updates since the last report[†]: EU Member States

Germany – update

During the first 22 weeks of 2015, 2 203 cases of measles were reported in Germany. Most cases occurred in Berlin (1 141) and Saxony (268), followed by Thuringia (168), Baden-Württemberg (108) and Bavaria (106). The outbreak in Berlin is subsiding.

A 'National action plan for the elimination of measles and rubella in Germany 2015–2020' was endorsed in June.

France – update

The number of cases in the outbreak in Alsace that started in mid-April has declined with only one case reported during the week leading up to 23 July 2015. The number of cases has reached 229.

Sweden

An outbreak involving five unvaccinated people was reported in Malmö in May 2015. The primary case, diagnosed on 30 April, is thought to have been infected in Germany. Several hundred contacts have been informed about the exposure and/or were given prophylaxis. An additional three cases were reported in June, including one adult and two children. All three cases were linked to the case, diagnosed in April. Seven of the eight cases were unvaccinated adults who probably received one dose in childhood.

Denmark

According to Statens Seruminstitut (SSI), six cases of measles were detected in Nordsjælland (North Zealand) in May 2015. The primary case was a 3-year-old unvaccinated child. Four additional cases occurred in the same family, including three children aged 0 to 10 years, all unvaccinated. An additional case of measles in a younger, fully vaccinated adult could be linked epidemiologically to the primary case during his hospitalisation in early May.

Genotyping of the virus isolated from the first case showed type H1, which is identical to the measles virus that gave rise to a major measles outbreak in China. The genotype is almost 100% identical to genotype H1 which was isolated from an adult Dane who became ill in early April after a stay in China at the end of March 2015. No contact could be established between these two cases, and as more than two incubation periods passed between the cases, it is possible that there was an intermediate patient. Virus samples isolated from two of the four members of the family also showed the H1 genotype.

As of week 20/2015, nine cases of measles have been reported in Denmark.

United Kingdom

Media reported a measles outbreak near Plymouth, with two confirmed cases in the Ashburton area and three other suspected cases nearby on 11 May. Letters were issued to parents advising them that measles was circulating in the community and that they should ensure their children were vaccinated with two doses of the MMR vaccine.

Norway

One case of measles was diagnosed in a pupil in Snåsa municipality in Nord-Trøndelag in early May.

Italy

An unvaccinated four-year old girl died of subacute sclerosing panencephalitis (SSPE).

Belgium

In March 2015, Belgium reported an increase in the reported number of measles cases in the province of Luxembourg. As of 29 May 2015, 20 cases have been reported for the year, compared with only one case during the same period in 2014. Contact tracing and control measures were carried out. Genotype D4 was identified in three cases, the same strain that is circulating in the USA. However, none of the Belgian cases reported any US contacts. People between 14 and 34 years of age were the most affected age group. Data on the strains were entered into the MeaNS database.

Lithuania

Health authorities reported a measles outbreak in Lithuania. As of 27 July 2015, 44 cases have been reported. The outbreak affects several regions, including the capital Vilnius.

[†] <http://www.ecdc.europa.eu/en/publications/Publications/Measles-rubella-quarterly-Dec2014.pdf>

Austria

The Austrian Ministry of Health report an increase in reported measles cases in 2015. Between 1 January and 22 July 2015, 305 measles cases were reported in eight of the nine states. Several clusters were reported, with the highest number of cases reported in Lower Austria (Niederösterreich: 40%), Upper Austria (Oberösterreich: 27%), Vienna (Wien: 19%) and Styria (Steiermark: 10%). The cases occurred in all age groups, with adolescents and young adults being disproportionately affected. The majority of cases were not vaccinated (70%), or had unknown vaccination status (21%). Eight of the cases were infants too young to be vaccinated. So far, 57 (19%) of the cases needed hospitalisation. Sixteen cases were reported as 'acquired abroad': eight from Germany, three from Bosnia and Herzegovina, and one case each from India, Hungary, Romania, Spain and France.

Twelve transmissions occurred in hospitals or physicians' waiting rooms. Sixteen healthcare workers have been affected by measles this year, the majority of them not vaccinated (69%).

Updates since the last report: rest of the world

Belarus

According to media reports, a laboratory-confirmed case was reported in an unvaccinated 29-year-old physician in Grodno, a city that has not reported any cases of measles over the past 13 years. The patient, who was hospitalised, reported no history of travel. Investigations and control measures are ongoing.

The last outbreak in Belarus was in 2014 when a driver who had worked at the Sochi Olympic Games was diagnosed with measles after returning from Russia. He infected 11 people while visiting a hospital. In February this year, there was one case of measles in a returning traveller who had visited Italy and Spain.

Vaccination coverage against measles is high in Belarus (97% and above).

Australia

According to media reports, a Queensland paramedic fell ill with measles on 19 May 2015. He attended four Brisbane hospitals for work on multiple occasions, not knowing he was contagious. The 32-year-old man also visited Moreton Island during his incubation period. He was admitted to hospital in a serious condition.

Taiwan

On 21 May 2015, the Centers for Disease Control in Taipei reported that it suspects that four employees at a duty-free shop in Taipei who were diagnosed with measles the previous week might have contracted the disease from tourists. None of the cases had travelled overseas before the onset of the disease. More than 1 200 identified contacts, including their families and co-workers as well as the medical personnel that treated them, were monitored until 3 June 2015.

Guinea – update

As reported in the media, the disease surveillance system in Guinea recorded a cumulative 1 866 suspected cases of measles and seven deaths between the beginning of week 20/2015 and 20 May 2015. During week 20, peaks were observed in the health districts of Macenta (19 suspicious cases, no deaths), Lola (9 suspects, no deaths) and Nzérékoré (9 suspects, no deaths). In total, 127 samples were collected, 66 (52%) of which tested positive for measles IgM. All negative cases of measles also tested negative for rubella.

Democratic Republic of Congo

Media report that during the first five months of 2015 more than 12 200 cases have been reported in Katanga, an increase of over 50% compared with the same period last year. Citing provincial health authorities, the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) reported that twelve health zones are affected and 185 of the cases died

Sudan

According to media reports, Sudan recorded 2 511 cases of measles (including 38 deaths) as of 24 May 2015.

Mali

A measles epidemic was reported in May 2015 in the health district of Tessalit and Kida, with 16 confirmed cases. A temporary medical mission of WHO, which was already on the ground to support the delivery of health services, intends to organise a vaccination campaign to respond to the epidemic.

Algeria

In the media, forty cases of measles were reported in children in Daira Bordj Badji Mokhtar near the Malian border. These cases were considered as imported from Mali.

Iraq

According to media reports, there are several outbreaks of measles in different districts of Iraq. As of 20 April 2015, 842 cases were reported for the year.

Chile

The Ministry of Health reported six confirmed cases in June 2015. The primary case was a Chilean traveller who was probably infected in China or on his return trip in May. Other cases include a physician and an infant of 10 months (i.e. too young to have been vaccinated). Genotype H1 was identified in all cases but one, the same strain that is circulating in Asia, including China. Contact tracing is ongoing. To date, 193 suspected cases have been reported. Of these, 146 were discounted, and for 42 the result is pending. Endemic transmission of measles was interrupted in Chile in 1993.

Peru

The Ministry of Health carried out a vaccination campaign for children between two and four in June and July 2015. The campaign covered 20 districts of Lima and Callao, 5 districts of the city of Cusco, and the district Andahuaylillas. The reason was the detection of three suspected cases of measles in German nationals. Contact tracing is ongoing to identify secondary cases.

Brazil – update

According to the epidemiological bulletin released on 19 June by the Department of Health, the number of confirmed measles cases in 2015 in Ceará reached 161. Fortaleza and Caucaia continue to lead the list of municipalities with measles cases. Vaccination campaigns are ongoing.

Cameroon

Media report that an outbreak of measles is ongoing in the town and district of Benakuma; as of 21 July 2015, 148 cases of measles were reported, including nine fatalities.

South Sudan

According to media reports, 338 measles cases of measles, including five deaths, were registered in Bentiu between the beginning of the year and 12 July 2015.

Malaysia

There are media reports that Kuala Lumpur recorded a total of 73 cases of measles in the first half of 2015; 79 per cent of cases were unvaccinated.

United States

According to a press release from the Washington State Department of Health, a woman died in the spring of 2015 due to an undetected measles infection that was discovered at autopsy. The woman was most likely exposed to measles at a local medical facility during a recent outbreak in Clallam County, Washington. She was there at the same time as a person who later developed a rash and was contagious for measles. The woman had several other health conditions and was on medications that contributed to a suppressed immune system. The cause of death was pneumonia due to measles. This was the first fatality in 12 years in the USA due to measles.

In accordance with a new law, California will require schoolchildren to receive vaccinations unless there are medical reasons not to do so. Families with a nonmedical reason for declining vaccines will have to home-school their children. Unvaccinated children who are currently in school will be allowed to remain, although they will be expected to show proof of vaccination when they enter kindergarten and seventh grade.

Publications

Mina MJ, Metcalf CJ, de Swart RL, Osterhaus AD, Grenfell BT. Long-term measles-induced immunomodulation increases overall childhood infectious disease mortality. *Science*. 2015 May 8;348(6235):694-9. Available from: <http://www.sciencemag.org/content/348/6235/694.full>

Immunosuppression after measles is known to predispose people to opportunistic infections for a period of several weeks to months. The authors show that measles has a more prolonged effect on host resistance, extending over 2 to 3 years. Their data provide an explanation for the long-term benefits of measles vaccination in preventing all-cause infectious disease. By preventing measles-associated immune memory loss, vaccination protects polymicrobial herd immunity.

Banerjee E, Hickman C, Engels K, Kenyon C. Notes from the field: measles transmission in an international airport at a domestic terminal gate – April–May 2014. *MMWR Morb Mortal Wkly Rep.* 2015 Jun 26;64(24):679. Available from: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6424a6.htm?s_cid=mm6424a6_x

A 46-year-old man contracted measles from a 19-months-old child without actually meeting the child. They both travelled through a Chicago airport and used the same gate for their respective flights. Although transmission could have occurred anywhere in the airport where the child and the adult were both present, it most likely occurred in the gate area during the 46-minute interval between the arrival of the adult's flight and the scheduled departure of the child's flight. Both cases were genotyped as D8, endemic in India, where the child evidently acquired measles, and the corresponding nucleotide sequences were determined to be identical. The adult was admitted for isolation only at a Massachusetts hospital during the last five days of his infectious period. The child was admitted for three days at a Minnesota hospital. Both recovered fully.

Gardy JL, Naus M, Amlani A, Chung W, Kim H, Tan M, et al. Whole-genome sequencing of measles virus genotypes H1 and D8 during outbreaks of infection following the 2010 Olympic Winter Games reveals viral transmission routes. Available from: <http://m.jid.oxfordjournals.org/content/early/2015/06/29/infdis.jiv271.full.pdf>

Following the 2010 Olympics Winter Games in Vancouver, there was a measles outbreak in British Columbia (BC). In early March 2011, three adults, who all had visited the Games, became ill. By the end of April 2011, 82 people were infected. Researchers from the BC Centre for Disease Control and the University of British Columbia sequenced the whole genome of the virus using samples collected from infected people to study the transmission routes of the virus. Genetic analysis revealed that there were two distinct outbreaks, one caused by genotype H1, one by genotype D8. The team was able to sequence 27 complete genomes from both genotypes, making this the biggest measles genomics effort to date. They found that while the H1 virus spread across BC, the D8 outbreak remained restricted to Vancouver, and that all the northern BC cases arose from a single introduction, likely from a person travelling along Highway 97. D8 also occurs in Italy, the United States and India, H1 in China.

WHO [no authors listed]. Genetic diversity of wild-type measles viruses and the global measles nucleotide surveillance database (MeaNS). *Wkly Epidemiol Rec.* 2015 Jul 24;90(30):373-80. Available from: <http://www.who.int/wer/2015/wer9030.pdf>

Rubella

Enhanced surveillance data

Rubella surveillance data were retrieved from The European Surveillance System (TESSy) on 27 July 2015. The analysis covered the 12-month period from July 2014 to June 2015.

Two EU countries – Belgium and France – do not operate rubella surveillance systems with national coverage and therefore do not contribute data to the EU/EEA enhanced rubella surveillance. Of the 28 contributing countries, 21 reported data for the entire 12-month period. Austria did not report data for November and December 2014, and June 2015; Romania did not report for May and June 2015; and Bulgaria, Croatia, Denmark, Germany and Lithuania did not report data for June 2015 (Figure 6, Table 2).

During the period July 2014–June 2015, 2 808 cases of rubella were reported. Three per cent (n=91) of the cases were reported as laboratory confirmed (by serology, virus detection or isolation) (Table 2). The number of cases reported by country in June 2015 and the notification rates for the entire 12-month period are shown in Figures 6 and 7. The rubella notification rate was less than one case per million population in 18 of the 21 countries that reported consistently over the 12-month period, including 11 countries that reported zero cases.

The highest notification rates were observed in cases between one and four years of age (50.8 cases per million population) and in cases between five and nine years of age (35.8) (Figure 8).

Poland accounted for 93.9% (n= 2 636) of all reported rubella cases in the 12-month period. Data were reported in an aggregated format. The highest number of cases was observed among 1–4-year-olds (n=847) and 5–9-year-olds (n=777).

A total of 750 cases (28.5%) in Poland reported over the 12-month period were unvaccinated, 1 283 (48.7%) cases were vaccinated with one dose, 203 (7.7%) cases had received two or more doses, and 400 (15.2%) cases had an unknown vaccination status. However, these figures need to be interpreted with caution as only 37 cases were reported with a positive laboratory test.

Table 2. Number of rubella cases by month and notification rate (cases per million) by country, July 2014–June 2015, EU/EEA countries

Country	2014						2015						Total cases	Cases per million	Total lab-positive cases
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun			
Austria	1	0	2	0	NR	NR	0	0	0	1	0	NR	4	0.5	4
Belgium	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	-
Bulgaria	0	0	0	0	0	0	0	1	0	0	2	NR	3	0.4	0
Croatia	0	0	0	0	0	0	0	0	0	0	0	NR	0	0.0	0
Cyprus	0	0	0	0	0	0	0	0	2	0	0	2	2.3	2	
Czech Republic	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Denmark*	0	0	0	0	0	0	0	0	0	0	0	NR	0	0.0	0
Estonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Finland	0	0	0	0	0	0	0	0	0	1	0	1	1	0.2	0
France	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	-
Germany	20	5	8	8	8	2	11	6	8	15	9	NR	100	1.2	23
Greece	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Hungary	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Ireland	1	1	0	0	0	0	0	0	0	1	2	0	5	1.1	0
Italy	0	0	3	3	0	1	1	1	9	6	2	7	33	0.5	12
Latvia	1	0	0	0	0	0	0	0	0	0	0	0	1	0.5	1
Lithuania	0	0	0	0	0	0	0	0	0	0	0	NR	0	0.0	0
Luxembourg	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Netherlands	1	0	0	0	0	0	0	0	0	0	0	0	1	0.1	1
Norway	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Poland	407	157	158	199	226	239	216	199	256	231	183	165	2636	69.3	37
Portugal	0	2	1	0	2	0	0	0	1	0	0	1	7	0.7	3
Romania	1	0	2	0	1	1	0	2	0	0	NR	NR	7	0.4	2
Slovakia	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Slovenia	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Spain	0	1	1	0	0	0	0	1	1	0	0	0	4	0.1	2
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
United Kingdom	0	0	0	0	0	0	0	1	3	0	0	0	4	0.1	4
Total	432	166	175	210	237	243	228	211	278	256	199	173	2808	**	91

NR: Data not reported. Liechtenstein does not report.

Countries with a notification rate ≥ 1 per million population are highlighted in green. The threshold adopted as an indicator of progress towards elimination is an incidence of less than one case per million population per year (including confirmed, probable and possible cases but excluding imported cases). Achieving this target is consistent with progress towards elimination, but does not define elimination or confirm that it has been achieved. In the table, all cases (endemic, imported, import-related) are included for the calculation of the notification rate. For countries that did not report data for all 12 months, notification rates might be underestimated.

All confirmed, probable, possible or unknown cases, as defined by the EU 2012 case definition, are included.

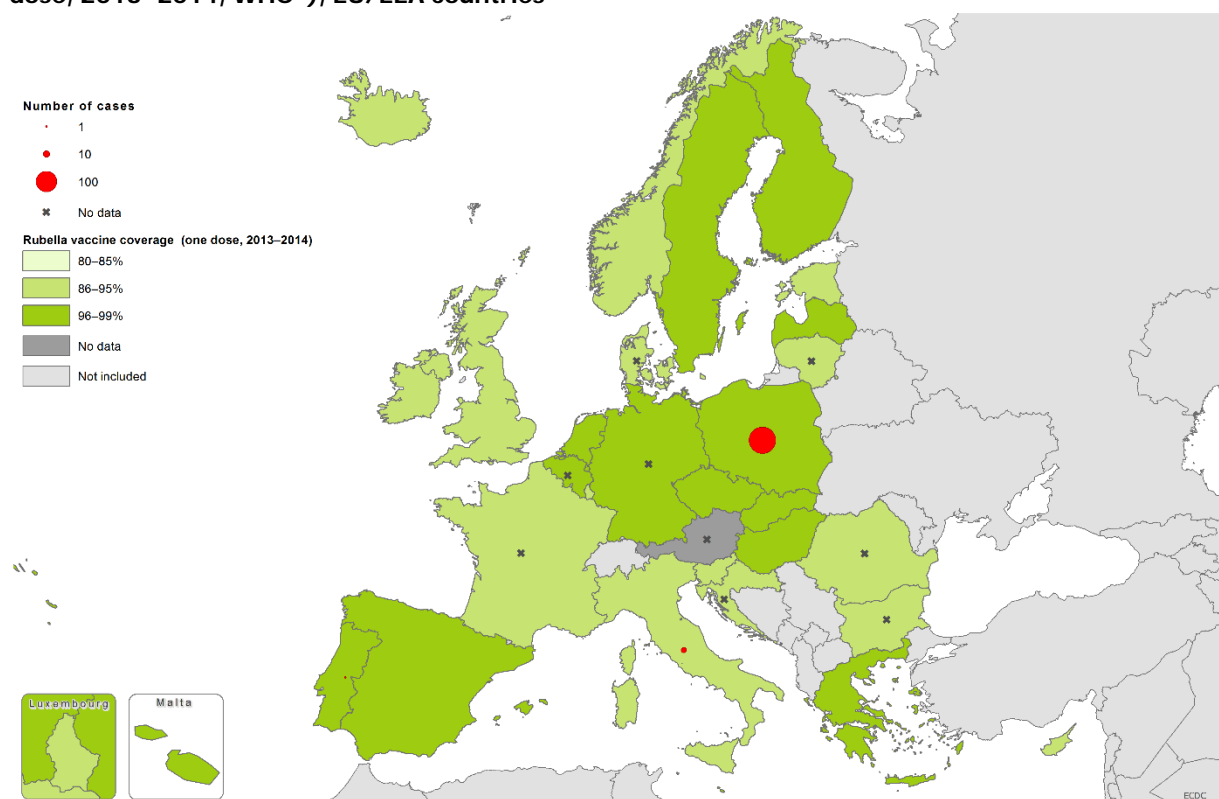
* The national surveillance system for rubella in Denmark currently only captures rubella infections during pregnancy; therefore the true incidence of rubella in the Danish population will be underestimated.

** Due to the high proportion of cases reported by Poland, an overall notification rate for Europe is not presented.

For tables relating to number of rubella cases in previous years, see:

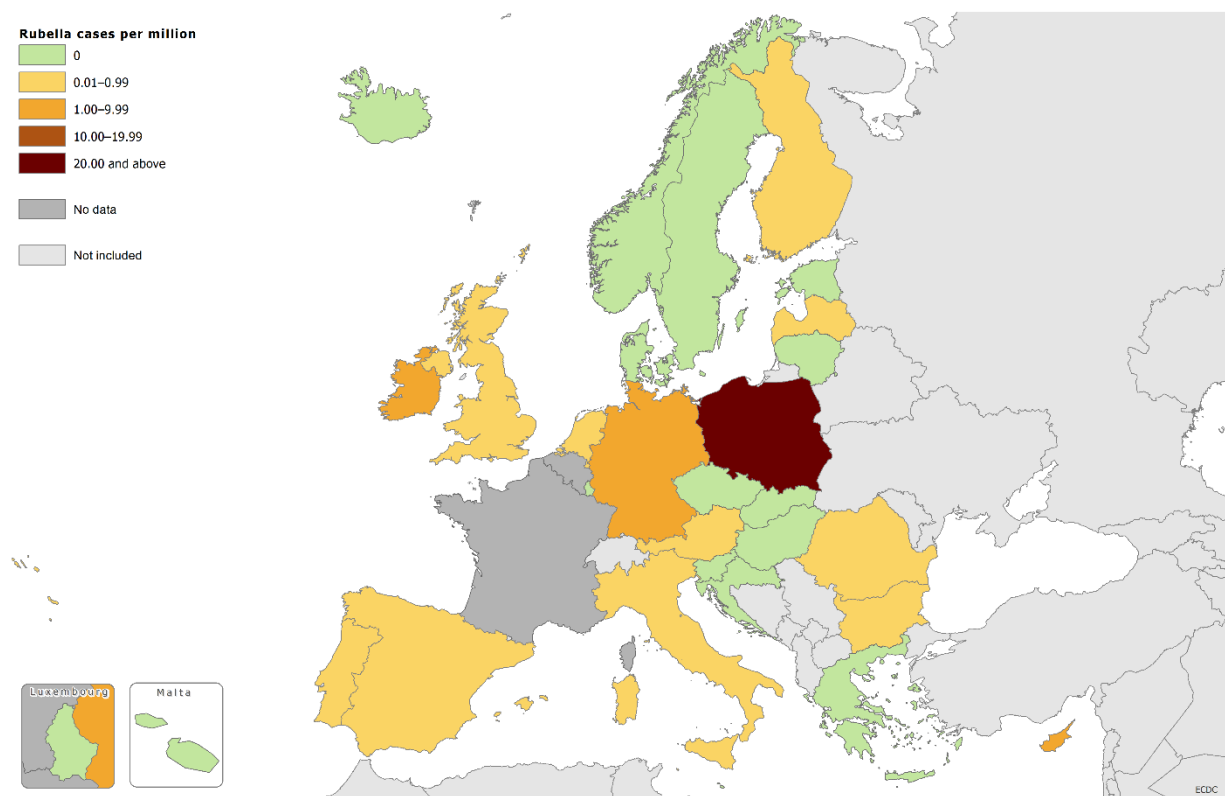
http://www.ecdc.europa.eu/en/healthtopics/rubella/epidemiological-data/pages/epidemiological_data.aspx

Figure 6. Number of rubella cases by country, June 2015 (n=173), and rubella vaccine coverage (one dose, 2013–2014, WHO*), EU/EEA countries



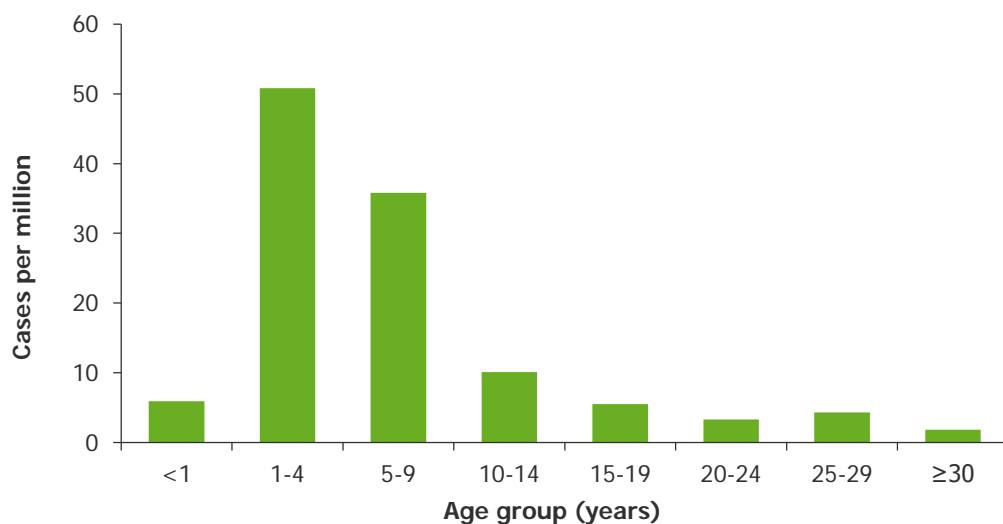
* Coverage figures (%) are official national figures reported via the annual WHO/UNICEF Joint Reporting Form. See notes at the end of this report for further explanations.

Figure 7. Rubella notification rate (cases per million) by country, July 2014–June 2015, EU/EEA countries (n=2 808)



Note: Notification rate is also calculated for countries that have not reported consistently for the past 12 months.

Figure 8. Rubella notification rate (cases per million) by age group, July 2014–June 2015, EU/EEA countries (n=2 808 cases with known age)



Epidemic intelligence

Updates since the last report

No new outbreaks have been detected since the last monthly update[†].

The Americas are declared free of endemic transmission of rubella and congenital rubella syndrome (CRS), according to a press release from [PAHO/WHO](#).

Rubella and CRS are the third and fourth diseases to be eliminated in the region, following smallpox in 1971 and polio in 1994. The Americas Region was the first in the world to eliminate these diseases.

Useful links

More information about measles and rubella is available on the ECDC website:

Measles health topic page, ECDC: <http://ecdc.europa.eu/en/healthtopics/measles/Pages/index.aspx>

Rubella health topic page, ECDC: <http://ecdc.europa.eu/EN/HEALTHTOPICS/RUBELLA/Pages/index.aspx>

Measles and rubella atlases to monitor progress toward elimination, ECDC: <http://ecdc.europa.eu/en/data-tools/atlas/Pages/atlas.aspx>

Vaccination schedules in EU/EEA countries, ECDC: <http://vaccine-schedule.ecdc.europa.eu/Pages/Scheduler.aspx>

Let's talk about protection, ECDC: <http://www.ecdc.europa.eu/en/healthtopics/immunisation/comms-aid/Pages/protection.aspx>

Information about vaccines and immunisation from the website of the World Health Organization's Regional Office for Europe: <http://www.euro.who.int/en/health-topics/communicable-diseases/measles-and-rubella>

Website of the WHO CISID database: <http://data.euro.who.int/cisid/>

Immunisation health topic page, ECDC: <http://ecdc.europa.eu/en/healthtopics/immunisation/pages/index.aspx>

Notes

The European Surveillance System (TESSy) collects a 'date used for statistics', which is a date chosen by the country for reporting purposes. This date may indicate onset of disease, date of diagnosis, date of notification or date of laboratory confirmation, depending on reporting practices in the respective countries.

Countries report on measles, rubella and other vaccine-preventable diseases to the European Surveillance System at their own convenience. This means that the date of retrieval can influence the data presented in this report. For this reason, the date of data retrieval is indicated for each issue. Later retrievals of data relating to the same period may result in slightly different numbers, as countries have the possibility to update data in TESSy retrospectively.

The vaccine coverage figures displayed in the maps of this report were retrieved from the WHO Global Database, which is available from:

http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tscoveragerubella1.html and

http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tscoveragemcv2.html

Measles

2013 vaccine coverage (estimate) of two doses of measles-containing vaccine was used; if estimates from 2013 were not available, estimates from 2012 were used. Some countries only report the coverage of one dose of measles-containing vaccine. For more information, please check the above link to the WHO Global Database.

Rubella

2013 vaccine coverage (estimate) of one dose of rubella vaccine was used; if estimates from 2013 were not available, estimates from 2012 were used.

Notification rates were calculated using the most recent population estimates available from Eurostat (2014).

[†] <http://www.ecdc.europa.eu/en/publications/Publications/Measles-rubella-quarterly-Dec2014.pdf>