

European monthly measles monitoring (EMMO)

August 2011

Main developments

- More than 2 000 new measles cases were detected in the EU and EEA/EFTA countries since the previous measles monitoring report in July, bringing the total number of cases in 2011 to 28 307.
- As is usually seen with measles, the number of cases declined during the summer months.
- New measles outbreaks were reported from Finland, Ireland and the French overseas territory of La Réunion.
- Four of the 30 countries monitored have been measles free so far in 2011: Cyprus, Hungary, Iceland and Liechtenstein.
- The Canary Islands changed the recommended age for the first dose of measles vaccine from 15 to 12 months.
- Supplementary vaccination campaigns have been announced in Munich and Murcia.
- On 14 September 2011, the EUVAC.NET website migrated to the ECDC website. At the same time, routine reporting of measles and other vaccine-preventable diseases in Europe was transferred to The European Surveillance System (TESSy).

Erratum. The following corrections were made on 23 September 2011:

Page 2, overview, third paragraph: 'Nine measles-related deaths and 23 cases of acute measles encephalitis have been reported from EU and EEA/EFTA countries in the period January–June 2011' was changed to read 'Eight measles-related deaths and 22 cases of acute measles encephalitis have been reported from EU and EEA/EFTA countries in the period January–June 2011'.

Page 3, Table 1, United Kingdom: 'One case of encephalitis and one death' was changed to read 'no case of encephalitis and no death'.

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, are committed to eliminating 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 differs across 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 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 in support of the 2015 measles elimination target.

Overview

During the first eight months of 2011, ECDC detected more than 28 000 measles cases in the EU and EEA/EFTA countries through reports and epidemic intelligence (Table 1). This cumulative number is preliminary and it is likely to change as more information becomes available. It is widely recognised that measles is under-reported in many countries.

The highest number of cases has been reported in France which accounts for more than half of all cases in 2011. Romania, Italy, Germany, Switzerland, Spain, Belgium, Denmark and the UK are among those countries which have reported a considerable increase in case numbers during 2011 compared with 2010 (Figure 1, Figure 2).

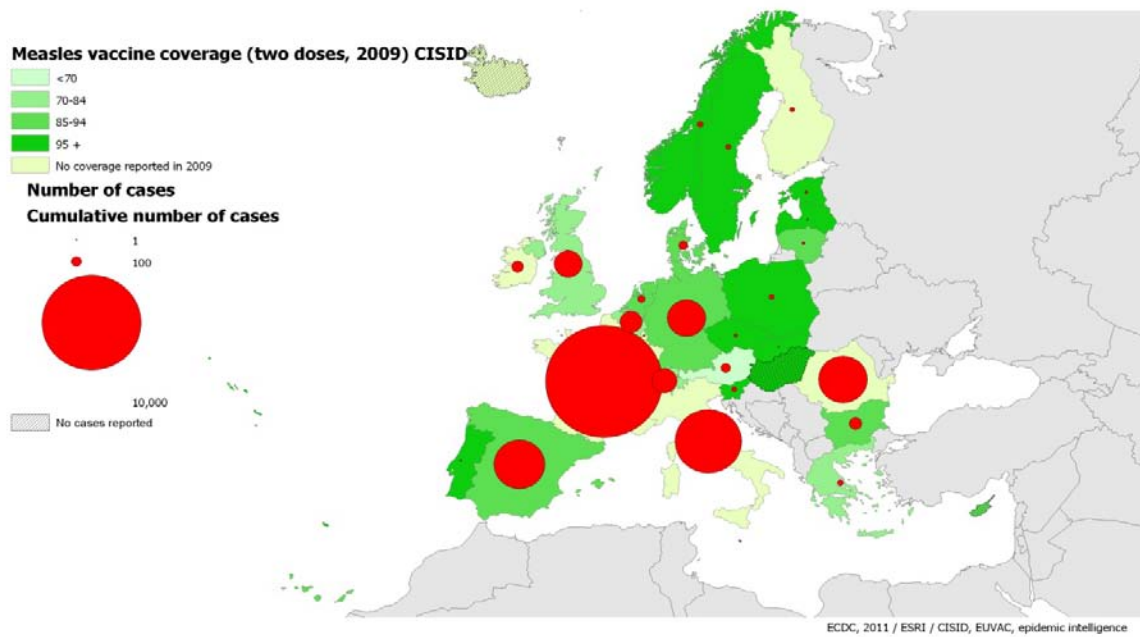
Eight measles-related deaths and 22 cases of acute measles encephalitis have been reported from EU and EEA/EFTA countries in the period January–June 2011. In addition, there have been more than 1 200 cases of pneumonia as a complication of measles infection. These have been reported from France (639 cases), Romania (582 cases), Switzerland (27 cases) and Belgium (12 cases) (Table 1). The hospitalisation rate for cases with known hospitalisation status was 26% during the first quarter and 31% during the second quarter of 2011.

The number of measles cases has declined since June (Figure 3). The natural seasonality of measles in temperate climate zones, with annual peaks of transmission in late winter and early spring, is well described from the pre-vaccination era. It was anticipated that the number of cases would decline during the summer months and new outbreaks can be expected in countries with sub-optimal immunity levels when the schools open for the autumn term.

Table 1: Cumulative number of measles cases, complications, deaths, trend since last report, date of last report and source of information; EU and EEA/EFTA countries, 2011

Countries	Cumulative number of cases	Complications		Deaths	Cases reported until	Source
		Pneumonia	Encephalitis			
Austria	94		1		31-Jul	EUVAC.Net
Belgium	500	12	1		30-Jun	EUVAC.Net
Bulgaria	155				24-Jul	National Centre of Infectious and Parasitic Diseases
Cyprus	0				31-Jul	EUVAC.Net
Czech Republic	12				31-Jul	EUVAC.Net
Denmark	84				21-Jul	Statens Serum Institut
Estonia	7				31-Jul	EUVAC.Net
Finland	23				23-Aug	National Institute for Health and Welfare (THL)
France	14 500	639	15	6	30-Jun	Institut de Veille Sanitaire
Germany	1 515		2	1	31-Aug	Robert Koch Institute
Greece	37				31-Jul	EUVAC.Net
Hungary	0				31-Jul	EUVAC.Net
Iceland	0				31-Jul	EUVAC.Net
Ireland	135				22-Aug	Health Protection Surveillance Centre
Italy	4 500				31-Aug	Istituto Superiore di Sanità (unpublished data)
Latvia	1				27-Jul	Infectology Centre of Latvia
Liechtenstein	0				30-Jun	Amt für Gesundheit
Lithuania	7				31-Jul	EUVAC.Net
Luxembourg	5				31-Jul	EUVAC.Net
Malta	2				31-Jul	EUVAC.Net
Netherlands	51				25-Jul	RIVM
Norway	35				31-Jul	EUVAC.Net
Poland	27				31-Jul	EUVAC.Net
Portugal	1				31-Jul	EUVAC.Net
Romania	2 466	582	3	1	31-Jul	EUVAC.Net
Slovakia	2				31-Jul	EUVAC.Net
Slovenia	22				31-Jul	EUVAC.Net
Spain	2 649				23-Jul	Instituto de Salud Carlos III
Sweden	22				30-Aug	Smittskyddsinstitutet
Switzerland	651	27			23-Aug	Bundesamt für Gesundheit
United Kingdom	804				31-Jul	EUVAC.Net
Total	28 307	1 260	22	8		

Figure 1. Distribution of measles cases in EU and EEA/EFTA countries identified through EUVAC.NET, epidemic intelligence and personal communication from Member States (as of September 2011) and two-dose measles vaccine coverage (2009 CISID*);



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

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

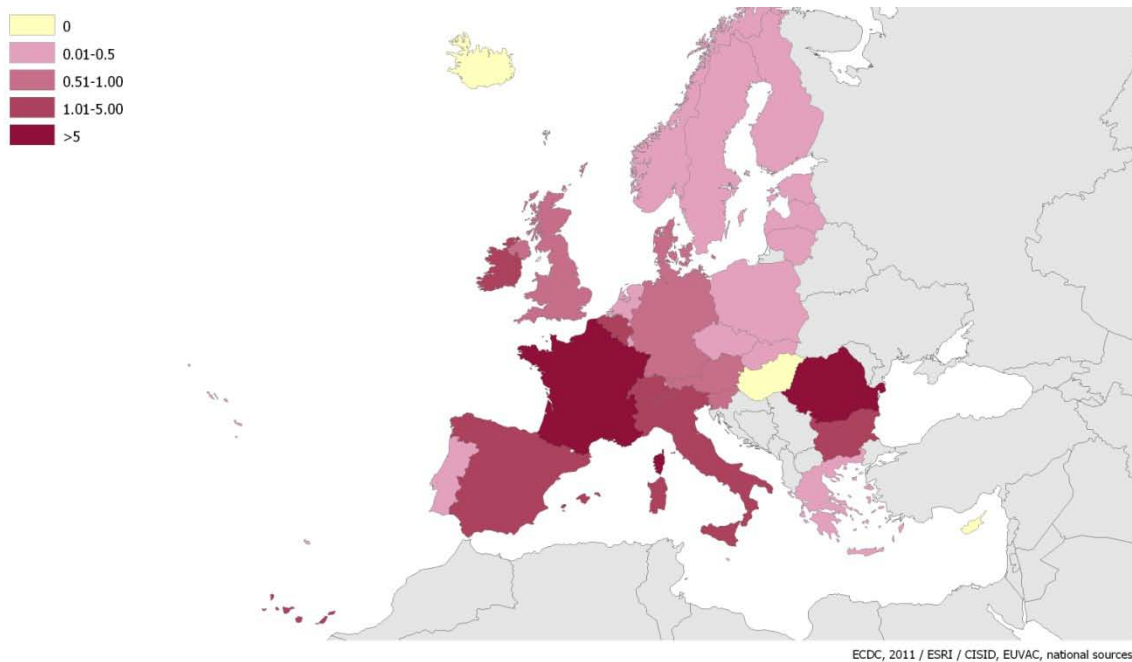
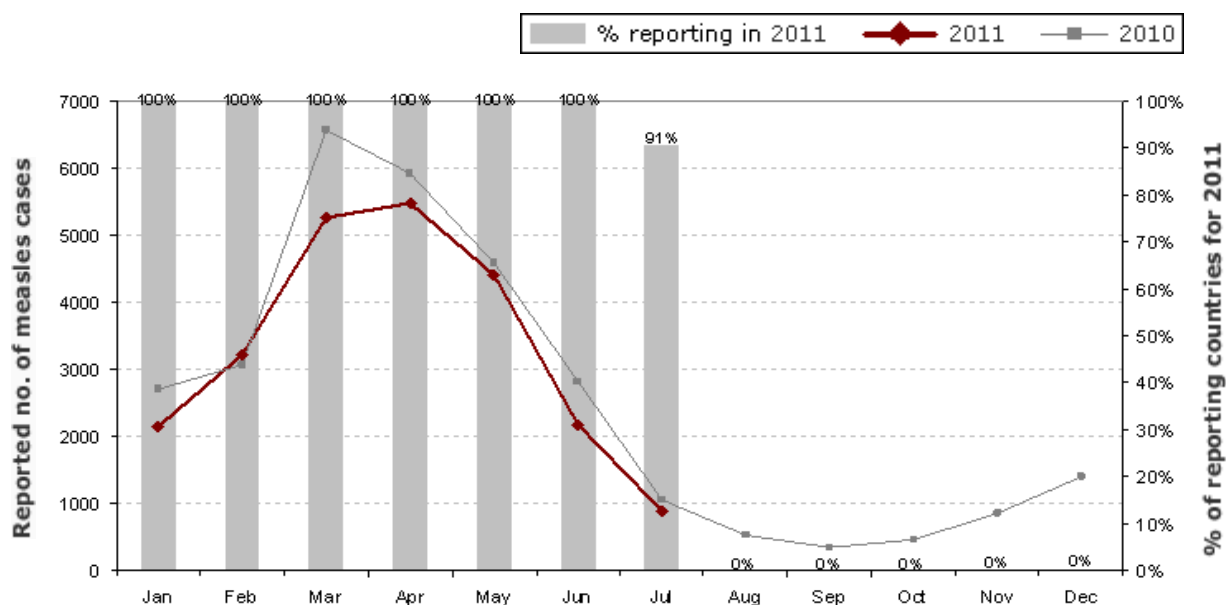


Figure 3. Number of measles cases by month of onset in 2011 and 2010 and proportion of countries reporting in 2011* (29/32 countries for July 2011), EUVAC.NET



Source: EUVAC.NET

* Reporting countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom

New outbreaks

Since the previous EMMO new measles outbreaks have been reported in the following locations:

Ireland

Source: Health Protection Surveillance Centre (HPSC), EUVAC.NET (unpublished data)

On 15 August, a measles outbreak in the eastern part of the country was reported to the Health Protection Surveillance Centre (HPSC). Twelve measles cases (age range 7–11 years) were diagnosed among a group of 100 children attending a week-long residential summer camp. Eleven of the children had not been vaccinated against MMR.

As of September 2011, 143 cases of measles had been reported in Ireland, compared to 90 cases reported during all of 2010. Of these, 124 (87%) were in the eastern area which includes Dublin. Eighteen cases (13%) were infants too young to have received the MMR vaccine. Among the 125 cases aged 12 months or older, 60% were unvaccinated, 17% reported receiving one dose of MMR, and 5% reported receiving two doses of MMR.

Vaccination status was unknown for 18% of the cases. A significantly high proportion of cases occurred among socioeconomically disadvantaged children and there is concern that there will be further transmission as the new school year starts. The Health Service Executive (HSE) is alarmed by the recent rapid increase in the number of measles cases and the following control measures have been put in place:

- raising awareness among general practitioners (GPs) and hospitals in the most affected areas;
- local media coverage urging parents to ensure their children are vaccinated with MMR;
- a recommendation that all children attending summer camps should be appropriately vaccinated (or have had at least one dose of MMR);
- for those areas where measles transmission is highest, MMR vaccination is being recommended for children as young as 6 months;
- besides, a school MMR vaccination campaign targeting all children aged 4–12 years of age will be launched in September in the affected area.

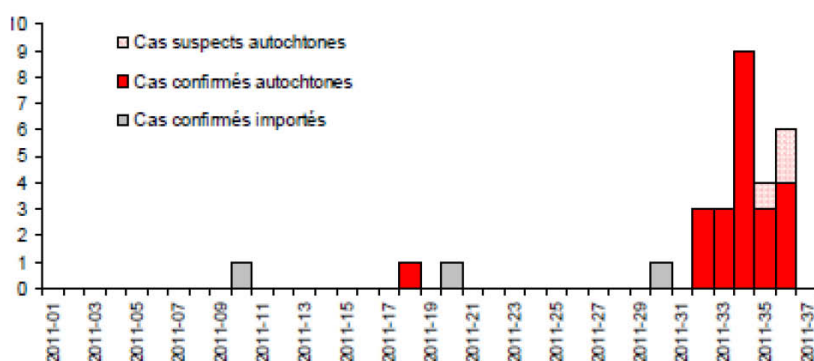
In addition, all GPs and hospitals in the country will be informed about the measles outbreak and the potential risk of measles in other areas of the country and requested to report suspect cases immediately.

France, La Réunion

Source: Institut de Veille Sanitaire [French Institute for Public Health Surveillance]

In August 2011, following the importation of three cases of measles, a measles outbreak occurred in the French overseas territory of La Réunion. As of 8 September 2011, 25 autochthonous cases of measles, of which 22 are laboratory confirmed, had been reported. Two of the saliva samples taken from patients were genotyped at the National Reference Centre in Caen. The measles strain identified was found to be identical to the strain that emerged in France in late 2008 and which is dominating the current outbreak.

Figure 4. Number of confirmed and suspected cases of measles by week of symptoms onset, La Réunion, 2011



Source: Institut de Veille Sanitaire [French Institute for Public Health Surveillance]

Finland

Source: Finland's National Institute for Health and Welfare (THL)

Four cases of measles occurred among cadets at the National Defence and Naval Academy in Helsinki. The health centre in the affected garrison has carried out contact tracing and has taken the necessary preventive measures. So far in 2011 twenty-three cases of measles have been reported in Finland.

Updates on ongoing outbreaks and endemic transmission

France

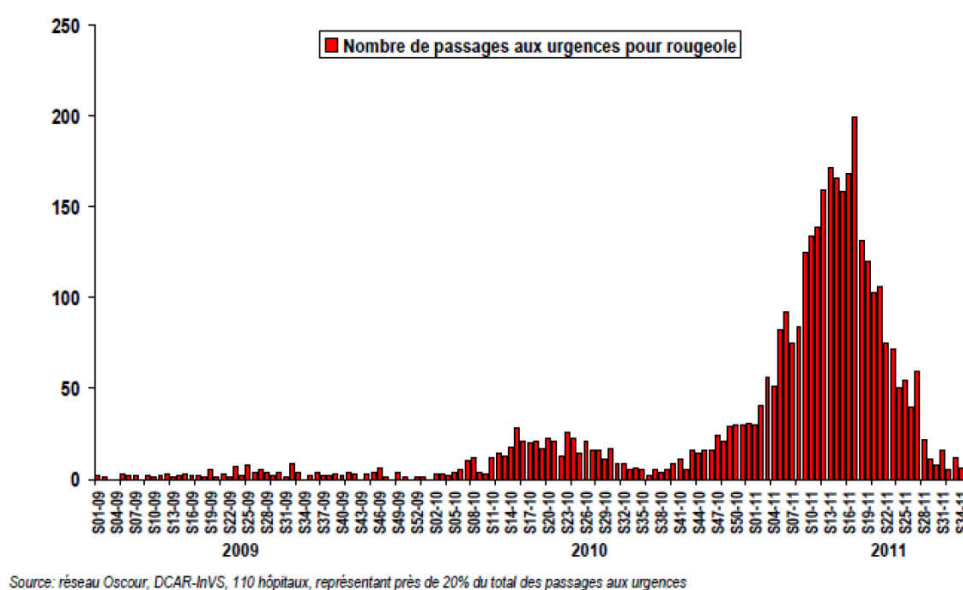
Source: Institut de Veille Sanitaire

The measles outbreak in France has been ongoing since January 2008. Between January and July 2011, there were around 14 500 cases. Six measles-associated deaths were reported and 15 cases developed neurological complications. The measles infection was complicated by severe pneumonia in 639 cases. The number of reported cases has been declining since the epidemic peaked in March 2011 (Figure 6).

Control measures adopted by France include:

- Awareness campaign in all regions with particular emphasis on those most at risk
- Comprehensive communication campaign targeting health care professionals and the public
- Promotion of immunization against measles in each region during the European Immunization Week
- New strategy of communication using the Internet with emphasis on reaching young adults
- Checking the immunization status of children in schools and raising awareness regarding the current outbreak
- Providing travel advice to people encouraging them to update their vaccinations
- Change of recommended measles vaccination for adults born between 1980 and 1991 (two injections instead of one)
- First injection for children at the age of 12 months (nine if they attend nursery school or are often among children), second injection after at least one month between the age of 13 and 24 months
- Immunization of children between six and eight months with a monovalent vaccine in the event of exposure
- Publication of guidelines for pregnant women
- Particular attention has been given to the cases of measles in the French overseas departments and territories and with this in mind the French Ministry of Health is working closely with several airline companies.

Figure 5. Number of measles cases presenting in emergency wards per week January–August 2011, France



Source: Institut de Veille Sanitaire

Italy

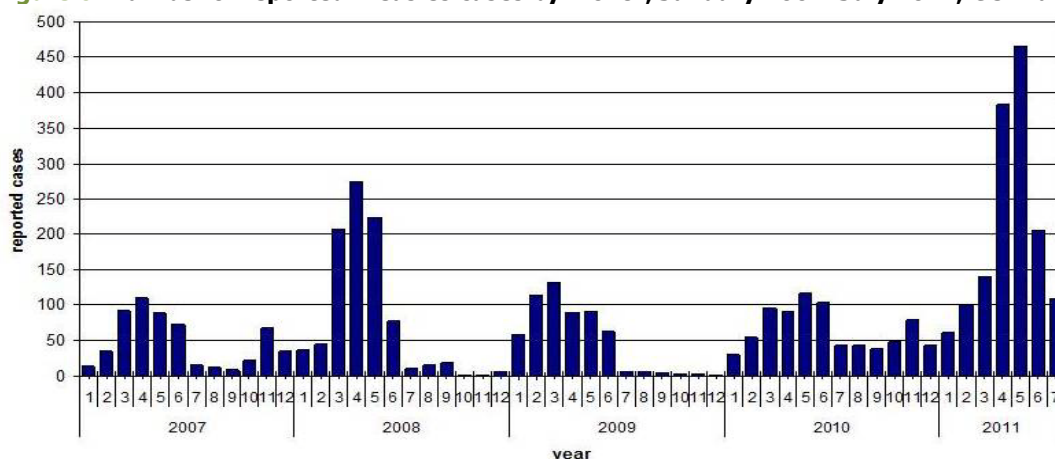
Source: Istituto Superiore di Sanità (unpublished information)

Italy has had ongoing measles outbreaks since January 2011. Between January and August 2011, over 4 500 cases were reported in 19 out of the country's 20 regions. Most cases were notified from the Bolzano and Lazio regions (about 1 400 cases reported from each of the two regions). The peak number of cases in Bolzano was reported in the month of May (511 cases) while in Lazio the peak was in June (352 cases). The number of new cases is declining in both regions, with Bolzano reporting 29 and Lazio 72 cases in August. Of the remaining regions, Lombardy has reported the highest number of cases (over 500 since January, with a peak of 105 cases in April 2011). Outbreaks seem to be subsiding in all regions.

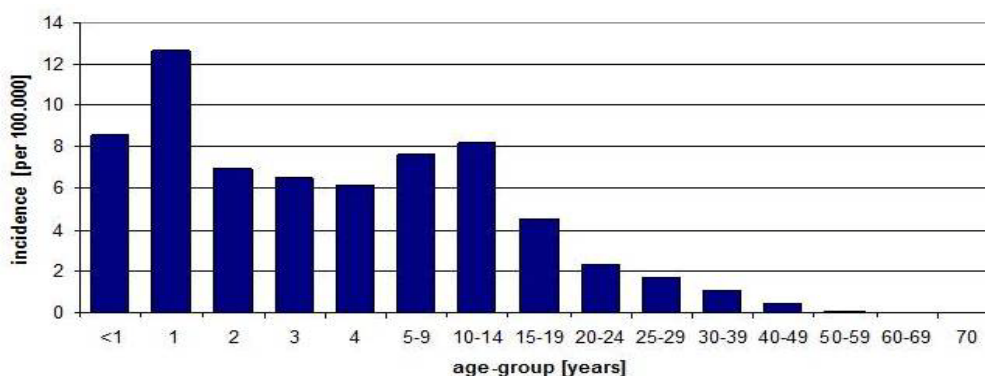
Germany

Source: Robert Koch Institute, personal communication

Like several other countries in Europe, Germany has been facing an increase in the number of measles cases since the end of 2010 (Figure 6). In 2011, between 1 January and 31 July, 1 465 measles cases were reported, of which 802 (54.7%) were laboratory-confirmed and 553 (37.7%) epidemiologically linked to laboratory-confirmed cases. One 26-year-old patient died and two patients developed measles encephalitis. The majority of cases have been reported from the federal states of Baden-Württemberg (n=520), Bavaria (n=383), Berlin (n=140) and Hessen (n=113). The incidence was highest in one-year-old children (12.65 per 100 000) and children below one year (8.57 per 100 000) (Figure 7).

Figure 6. Number of reported measles cases by month, January 2007–July 2011, Germany

Source: RKI

Figure 7. Measles incidence per 100 000, by age group, January–July 2011, Germany

Source: RKI

Of 1 465 cases, 1 021 (67%) have been reported within the context of an outbreak. Outbreaks occurred in schools (including anthroposophic schools), families and health care facilities as well as in Roma communities.

Ninety-one percent of the cases with known vaccination status were unvaccinated and 9% had received one or more doses of measles vaccine. The most commonly reported reasons for not being vaccinated were concerns about side effects of the vaccine and the perception that measles vaccination is not required.

The first dose of MMR vaccine is recommended at 11 months of age in Germany and the second dose at 15 to 23 months of age. Missed vaccinations should be given as soon as possible. The German Standing Committee on Vaccination (STIKO) updated its recommendations for measles vaccination in 2010. New recommendations include one dose of MMR vaccine to adults born after 1970 who are unvaccinated or received only one dose during childhood. Public health authorities in several federal states have implemented regular supplementary immunization activities in schools. Other activities aim to inform the public about the possible serious consequences of measles infection and to raise awareness about measles with family doctors. The first National Immunisation Plan of Germany will be published in the near future.

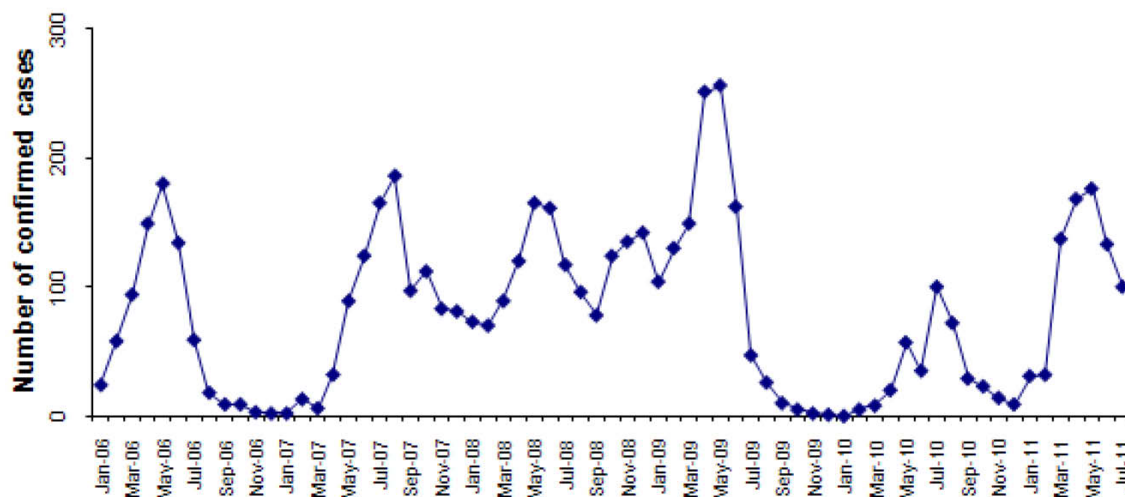
England and Wales

Source: Health Protection Agency

In England and Wales, 777 laboratory confirmed measles cases had been reported by the end of July 2011. In addition to these laboratory confirmed cases, there are around 80 clinical cases among unvaccinated children associated with an outbreak in an anthroposophic school whose parents declined to have the children tested for measles infection. In London, outbreaks continue to be reported in schools and small family clusters as well as an outbreak in a traveller community. This is likely to spread to other traveller communities. Most of the recent cases

in other areas are associated with schools attended by children of families known to oppose vaccination. There were also a small number of cases linked to music festivals during June and July.

Figure 8. Number of confirmed measles cases by month of onset, January 2006–July 2011, England and Wales



Source: Health Protection Agency

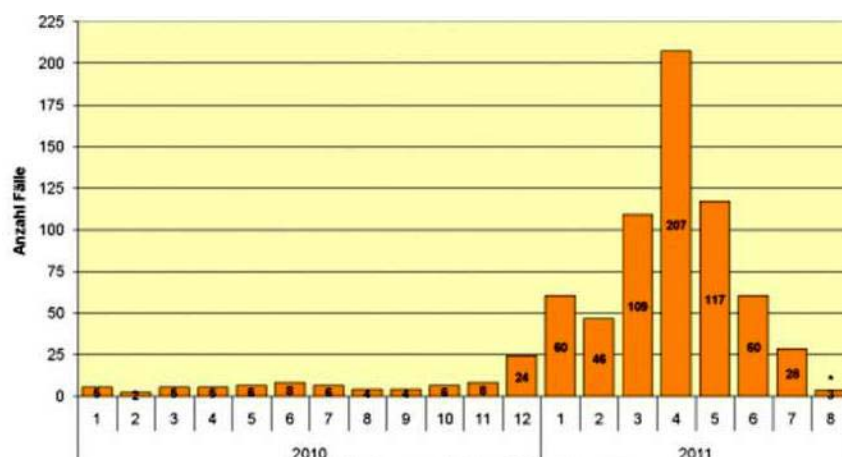
Switzerland

Source: Federal Office of Public Health Switzerland

The ongoing measles epidemic in Switzerland started in December 2010 and, as of August 2011, 654 cases had been reported from 21 of the 26 cantons, compared to 40 cases for the corresponding period in 2009–2010. The outbreak peaked in April with 207 cases. Since then, the number of new cases has decreased sharply. During July and August, 31 cases were registered from 14 cantons, of those only three had onset in August, indicating that the outbreak is nearing its end. Sporadic cases, imported from abroad, and limited outbreaks can still be expected as the overall vaccination coverage remains low in Switzerland (about 76% of children and adolescents have received two doses of measles-containing vaccine). The incidence during this epidemic was 8.4 cases per 100 000 which corresponds roughly to the incidence during the epidemic in 2003 (8.3 per 100 000) but is lower than the incidence during the previous long epidemic which lasted from November 2006 to July 2009 (57.3 per 100 000 throughout the epidemic period).

Adults above 20 years represent 37% of the cases reported since the start of the outbreak in December 2010. Eighty-eight percent of cases were unvaccinated and 6% had received only one dose. Of the 619 cases for which detailed information on the clinical course was available, 63 (10%) patients required hospitalisation and 27 (4%) suffered from pneumonia.

The Federal Office of Public Health recommends two doses of measles vaccine in combination with vaccines against rubella and mumps, with the first dose given at 12 months and the second dose at 15–24 months.

Figure 9. Number of reported measles cases January 2010 – August 2011, Switzerland

* The figures for August 2011 are preliminary

Source: Federal Office of Public Health Switzerland

Other news

Source: *Emerging Infectious Diseases*

A recent cross sectional survey carried out at the university hospitals in the Paris area showed insufficient measles vaccination coverage among health care students (medicine, midwifery and nursing). Twenty-one percent of the students had not received any measles vaccination and 5% of the students had received only one dose of MCV. Moreover, only 61.5% of the students were aware that vaccination against measles is recommended in France's national policy.

Source: *World Health Organization, the Measles Initiative*

In an August 2011 press release, the Measles Initiative announced that it has contributed to vaccinating one billion children against measles in more than 60 developing countries since 2001.

The Measles Initiative is a partnership of the American Red Cross, the United Nations Foundation, the US Centers for Disease Control and Prevention, UNICEF and the World Health Organization. It provides worldwide technical and financial support to governments and communities for measles vaccination and disease surveillance with the goal of eliminating measles.

Acknowledgements

ECDC would like to thank the Member States for kindly agreeing to share their most recent measles- related data with us. We would especially like to thank colleagues in Italy, Germany, France and Switzerland for sending us detailed reports.

Related links

- More information about measles is available on the ECDC website:
<http://ecdc.europa.eu/en/healthtopics/Pages/Measles.aspx>
- Information about vaccines and immunisation from the World Health Organization's Regional Office for Europe website. Available at:
[http://www.euro.who.int/en/what we do/health topics/communicable diseases/measles and rubella](http://www.euro.who.int/en/what%20we%20do/health%20topics/communicable%20diseases/measles%20and%20rubella)
- Website for WHO CISID database:
<http://data.euro.who.int/cisid/>
- 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 as follows:
 - Bulgaria
 - Denmark
 - France
 - Germany
 - Ireland
 - Spain
 - Sweden
 - UK
 - Switzerland