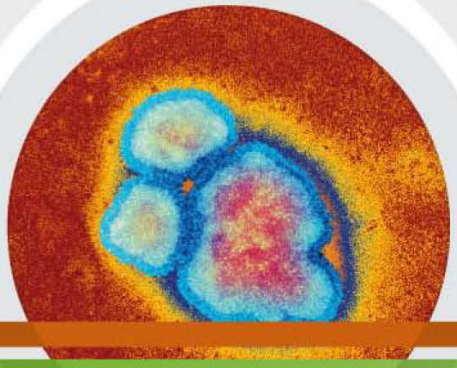


SURVEILLANCE REPORT

Volume 4

European monthly measles monitoring (EMMO)

September 2011

Main developments

- In September, the coordination of surveillance of measles and other vaccine-preventable diseases at the European level was transferred from Statens Serum Institut in Denmark (the previous coordinating agency for the EUVAC.NET hub) to ECDC and countries started reporting to The European Surveillance System (TESSy). At the same time, the EUVAC.NET website migrated to the ECDC website. This is the first edition of the European Monthly Measles Monitoring (EMMO) presenting TESSy data. EMMO will from now on report officially approved figures from enhanced surveillance in parallel with epidemic intelligence information on measles transmission.
- During the period January to August 2011, 26 262 cases of measles were reported to TESSy by the 29 contributing EU and EEA countries, including eight measles-related deaths and 24 cases of acute measles encephalitis.

  Nearly 800 new measles cases were detected through epidemic intelligence in the EU and EEA/EFTA countries since the previous measles monitoring report, bringing the total number of cases for 2011 to more than 29 100 cases.
- No new measles outbreaks were reported from EU and EEA/EFTA countries during September, and transmission has continued to slow down in the second half of the year. This is an expected consequence of the seasonal pattern of measles in temperate climates.
- Four out of the 31 monitored countries remain measles free in 2011: Cyprus, Hungary, Iceland and Liechtenstein.

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),

Erratum. The following corrections were made on 16 November 2011:
Page 4, Table 1: The table now contains the corrected figures for the year 2010.

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.

Overview

On 14 September 2011, the EUVAC.NET website migrated to ECDC and will from now on be maintained and moderated by ECDC. The EUVAC Forum has been replaced by EPIS-VPD, an ECDC-moderated platform for the rapid exchange of confidential information on vaccine-preventable diseases. EPIS, which stands for Epidemic Intelligence Information System, allows countries to share information and post inquiries about vaccine-preventable diseases. Access is restricted to ensure rapid and confidential communication about outbreaks.

The official reporting on vaccine-preventable diseases was also transferred from EUVAC.NET to ECDC for 29 countries (compared to 32 countries reporting to EUVAC.NET). The routine reporting to EUVAC.NET, which previously was managed by Statens Serum Institut (SSI), Denmark, through a grant from ECDC will now be done directly to The European Surveillance System (TESSy) database at ECDC. After validation by the contributing countries, the data are forwarded to WHO for the completion of the WHO/United Nations Children's Fund (UNICEF) joint reporting form on immunisation.

ECDC will continue to produce monthly measles monitoring reports but the reports will contain two sections and two sets of data. The first section of EMMO will present an analysis of enhanced surveillance data on measles as reported to TESSy and validated by countries. The figures in this section of the report should be considered as validated official national statistics on measles and will be included in the chapter on measles in the ECDC Annual Epidemiological Report (AER). The second section will present measles data and outbreak information generated through epidemic intelligence at ECDC. The purpose of this section is to provide timely information on measles transmission in the Members States in support of measles control and preventive interventions.

Surveillance section

From January to August 2011, 26 262 measles cases were reported to TESSy (Table 1). All 29 countries submitted data for the period from January to July 2011, and 24 countries submitted data for the month of August. The number of measles cases reported for the first eight months of 2011 is slightly lower but comparable with the number reported during the same period of 2010. The reported incidence has been exceptionally high in the two last calendar years compared to 2009 (7 175 cases) and 2008 (7 817 cases). In 2010, Bulgaria reported 72% of all cases as a result of a large outbreak which is now over.

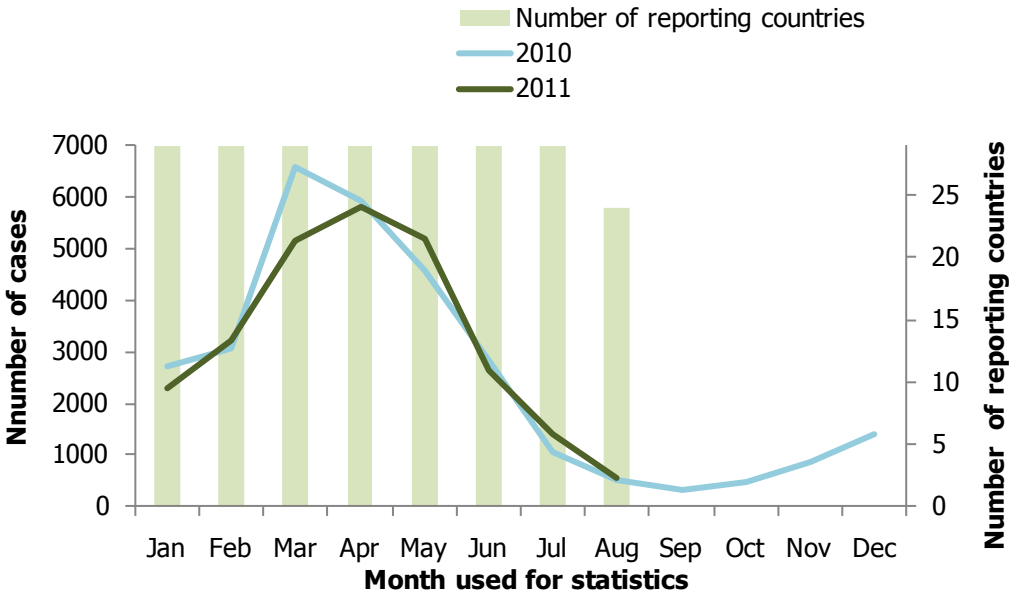
The highest number of cases has been reported by France, which accounts for more than half of all cases in 2011. Italy, Romania, Germany, Spain, Belgium, Denmark and the UK are among the countries reporting considerable increases in case numbers in 2011 compared with 2010 (Table 1, Figure 3). Cyprus, Hungary, Iceland, and Latvia reported no cases (Table 1, Figure 3). Of the reported cases, 41% (10 884 cases) were reported as confirmed, 19% (4 913 cases) as probable, 40% (10 384 cases) as possible, and 0.3% (81 cases) as unknown. The highest incidence was among infants below one year (34.5 cases per 100 000 population), followed by children between 1 and 4 years (19.9 cases per 100 000 population) (Figure 4).

Eight measles-related deaths and 24 cases of acute measles encephalitis were reported by EU and EEA/EFTA countries during the period from January to August 2011. The fatal cases were reported from France (6), Germany (1) and Romania (1). Reporting on complications is incomplete as this information was available for only 5 547 of the reported cases (Table 2).

Measles cases have continued to decline since June 2011 (Figure 1). This is an expected result of the natural seasonality of measles in Europe with annual peaks of transmission in late winter and early spring. The risk of new outbreaks and intensified transmission is likely to increase in countries with sub-optimal immunity levels when schools resume for the autumn term and during the winter season.

Vaccinations status was known for 68% (17 898 cases) of the reported cases. Of these, 82% (14 741) were unvaccinated and 18% (3 157) had only received one dose. Importation status was available for 57% (14 879) of the reported cases. Of those with known importation status, 97% (14 364 cases) were infected in their country of residence, 3% (495 cases) were imported, and 0.1% (20 cases) were import-related*.

Figure 1: Distribution of measles cases in 2011 and 2010 and proportion of countries reporting in 2011*, by month† (24/29 countries for August 2011)



Source: TESSy and EUVAC.NET

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

* An 'imported case' is defined as a case in which the source of infection was outside the country of residence, and the person in question was travelling abroad during the incubation period prior to the onset of the rash (measles: 7–18 days; rubella: 12–23 days). Classification as an imported case is also supported by epidemiological and/or virological evidence of foreign-acquired infection.

An 'import-related case' is a case epidemiologically linked to an imported case, as supported by epidemiological and/or virological evidence. All import-related cases are to be considered as indigenous cases.

See also: WHO. Surveillance guidelines for measles, rubella and congenital rubella syndrome in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2009.

† Date used for statistics

Table 1: Number of measles cases by month, notifications per 100 000 population, and comparison with previous reporting period in 2010; EU and EEA countries, 2011

	Number of cases in the reporting month of 2011								Jan – Aug 2011		Jan – Aug 2010	
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	Number of cases	Notification rate per 100,000	Number of cases	Notification rate per 100,000
Austria	7	5	5	9	18	33	16	4	97	1.2	39	0.5
Belgium	7	23	136	85	129	90	29	16	515	4.8	38	0.4
Bulgaria†	76	28	23	6	18	1	0	0	152	2	21786	288
Cyprus	0	0	0	0	0	0	0	0	0	0	18	2.2
Czech Republic	0	0	4	4	4	0	0	nr	12	0.1	0	0
Denmark	7	13	23	18	19	0	1	0	81	1.5	4	0.1
Estonia	0	0	4	1	1	1	0	0	7	0.5	0	0
Finland	1	1	1	6	9	0	0	nr	18	0.3	4	0.1
France	1515	2289	3362	3269	2229	899	394	nr	13957	21.6	3125	4.8
Germany	69	95	195	428	434	167	92	nr	1480	1.8	576	0.7
Greece	0	2	6	17	10	2	0	3	40	0.4	146	1.3
Hungary	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
Ireland	0	5	11	17	12	30	33	65	173	3.9	383	8.6
Italy	326	339	571	900	1223	625	220	96	4300	7.1	598	1
Latvia	0	0	0	0	0	0	0	0	0	0	0	0
Lithuania	0	0	0	1	2	3	0	0	6	0.2	2	0.1
Luxem-bourg	0	0	1	0	1	2	0	nr	4	0.8	1	0.2
Malta	0	1	0	1	0	0	0	1	3	0.7	0	0
Nether-lands	2	1	10	16	11	5	0	1	46	0.3	10	0.1
Norway	4	12	7	2	3	5	1	1	35	0.7	3	0.1
Poland	2	2	2	8	5	5	4	5	33	0.1	11	0
Portugal	0	0	1	0	0	0	0	0	1	0	5	0
Romania	131	192	402	396	514	455	377	298	2765	12.9	19	0.1
Slovakia	0	0	0	1	0	1	0	0	2	0	0	0
Slovenia	0	0	0	2	1	7	12	0	22	1.1	2	0.1
Spain	93	159	251	448	359	168	133	26	1637	3.6	146	0.3
Sweden	4	1	1	8	4	1	2	1	22	0.2	6	0.1
United Kingdom	31	33	143	170	186	135	105	51	854	1.4	317	0.5
Total	**2275**	**3201**	**5159**	**5813**	**5192**	**2635**	**1419**	**568**	26262	5.2	27239	5.4

Data source: The European Surveillance System (TESSy)

Notifications rates were calculated per 100 000 population, using the most recent population estimates available from Eurostat (2010).

nr = no data reported

Table 2: Number of fatal measles cases and cases with complications by vaccination status; EU and EEA countries, January – August 2011

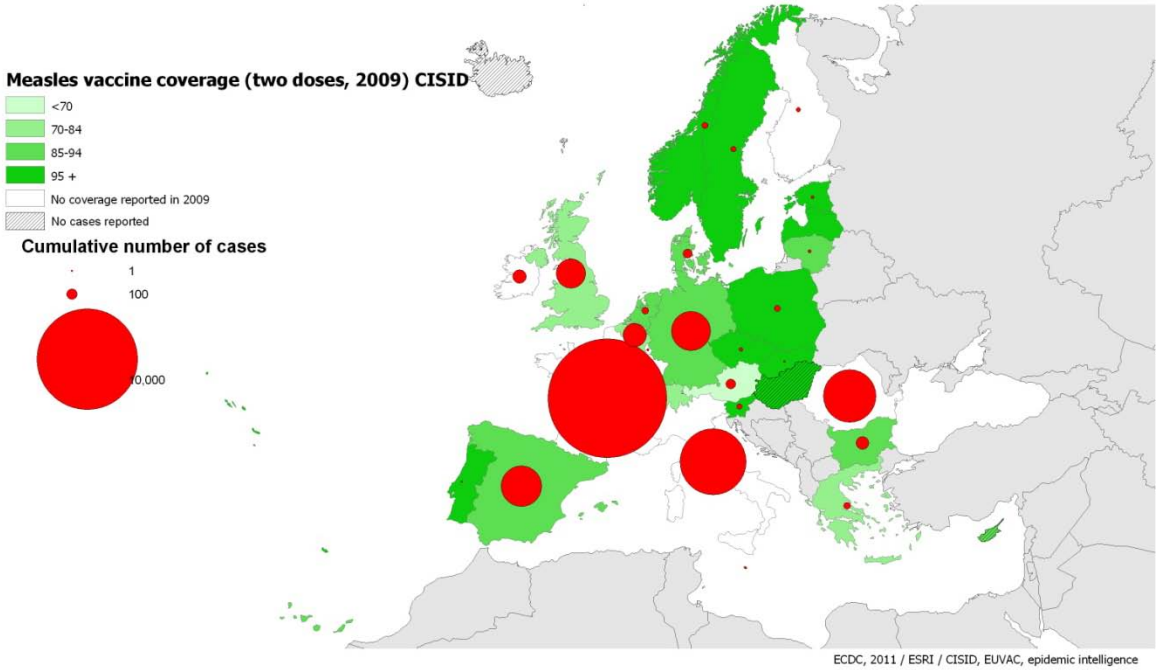
	Vaccinated	Not vaccinated	Unknown vaccination status	Total	%
Deaths*	1	3	4	8	0.04
Complications**					
Encephalitis	3	19	2	24	0.4
Pneumonia	134	580	258	972	17.5
Other complications	336	1 460	328	2 124	38.3
No complications	255	1 694	478	2 427	43.8

Data source: The European Surveillance System (TESSy)

** Information on outcome status was available for 19 710 cases*

*** Information on complications was available for 5 547 cases*

Figure 2: Distribution of measles cases in EU and EEA countries reported to TESSy (January – August 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 3: Distribution of notification rate (cases per 100 000 population) by country reported through TESSy, EU and EEA countries, January – August 2011

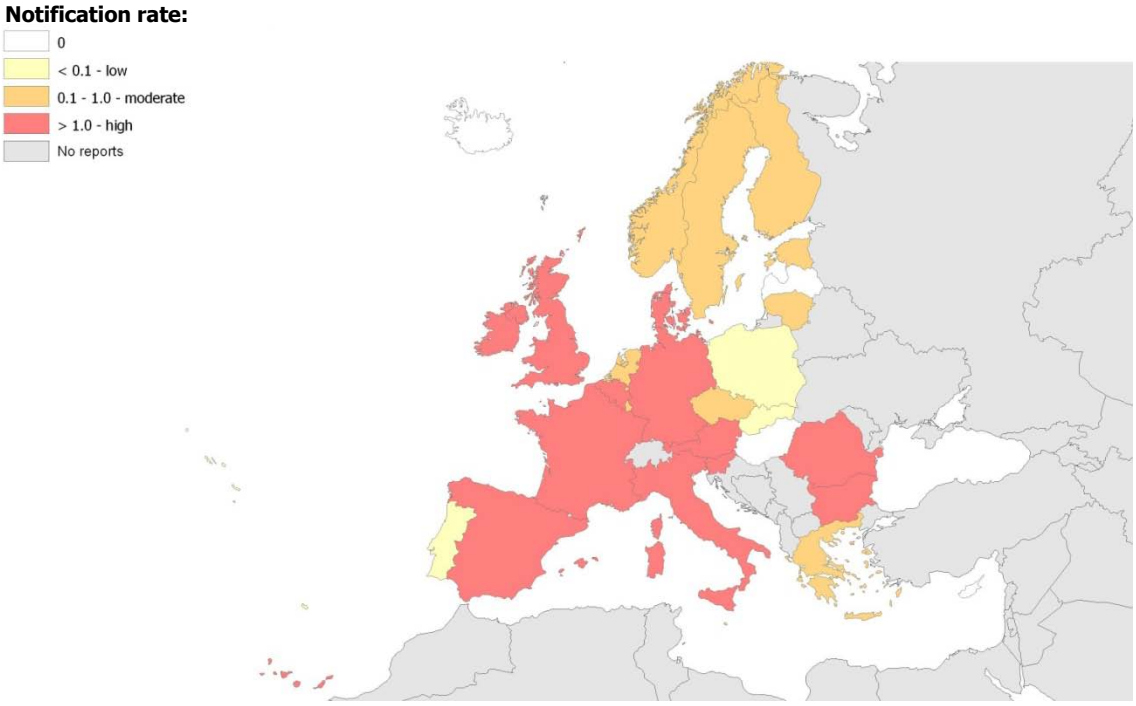
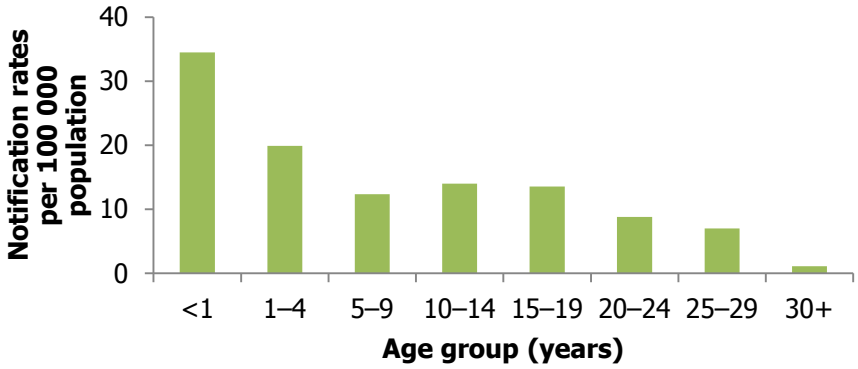


Figure 4: Distribution of **notification rates per 100 000 population by age group, January- August 2011, EU and EEA countries**



Note: Total number of cases with known age is 25 883.

Epidemic intelligence section

Nearly 800 new measles cases were detected through epidemic intelligence in the EU and EEA/EFTA countries since the previous measles monitoring report, bringing the total number of cases for 2011 to 29 104.

New outbreaks

Since the previous EMMO, no new measles outbreaks have been reported in EU and EEA/EFTA countries.

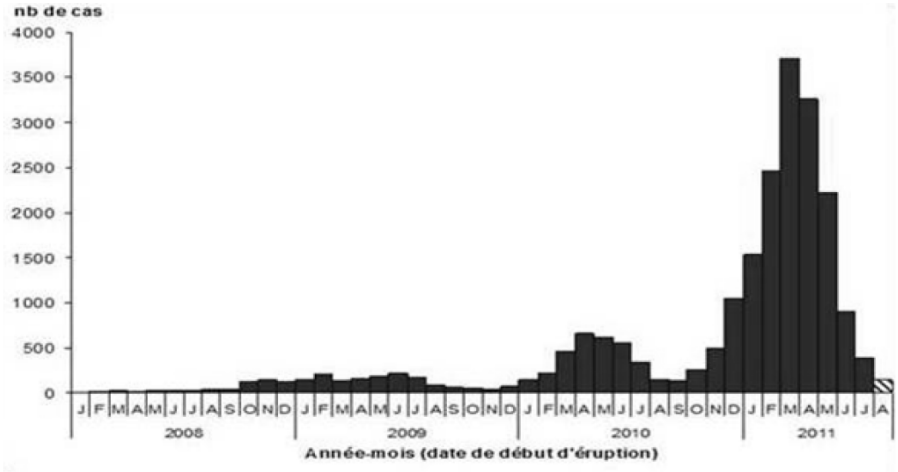
Updates on ongoing outbreaks and endemic transmission

France

Source: Institut de Veille Sanitaire

The measles epidemic in France is now in its third year. According to the Institut de Veille Sanitaire (InVS), close to 22 000 cases of measles have been reported since 1 January 2008. The outbreak accelerated in 2011, with 14 600 cases and six deaths reported during the first eight months of the year. Sixteen patients developed neurological complications, and 647 suffered from severe respiratory complications. The number of new cases in July and August were at the same level as in 2010. This may be attributed to the seasonal pattern of measles, and a fourth epidemic wave during the winter period 2011–2012 cannot be excluded.

Figure 5: **Distribution of reported measles cases by month, France, January 2008 – August 2011**



Source: Institut de Veille Sanitaire

Ireland

Source: Health Protection Surveillance Centre

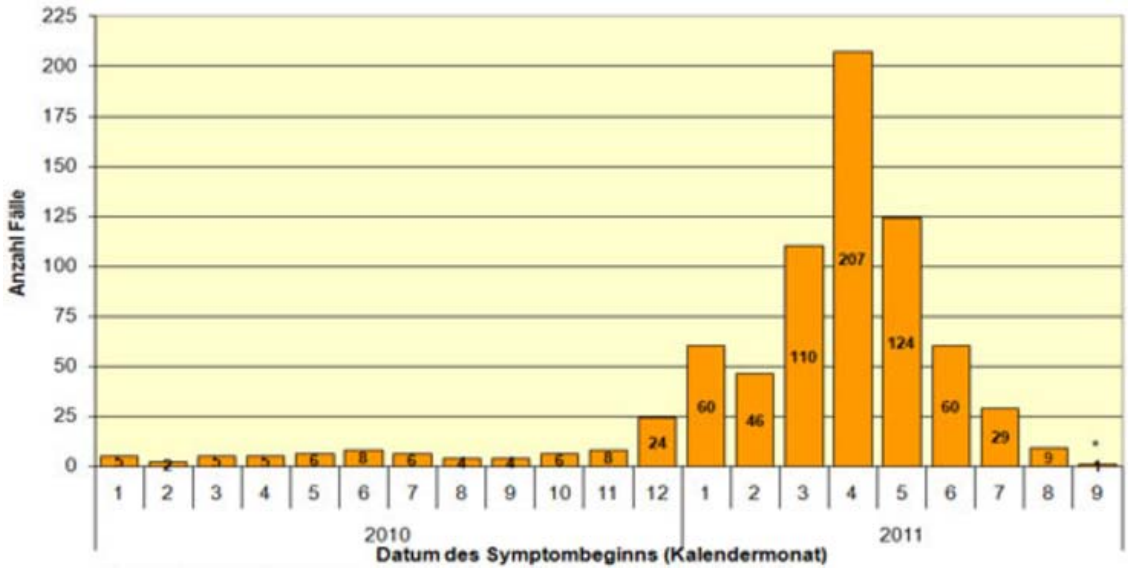
Ireland reported a recent rapid increase in numbers of measles cases, most of them centred in North Dublin City. The last outbreak in Dublin area was recorded in 2000, with more than 1 600 cases including three deaths among young children. Provisional data shows that the current outbreak is spreading, with 221 cases of measles reported in Ireland since the start of 2011. Over 85% of cases are in Dublin (mainly, but not exclusively, in the north Dublin area); 75% of cases have not received any MMR doses; 10% of cases have been hospitalised. No deaths have been reported.

Switzerland

Source: Federal Office of Public Health Switzerland

The outbreak in Switzerland is now considered over: a single case was reported in September.

Figure 6: Distribution of reported measles cases, January 2010 – September 2011, Switzerland



** The figures for September 2011 are preliminary*

Source: Federal Office of Public Health Switzerland

Other news

Source: Institut de Veille Sanitaire

A cross-sectional survey conducted among medical, nursing and midwife students at 15 hospitals in Paris showed a vaccination coverage of 79 % for the first dose of measles vaccine and 50 % for the second dose. The authors concluded that a better follow-up of vaccination guidelines is needed for healthcare workers in training.

Another cross-sectional study with the main objective of measuring vaccination coverage was conducted among doctors, nurses, assistant nurses and midwives in 35 hospitals and clinics in the mainland of France. Vaccination coverage with at least one dose of measles vaccine was 50%.

The European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe have, in a collaborative effort, developed an online tool for vaccination programme managers: MESSAGE (measles and rubella self-assessment generating tool).

The objective for developing this tool was to facilitate assessment of progress made towards measles and rubella elimination. It helps managers and public health experts to identify gaps in the policy framework, surveillance and monitoring, and service delivery. MESSAGE consists of a questionnaire, a self generated report, a feedback form, and a set of references.

Access to MESSAGE is granted after a fast and easy registration process with a valid e-mail account. More information is available at http://venice.cineca.org/ecdc_measles.html.

Acknowledgements

ECDC would like to thank the Member States for reporting measles and other vaccine-preventable diseases in a timely manner to the TESSy database and for agreeing to share their most recent measles-related data in the epidemic intelligence section of this publication.

ECDC would also like to express its gratitude to the EUVAC.NET hub team members at Statens Serum Institut in Denmark. The development of the EUVAC.NET would not have been possible without the dedication and long-term commitment demonstrated by the team in Copenhagen.

Erratum

On 23 September, the following correction was made in the online edition of the August 2011 EMMO:

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'.

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
- 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 from the EUVAC.NET website: EUVAC.NET

Notes

- The European Surveillance System (TESSy) uses a data field called 'date used for statistics', which contains a date chosen by the country for reporting purposes. This date may indicate the onset of disease, the date of diagnosis, the date of notification, or the date of laboratory confirmation.
- Countries report on measles and other vaccine-preventable diseases to TESSy at their own convenience. This implies that the date of retrieval can influence the presentation of data. For this reason, the date of data retrieval is indicated for all numbers, figures and graphs generated from TESSy data.