

European monthly measles monitoring (EMMO)

June 2011

Main developments

- Between January and June 2011, more than 21 000 measles cases were reported from 30 EU and EEA/EFTA countries, with France (12 699), Spain (2 261), Romania (1 619), Italy (>1 500) and Germany (1 193) accounting for the majority of cases.
- Since the last update in May, a new outbreak was reported from the autonomous Province of Bolzano, Italy, with more than 600 reported cases in 2011.
- Seven of the 30 countries did not report any measles case in 2011: Cyprus, Hungary, Iceland, Latvia, Liechtenstein, Luxembourg, and Slovakia.
- The World Youth Day and other mass-gathering events in Europe during the summer months increase the risk of measles transmission in Europe and exportation of measles to other parts of the world.

Background

Measles is a highly infectious and potentially fatal disease which can be prevented by a safe and effective vaccine. When given in two doses, at least 98% of vaccine recipients develop life-long protective immunity against the disease. As the measles virus only infects humans, the disease could theoretically be eradicated if high enough vaccination coverage is achieved in all populations. The countries in the European Region of the World Health Organization, including the EU and EEA/EFTA countries, have committed to eliminate measles by 2015. Elimination of measles requires sustained vaccination coverage above 95% with two doses of a measles-containing vaccine (MCV).

ECDC monitors measles transmission in the EU and EEA/EFTA countries and produces monthly epidemiological updates. These European Monthly Measles Monitoring (EMMO) reports are based on information from multiple sources including national websites, the EUVAC.NET database, the Early Warning and Response System (EWRS), validated media reports, and personal communication from national authorities. The period covered will differ between countries, and the number of cases reported in EMMO should be treated as preliminary data.

EMMO data on MCV coverage is retrieved from the official WHO Computerized Information System for Infectious Diseases (CISID) unless otherwise stated. CISID data originates from the WHO/UNICEF Joint Reporting Forms submitted annually by WHO member states. It should be noted that countries use different methodologies and definitions for assessing vaccination, and that direct comparisons of coverage between countries is not possible. The recommended age for the second dose of MCV varies considerably between countries, which further complicates the picture. Only 18 out of 27 EU countries assess MCV 2 coverage at 24 months of age.

The purpose of EMMO is to provide timely public updates on the measles situation in Europe for effective disease control measures, and in support of the common 2015 measles elimination target.

Errata. The following corrections were made on 15 July 2011:

Page 2, Table 1: 'Austria, incidence density: 0.40, cases reported until: 27 June. Germany, deaths: 1'.

Page 3, Table 1: 'Total: 21326, deaths: 7'.

Overview

Measles is re-emerging in Europe. In 2010, more than 30 000 measles cases were reported by EU and EEA/EFTA countries, representing a fivefold increase compared to the annual average for the preceding five years.

During the first six months of 2011, more than 21 000 cases were reported (Table 1) from EU and EEA/EFTA countries. These are preliminary data and this number is likely to increase as more data becomes available. In addition, significant under-reporting is assumed from several countries.

Eighty-five percent of the reported cases in 2010 were unvaccinated, and the situation is similar in 2011. The dramatic increase in 2010 was primarily due to a large outbreak in Bulgaria during 2009 and 2010, with more than 24 000 reported cases and 24 deaths. The outbreak has subsided by now, with Bulgaria reporting only 157 cases so far this year.

However, the huge ongoing outbreak in France which accounts for more than half of the reported cases in 2011, including six deaths, is not the only upsurge of measles in Europe. Several other countries (Romania, Switzerland, Spain, Belgium, Denmark, UK and Italy) also reported a considerable increase in the number of cases during 2011 (Table 1, Figure 2) compared with 2010. The outbreaks in the EU are principally the result of transmission within and between Member States. Most cases still occur in un- or incompletely immunised individuals.

Seven of the 30 EU and EEA/EFTA countries did not report any measles case in 2011: Cyprus, Hungary, Iceland, Latvia, Liechtenstein, Luxembourg, and Slovakia (Table 1).

On 6 June 2011, the [Council of the European Union](#) concluded that additional efforts are needed to better control the situation related to measles in the EU and invited Member States to strengthen their immunisation activities, particularly by targeting pockets of susceptible individuals.

ECDC is [stressing the importance](#) of getting vaccinated against infectious diseases, especially measles. Vaccination is particularly relevant to European Union citizens planning to attend events such as concerts, sporting events and religious gatherings. Mass gathering events such as the upcoming World Youth Day in Madrid in August 2011, which is expected to be attended by 350 000 people from across the globe, come with a considerable risk that susceptible participants will be exposed to measles. Infected visitors might return to their home countries before onset of symptoms and spread the disease there.

Several countries recommend that people planning to travel should update their vaccination status before their summer holidays.

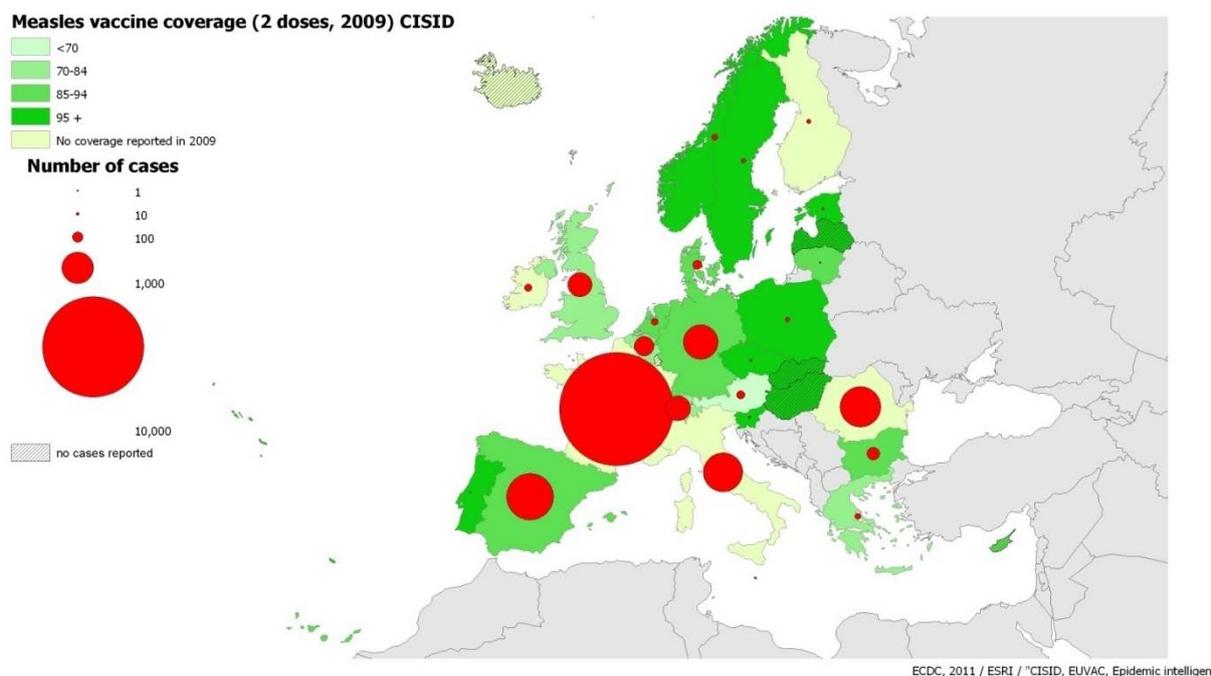
Table 1: Cumulative number of measles cases and deaths, incidence density, date of last report, and source of information; EU/EEA countries, 2011

Country	Cumulative number of cases	Deaths	Incidence density*	Cases reported until	Source
Austria	60		0.40	27 June	Ministry of Health
Belgium	382		2.23	7 June	Scientific Institute of Public Health (unpublished data)
Bulgaria	157		1.37	26 June	National Centre of Infectious and Parasitic Diseases (unpublished data)
Cyprus	0		0.00	31 May	EUVAC.NET
Czech Republic	4		0.03	31 May	EUVAC.NET
Denmark	83		0.90	16 June	Statens Serum Institute
Estonia	5		0.25	31 May	EUVAC.NET
Finland	18		0.22	31 May	EUVAC.NET
France	12 699	6	14.45	20 April	Institute de Veille Sanitaire
Germany	1 193	1	0.84	22 June	Robert Koch Institute
Greece	34		0.20	31 May	EUVAC.NET
Hungary	0		0.00	31 May	EUVAC.NET
Iceland	0		0.00	31 May	EUVAC.NET
Ireland	53		0.73	11 June	Health Protection Surveillance Centre
Italy	1 500		1.65	31 May	Istituto Superiore di Sanità (unpublished data)
Latvia	0		0.00	31 May	EUVAC.NET
Liechtenstein	0		0.00	31 May	Amt für Gesundheit (unpublished data)
Lithuania	2		0.04	31 May	EUVAC.NET
Luxembourg	0		0.00	30 April	EUVAC.NET
Malta	2		0.32	31 May	EUVAC.NET
Netherlands	44		0.15	26 June	National Institute for Public Health and Environment (unpublished data)

Country	Cumulative number of cases	Deaths	Incidence density*	Cases reported until	Source
Norway	34		0.46	31 May	EUVAC.NET
Poland	16		0.03	31 May	EUVAC.NET
Portugal	1		0.01	31 May	EUVAC.NET
Romania	1 619		5.00	31 May	National Centre for Communicable Disease Surveillance (unpublished data)
Slovakia	0		0.00	31 Mar	EUVAC.NET
Slovenia	3		0.10	31 May	EUVAC.NET
Spain	2261		2.78	26 June	Instituto de Salud Carlos III (unpublished data)
Sweden	17		0.10	28 June	Smittskyddsinstitutet
Switzerland	589		4.25	27 June	Bundesamt für Gesundheit
United Kingdom	550		0.59	31 May	Health Protection Agency, Health Protection Scotland
TOTAL	21 326	7			

* Incidence density is defined as number of cases per 10 million population and per day

Figure 1: Distribution of measles cases identified through epidemic intelligence (2011) and 2 dose measles vaccine coverage (2009, CISID*); EU and EEA/EFTA countries

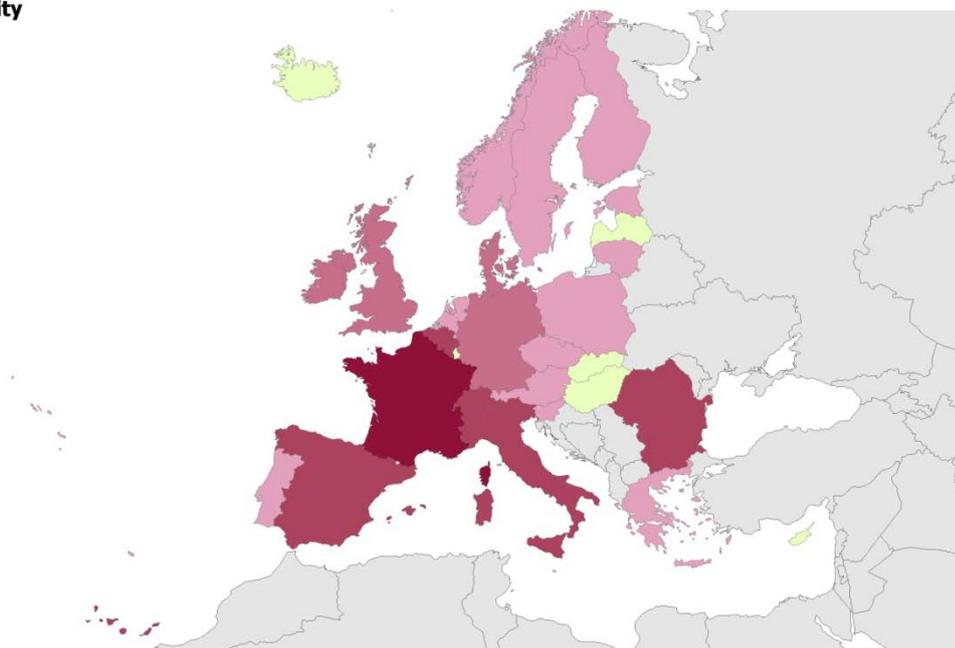
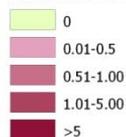


* Coverage figures (%) are official national figures reported via the annual WHO/UNICEF Joint Reporting Form and WHO Regional Offices reports (as of 1 June 2011).

Figure 2: Distribution of incidence density (cases/10 million/day) by country; EU and EEA/EFTA countries, as of June 2011

Cases/population/day per 10 Million

Incidence density



ECDC, 2011 / ESRI / "CISID, EUVAC, National sources"

New outbreaks

Since the [previous EMMO on 12 May 2011](#), the following new measles outbreak was reported to ECDC or detected through ECDC's epidemic intelligence activities:

Italy

Source: *Istituto Superiore di Sanità, Italy (unpublished data)*

A measles outbreak is ongoing in the German speaking province of Bolzano (population approximately 500 000) in northern Italy. Transmission started increasing in November 2010 and more than 600 cases were reported between January and June 2011. This province is known to have the lowest measles vaccination uptake in the country (70.8% MCV 1 coverage in children less than two years of age), and vaccination opposition is reported to be strong.

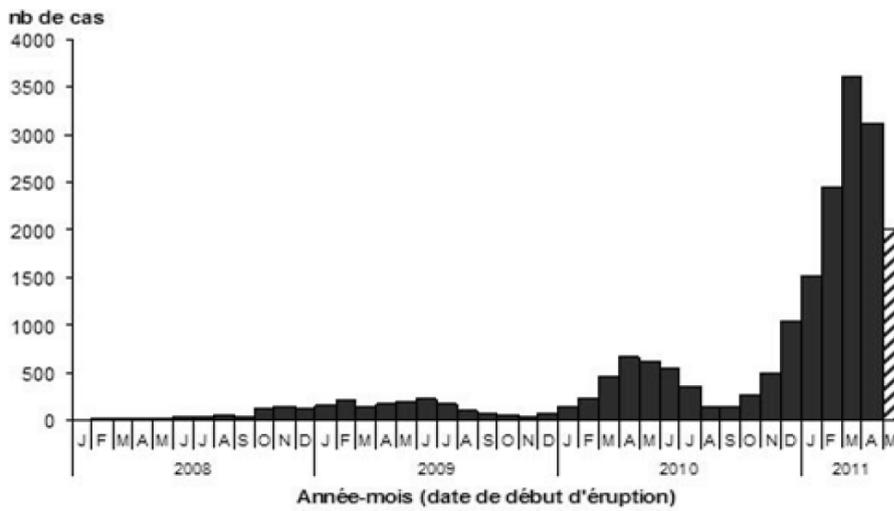
Updates on ongoing outbreaks and endemic transmission

France

Source: *Institute de Veille Sanitaire, France*

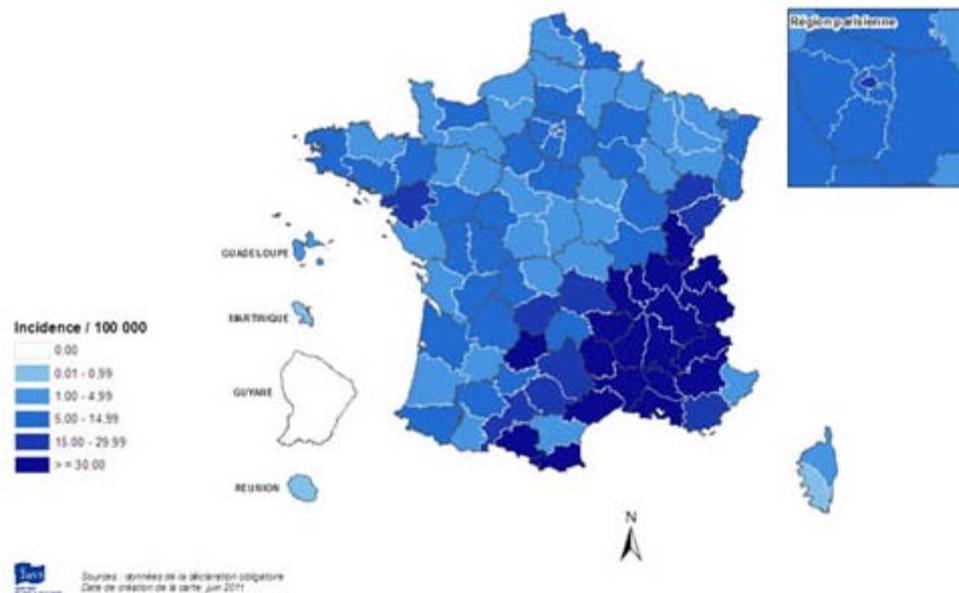
Since 1 January 2008, nearly 20 000 measles cases were reported from France. The increase since October 2010 represents the third wave of a nationwide outbreak (Figures 3 and 4). The peak of the outbreak was in March 2011 (more than 3 600 cases) and a slight decrease was observed in April (over 3 100 cases). A peak in the number of emergency visits was observed in April, with a marked decrease in May. The highest age specific incidence was reported in children less than one year of age, followed by children and young adults aged 11 to 20 years (Figure 5). In 2010, two people died, eight developed neurological complications, and 287 suffered from severe pneumonia as a result of measles infections. In 2011, six deaths, 14 neurological complications, and 444 cases with severe pneumonia were reported.

Figure 3: Distribution of reported measles cases in France by month; January 2008–May 2011



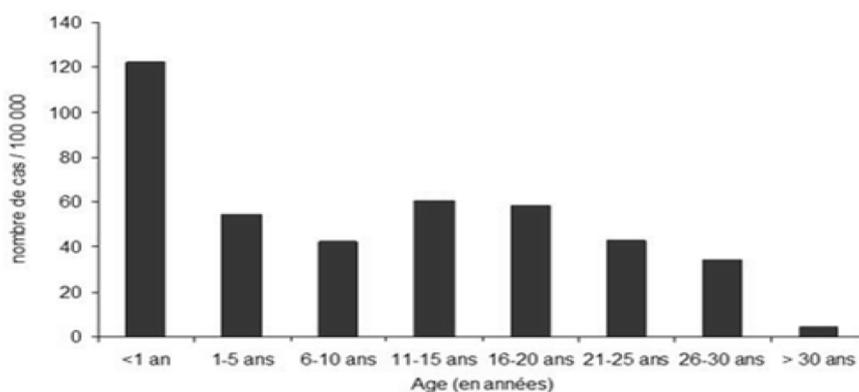
Source: [Institute de Veille Sanitaire, France](#)

Figure 4: Distribution of measles incidence rates by department; France, 1–30 April, 2011



Source: [Institute de Veille Sanitaire, France](#)

Figure 5: Distribution of measles incidence rates by age group; France, 1 January–30 April 2011



Source: [Institute de Veille Sanitaire, France](#)

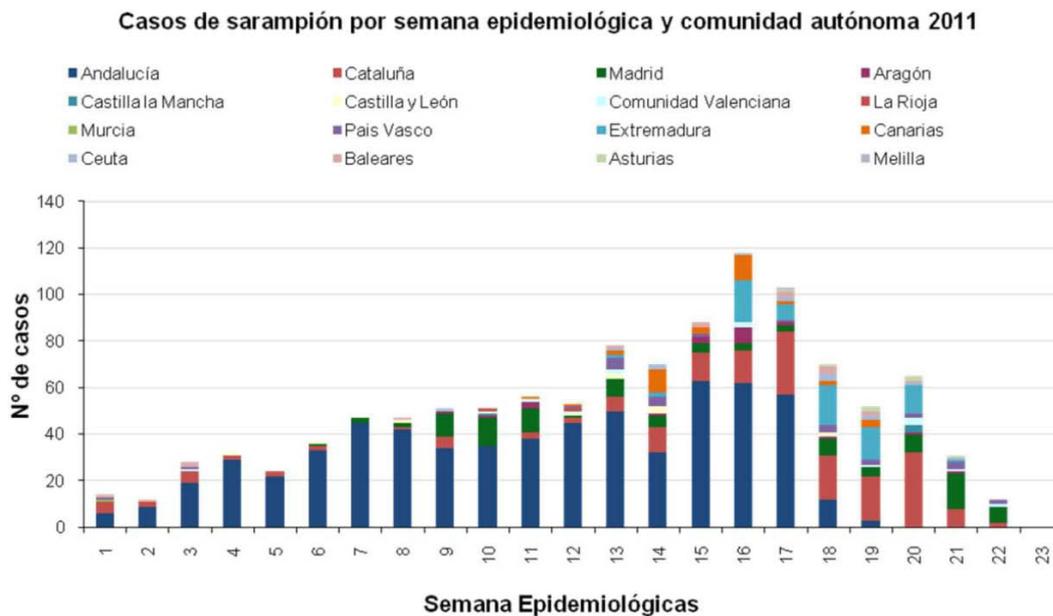
Spain

Source: *Instituto de Salud Carlos III, Spain (unpublished data)*

Since the beginning of 2011, Spain has been experiencing ongoing measles outbreaks, affecting 16 of the 19 regions of the country. Up to 25 June 2011, 2 261 measles cases have been notified as aggregated data. Of the 1 577 individually received case reports up until 5 July 2011, 155 cases were discarded. The most affected regions are Andalucía with 726 confirmed cases, followed by Catalonia with 231 – the two most populated areas in the country (Figures 6 and 7). Genotype D4 is predominant and responsible for most outbreaks. Genotype B3 affects mainly eastern Spain: Granada, the Balearic Islands, and Barcelona.

The outbreaks have started in vulnerable groups of the population such as slum dwellers, vaccine opponents, health personnel, and subsequently spread to the general population, affecting susceptible age groups: children under 15 months (too young to be vaccinated) and young unvaccinated adults. Roma communities seem to play an important role in transmission of measles between the regions due to their high mobility.

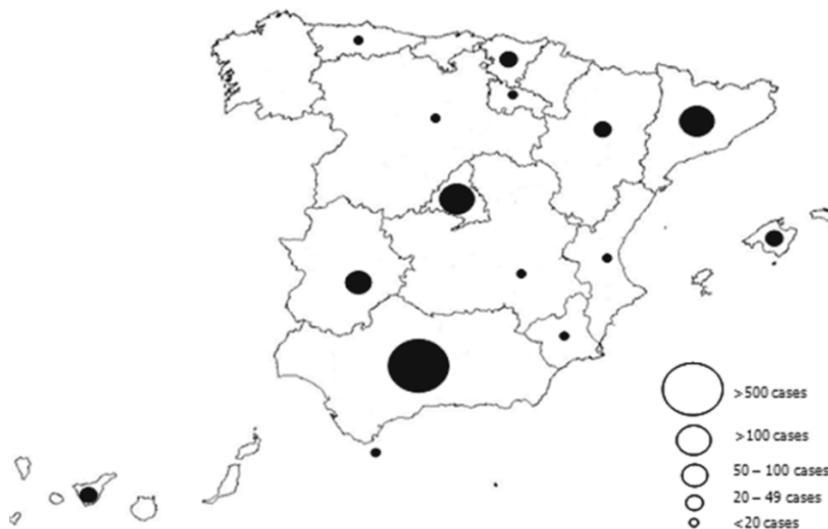
Figure 6: Distribution of measles cases by week of onset and autonomous communities; Spain, 2011, as of week 23



Centro Nacional de Epidemiología. ISCIII. Datos: Plan de Eliminación de Sarampión y Rubéola

Source: *Instituto de Salud Carlos III, Spain (unpublished data)*

Figure 7: Distribution of measles cases by autonomous communities; Spain, 2011, as of week 23



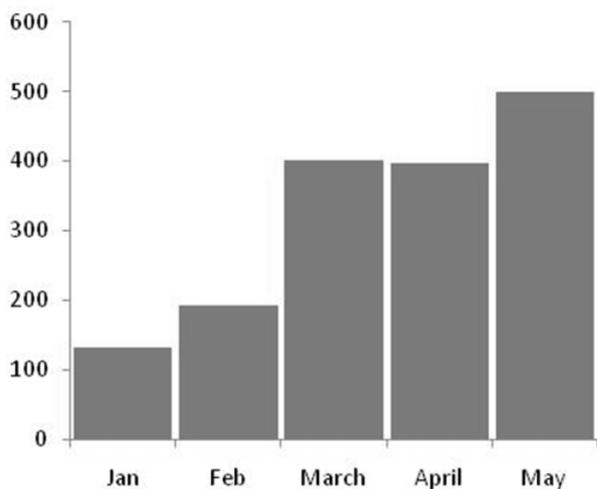
Source: *Instituto de Salud Carlos III, Spain (unpublished data)*

Romania

Source: National Centre for Communicable Diseases Surveillance, Romania (unpublished data)

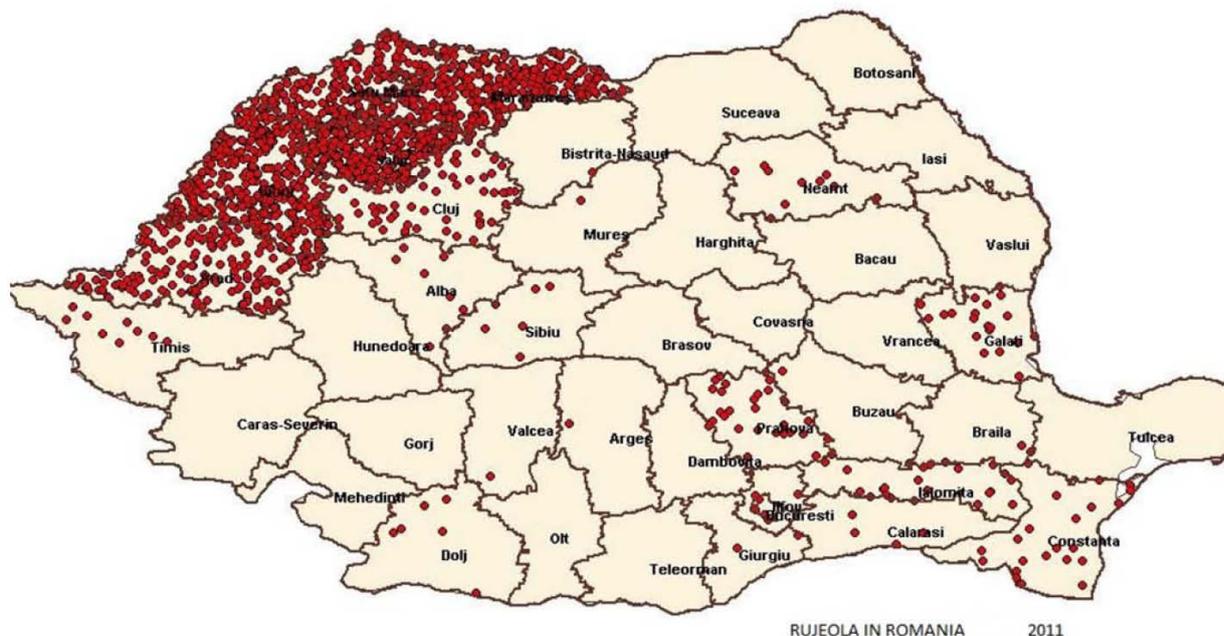
Between August and December 2010, five measles outbreaks affecting 90 people were reported in Romania. Measles virus D4, the dominating genotype in Europe, has been confirmed. Since then, outbreaks have spread: between January and the end of May 2011, 1 619 new measles cases were reported, of which 37% were laboratory confirmed (Figure 8). The majority (72%) of the cases were unvaccinated individuals. Children less than one year of age accounted for 15% (238) of the cases, and adults older than 20 years for 6% of cases. More than half of the affected are ethnic Roma. In May 2011, the highest incidence was in the north eastern regions bordering Hungary (Figure 9). Hungary has not reported any measles cases in 2011.

Figure 8: Distribution of reported measles cases by month of onset of symptoms; Romania, January to May 2011



Source: National Centre for Communicable Diseases Surveillance, Romania (unpublished data)

Figure 9: Distribution of reported measles cases by county; Romania, January to May 2011



Source: National Centre for Communicable Diseases Surveillance, Romania (unpublished data)

Belgium

Source: Scientific Institute of Public Health, Belgium (unpublished data)

Between 1 January and 7 June 2011, 382 measles cases were reported from Belgium (Figure 10) of which 55% were laboratory confirmed and 13% epidemiologically linked. Genotype D4 was identified in 68 cases. The first outbreak started in anthroposophic schools in February and later other outbreaks occurred in other schools, families, and a Roma community. All eleven provinces are affected (Figure 11). Since April the number of new cases reported from Flanders has been decreasing while new cases continue to increase in Brussels and Wallonia.

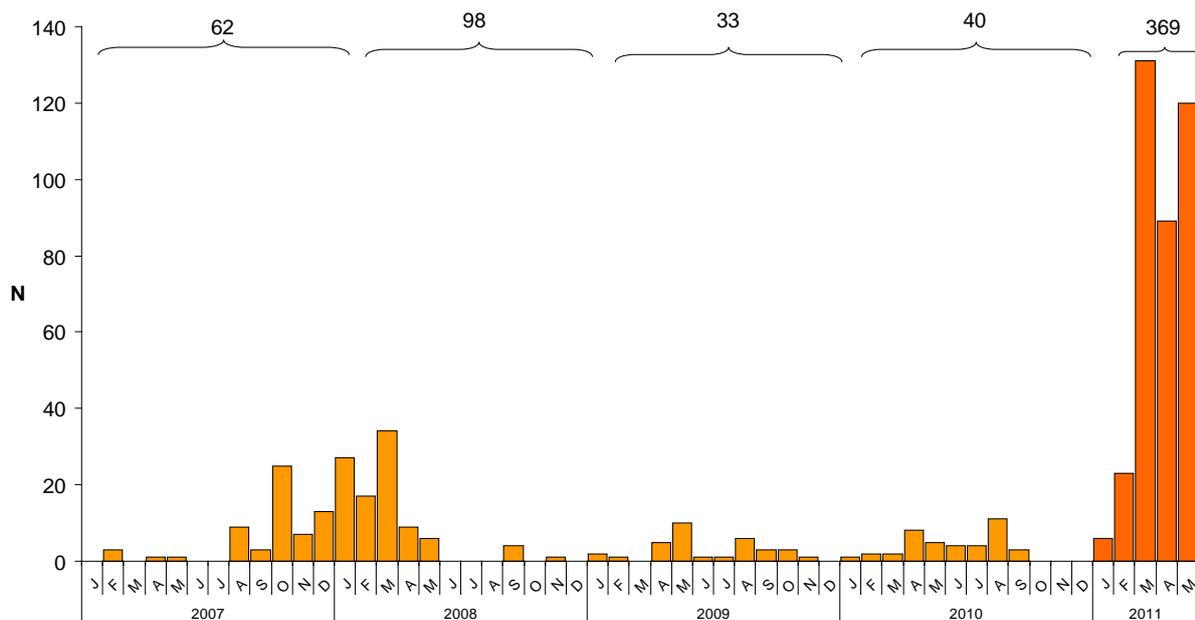
Ten percent of cases were under one year of age (range 3–11 months) and thus not eligible for vaccination. One quarter of cases was older than 19 years of age. Among 173 persons for whom information was available, 23% had been hospitalised. Twelve cases were complicated by pneumonia (one followed by a septic shock) and one patient developed encephalitis.

Of 181 cases with known vaccination status, 77% were in unvaccinated persons. Important reasons for not being vaccinated among 144 cases with available information were anthroposophic beliefs (32%) and advice against vaccination by homeopathic doctors (8%).

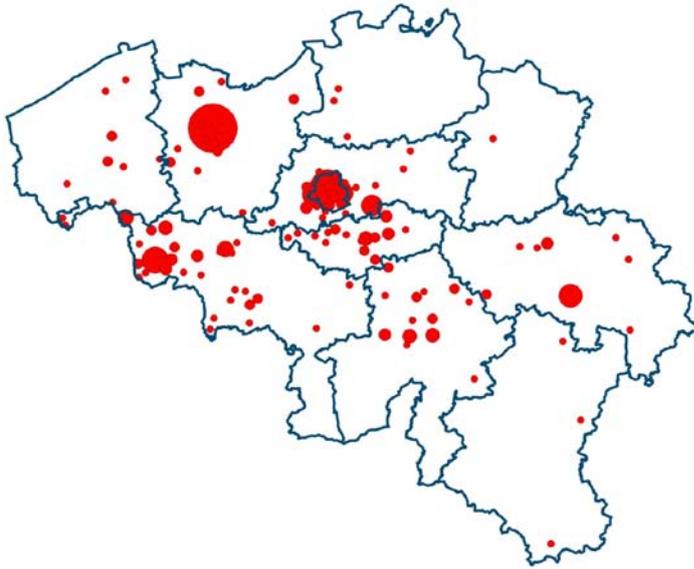
In Belgium, MMR vaccination is recommended at 12 months of age; a second dose is recommended between 10 and 13 years of age. The reported vaccine uptake with two doses MMR was 91% in Flanders (2008), 71% in Brussels (2006), and 76% in Wallonia (2009).

Mandatory reporting of measles was introduced only in 2009, and the true incidence is assumed to be higher than currently reported.

Figure 10: Distribution of measles cases by month of onset of symptoms; Belgium, January 2007–May 2011



Source: Scientific Institute of Public Health, Belgium (unpublished data)

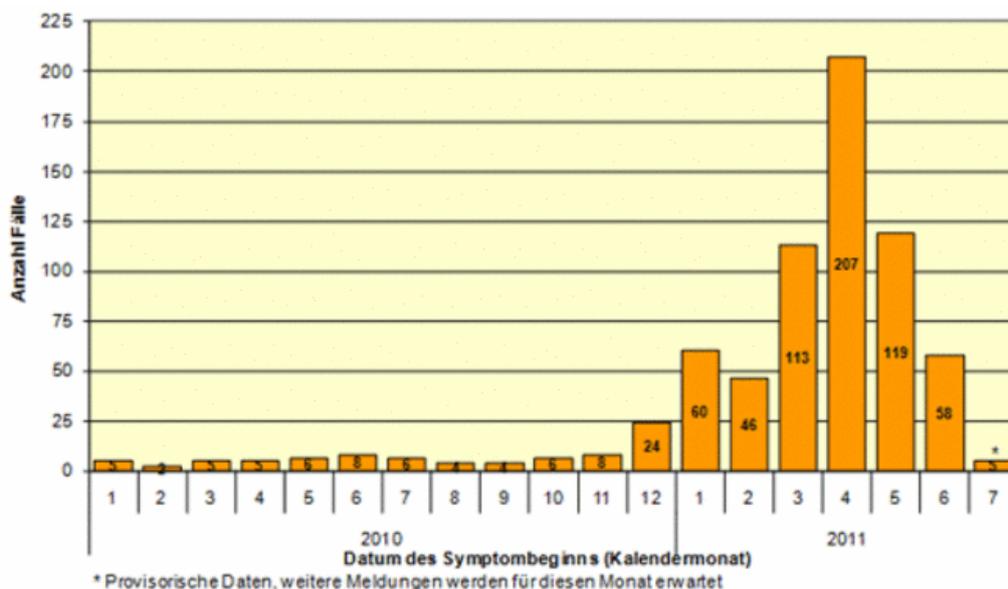
Figure 11: Distribution of measles cases by province; Belgium, January 2007–May 2011

Source: Scientific Institute of Public Health, Belgium (unpublished data)

Switzerland

Source: *Bundesamt für Gesundheit, Switzerland*

Switzerland has been experiencing a measles outbreak since December 2010, with 613 cases reported since the start of the outbreak, and 589 cases during 2011. The peak of the outbreak was in April (205 cases). Case numbers have been declining since then (Figure 12). The outbreak started in the French speaking part of Switzerland and moved eastwards to the German speaking part (49% of cases since May). Twenty one of Switzerland's 26 cantons (regions) are affected. In June 2011, 44 cases were reported from 12 cantons. Among reported cases since December 2010, 38% are adults aged 20 years or more, and 87% of cases were in unvaccinated persons. Seven percent were vaccinated with one dose, 3% with two, and 3% with an unknown number of doses of measles containing vaccine. Of 546 cases where detailed information is available, 56 (10%) were hospitalised, and 24 (4%) suffered from pneumonia.

Figure 12: Distribution of measles cases by month of onset of symptoms; Switzerland, January 2010–June 2011

Source: *Bundesamt für Gesundheit, Switzerland*

United Kingdom

Sources: [Health Protection Agency](#), [Health Protection Scotland](#)

The UK Health Protection Agency reported 496 laboratory confirmed cases of measles between January and the end of May 2011, surpassing the annual total of 374 cases in 2010. Scotland reported 54 measles cases of which 22 were laboratory confirmed, compared with 38 notifications in 2010. While the reported measles cases in 2011 in England and Wales are predominately children and adolescents under 19 years of age, the increase in Scotland was mainly among young adults, who may have not been routinely offered two doses of MMR as children. In England and Wales, the MMR vaccine uptake in children aged two reached 90 percent in the first quarter of 2011, which is the highest uptake observed in 13 years. The uptake for two doses of MMR in children aged five in England and Wales is 85%, also an increase compared with last year. MMR vaccine coverage in Scotland is reported to be at least 90%. Small clusters were reported from universities, schools and families, and cases were associated with travel abroad but did not spread to the general population. The UK recommends updating the measles vaccination status before travelling.

Other news

Sources: [Ministry of Health, Austria](#), [Health Protection Agency](#)

Austria increased the age limit for free of charge measles vaccinations from 25 to 45 years on 29 June 2011.

Several countries are now advising their citizens, including adults and young adults, to get vaccinated against measles especially if they are planning to travel during the summer.

Acknowledgements

ECDC would like to thank the Member States for kindly agreeing to share their most recent measles related data with us.

Related links

- ECDC stresses importance of getting vaccinated before attending mass gathering events:
http://www.ecdc.europa.eu/en/press/news/Lists/News/ECDC_DispForm.aspx?List=32e43ee8_e230_4424_a78385742124029a&ID=447&RootFolder=%2Fen%2Fpress%2Fnews%2FLists%2FNews
- More information about measles is available on the ECDC website ('health topics'):
<http://ecdc.europa.eu/en/healthtopics/Pages/Measles.aspx>
- More information about vaccines and immunisation from the World Health Organization Regional Office for Europe website:
http://www.euro.who.int/en/what_we_do/health_topics/communicable_diseases/measles_and_rubella
- WHO: CISID database:
<http://data.euro.who.int/cisid/>
- Report on vaccination coverage assessment in Europe. VENICE (Vaccine European New Integrated Collaboration Effort). Published on December 2007.
- The Venice Project:
http://venice.cineca.org/the_project.html
- More information on the surveillance of vaccine preventable diseases in the European Union is available on the website for EUVAC.NET:
www.euvac.net
- Information from selected Member States' websites regarding measles is available from:
 - [Austria](#)
 - [Belgium](#)
 - [Bulgaria](#)
 - [Denmark](#)
 - [Estonia](#)
 - [Finland](#)
 - [Germany](#)
 - [Ireland](#)
 - [Spain](#)
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