



Introduction

The following surveillance report on measles in EUVAC.NET countries covers the year 2001. Eighteen EUVAC.NET participating countries provided measles surveillance data. All incidence rates are based on reported measles cases and are per 10⁵ population per year. With a few exceptions, total numbers reported are likely to be incomplete. This report contains incidence data that have to be interpreted cautiously because of under-reporting and should not be used to as an indicator of true incidences.

Methods

Data from participating countries were sent to EUVAC.NET as an Excel file, by electronic mail. For 2001, 18 (95%) out of the 19 EUVAC.NET participating countries contributed data. Sixteen countries operating mandatory notification systems provided case-based data except for one country (Malta) that sent data in an aggregated format. Voluntary reporting took place in the French community of Belgium that provided an annual figure for measles cases. Data from sentinel surveillance systems for measles were also sent by three countries, two of which (Germany and Switzerland) also have mandatory notification systems in place. Epidemiological evaluation of data from sentinel surveillance systems is included separately.

In this report, evaluation is based on cases with date of disease onset in 2001. Where data on disease onset date are not available or considered unreliable, cases with the date of notification reported in 2001 were included. This applies mostly to cases from Germany. In some countries minor discrepancies with national data may arise if these include cases notified in 2001 but with disease onset in 2000.

Incidence – notifications and laboratory data

EUVAC.NET gatekeepers reported a total of 2225 laboratory-confirmed cases. For notifications, a total of 7428 cases were reported (table 1). For laboratory-confirmed cases, the crude incidence rate for measles per 100,000 in EUVAC.NET reporting countries for 2001 varied from zero in Portugal to 2.52 in Germany. Figure 1 is a schematic presentation of low, moderate and high incidences countries for notified measles cases.

Geographic distribution and seasonality

The distribution of reported measles cases varied considerably among the participating countries. The lowest incidences (<0.1) for measles were reported from Northern European countries namely Finland, Norway, and Sweden and no cases were reported from Iceland (table 1). Overall, most cases were reported to occur in the first half of the year particularly during the late winter months and throughout spring (figure 2).

Age distribution

Measles was reported in both children and adults with most cases however, in the 1-9 year age group (figure 3). These accounted for 52% of cases. The proportion of laboratory confirmed cases increased with increasing age group (figure 3).

Morbidity and mortality

Encephalitis as a complication of measles was reported in 21 cases. These were mostly (74%) in the 1-9 age group. One death attributed to measles was reported from Germany in an 8-month-old male.

Table 1. *Reported measles cases and laboratory confirmed cases by country, 2001 (n=7428)*

	<i>Total no. of reported cases</i>	<i>Crude incidence</i> ¹	<i>Total no. of laboratory confirmed cases</i>	<i>Percentage of laboratory confirmed cases</i>	<i>Laboratory confirmed incidence</i>
Austria ²					
Belgium ³	83	2.48	unk	-	-
Denmark	12	0.23	9	75%	0.17
Finland	1	0.02	1	100%	0.02
France ⁴					
Germany ⁵	6033	7.36	2068	34.28%	2.52
Greece	12	0.11	unk	-	-
Iceland	0	0	0	-	-
Ireland	244	6.35	unk	-	-
Italy	799	1.39	unk	-	-
Luxembourg	7	1.58	unk	-	-
Malta	2	0.51	1	50%	0.26
The Netherlands	17	0.11	4	23.53%	0.03
Norway	4	0.09	3	75%	0.07
Portugal	21	0.21	0	0%	0
Spain	54	0.14	31	57.41%	0.08
Sweden	5	0.06	4	80%	0.05
Switzerland ⁵	61	0.85	32	52.46%	0.45
United Kingdom	73	0.12	72	98.63%	0.12
Total	7428	2.36	2225	29.95%	0.71

unk = unknown

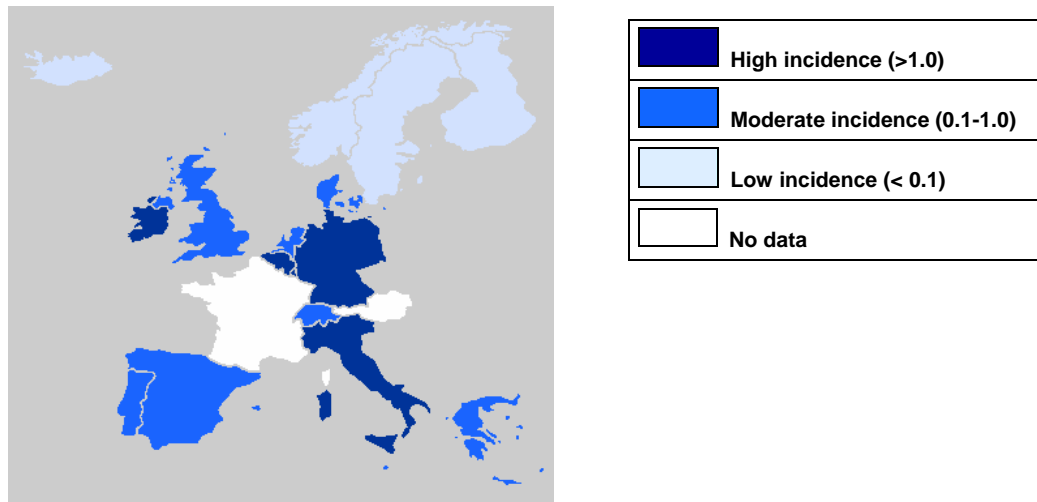
¹ Except for Belgium, incidence rates were based on population statistics for 2001 obtained from the Population Information page on the WHO website for the Computerized Information System for Infectious Diseases (CISID), <http://cisid.who.dk>. ² No data received. ³ Statistics apply to Belgian-French community only. ⁴ Data from sentinel surveillance system only received. ⁵ Also operates a sentinel surveillance system.

Table 2. *Number of reported measles cases by country and month, 2001 (n = 7322)*¹

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Austria ²													
Belgium ³	-	-	-	-	-	-	-	-	-	-	-	-	83
Denmark	1	0	0	0	1	5	3	0	1	0	0	1	12
Finland	0	0	0	0	1	0	0	0	0	0	0	0	1
France ⁴													
Germany ⁵	220	425	977	1316	1055	866	394	119	80	111	156	314	6033
Greece	0	3	0	2	0	2	1	0	0	2	2	0	12
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland ⁶	28	24	19	9	26	16	18	12	10	27	13	19	221
Italy	47	61	80	101	111	79	40	24	27	50	67	112	799
Luxembourg	0	0	1	1	1	0	4	0	0	0	0	0	7
Malta	1	0	1	0	0	0	0	0	0	0	0	0	2
The Netherlands	0	1	0	4	1	2	3	6	0	0	0	0	17
Norway	0	0	0	0	0	0	0	2	2	0	0	0	4
Portugal	3	0	3	2	1	2	4	2	2	0	1	1	21
Spain	6	2	7	8	12	9	5	2	0	1	1	1	54
Sweden	0	0	0	0	0	0	0	1	0	0	1	3	5
Switzerland ⁵	2	1	7	5	10	15	7	1	1	4	5	3	61
United Kingdom	4	4	3	3	6	4	4	3	7	4	7	24	73

¹ Excluding 106 cases where month is unknown. ² No data received. ³ Annual figure only; month unknown in 83 cases. Statistics apply to Belgian-French community only. ⁴ Data from sentinel surveillance system only received. No monthly measles data received. ⁵ Also operates a sentinel surveillance system. ⁶ Month unknown in 23 cases.

Figure 1. Incidence of measles cases in EUVAC.NET countries, 2001

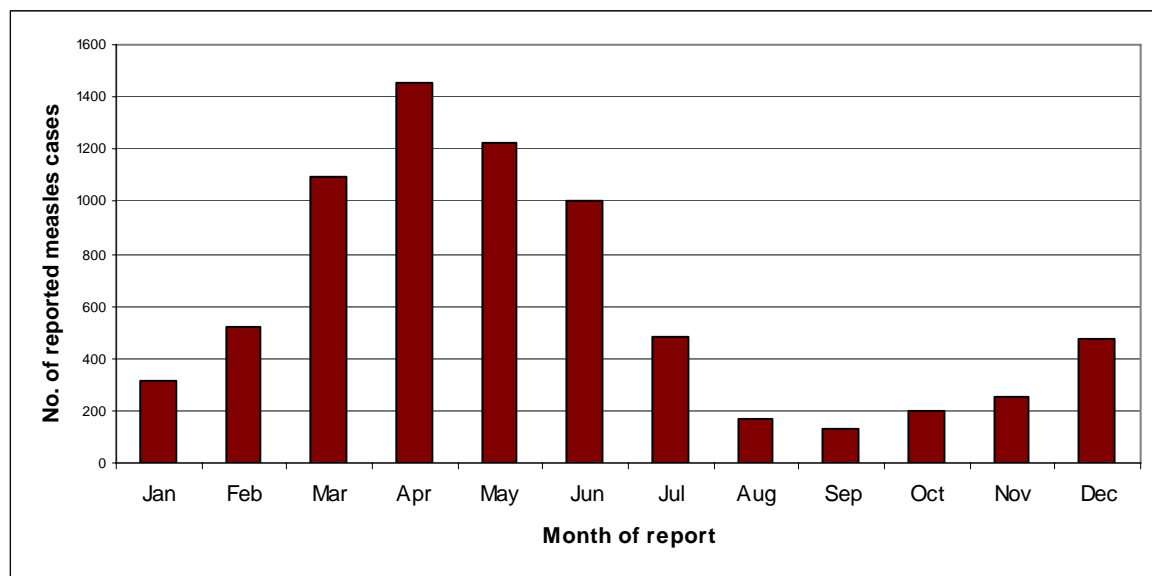


Data from Sentinel Surveillance Systems

Two countries namely Germany and Switzerland also sent data based on sentinel surveillance systems. In Germany, around 1100 physicians, mostly paediatricians amounting to 15% of all paediatricians in the country, participate in this system. In Switzerland, although a sentinel surveillance system operates independently of the mandatory notification system a small degree of overlap in reporting is not excluded. The Swiss data was obtained with the participation of 3-4% of all primary care physicians. In France, however, a sentinel surveillance system involving 300 general practitioners is the only system in place for reporting clinical measles cases.

Germany reported 878 cases giving an extrapolated crude incidence rate of about 14 per 100,000 population. Both France and Switzerland reported 22 cases each giving extrapolated 8460 and 700 cases respectively. Based on these figures the extrapolated crude incidence rates are 12 per 100,000 population for France and 9.77 per 100,000 for Switzerland.

Figure 2. Total number of reported measles cases by month in 16 reporting countries, 2001 (n=7322)¹



¹ Excluding 106 cases where month is unknown

Figure 3. Notified measles cases by age group and laboratory confirmation status in 17 reporting countries, 2001 (n=7428)

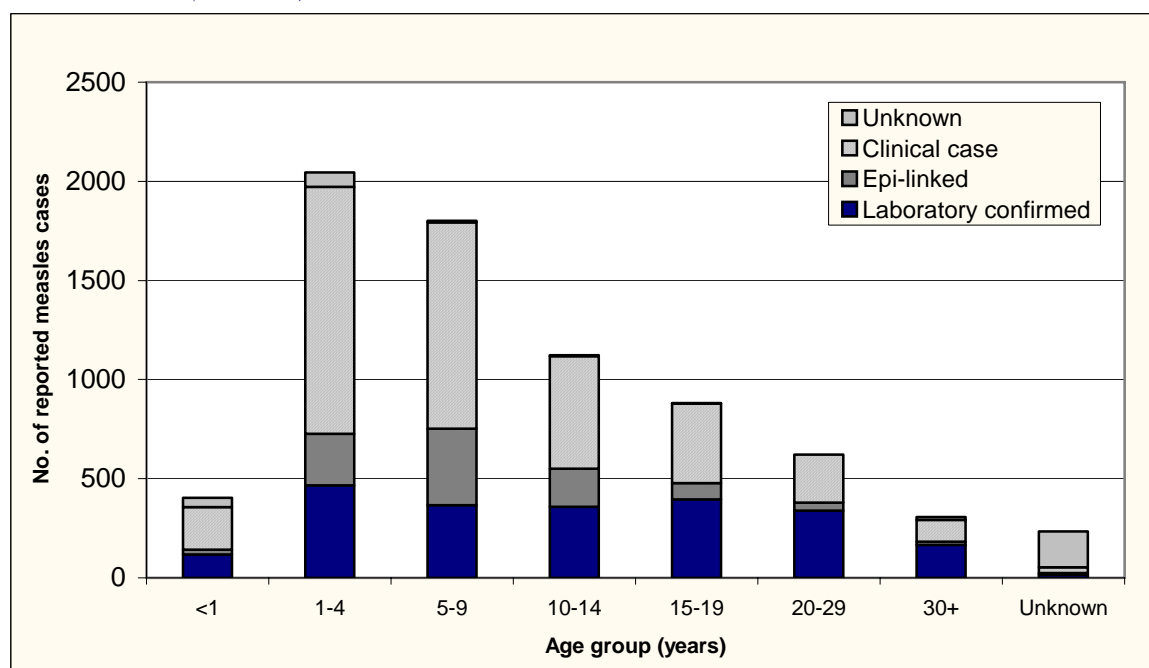


Table 3. Vaccination status of reported measles cases by country, 2001 (n=7428)

	No. unvaccinated	Percentage unvaccinated	No. vaccinated	Percentage vaccinated	No. unknown vaccination	Percentage unknown vaccination
Austria ¹						
Belgium ²	-	-	-	-	83	100%
Denmark	8	66.67%	1	8.33%	3	25%
Finland	1	100%	0	0%	0	0%
France ³						
Germany ⁴	3019	50.04%	337	5.59%	2677	44.37%
Greece	-	-	-	-	12	100%
Iceland	0	0%	0	0%	0	0%
Ireland	-	-	-	-	244	100%
Italy	513	64.21%	109	13.64%	177	22.15%
Luxembourg	3	42.86%	1	14.29%	3	42.86%
Malta	0	0%	1	50%	1	50%
The Netherlands	11	64.71%	1	5.88%	5	29.41%
Norway	1	25%	1	25%	2	50%
Portugal	6	28.57%	13	61.90%	2	9.52%
Spain	19	35.19%	21	38.89%	14	25.93%
Sweden	5	100%	0	0%	0	0%
Switzerland ⁴	42	68.85%	3	4.92%	16	26.23%
United Kingdom	51	69.86%	4	5.48%	18	24.66%
Total	3679	49.53%	492	6.62%	3257	43.85%

¹ No data received. ² Statistics apply to Belgian-French community only. ³ Sentinel surveillance systems operating. ⁴ Also operates a sentinel surveillance system.

Comments

This is the first time that measles surveillance data from EUVAC.NET countries were compiled together. The findings in this report document a widely varied incidence rate for measles in the different EUVAC.NET participating countries. While some countries with very low incidence rates are believed to have nearly eliminated measles, other countries are still endemic for the disease. Although no relationship with vaccination coverage for measles is attempted in this report, it is assumed that such differences are due to varying degrees of success in vaccination programmes. Overall, 49.53% of those reported with measles were unvaccinated. This percentage is likely to be higher as a large proportion of cases with unknown vaccination status was reported.

Although notification is statutory and universal case reporting is widely used for surveillance, under-reporting is common and must be taken into account in interpreting data. In addition to statutory notification systems, some countries have sentinel surveillance systems in place. However, data from such reporting systems cannot be evaluated with data from statutory notification systems due to lack of comparability giving different results.

High quality surveillance is now necessary to monitor trends, identifying the target population of vaccination programmes and determine whether coverage objectives are being reached.

In conclusion, while many countries have improved considerably the surveillance of measles, there is still the need for enhanced surveillance of measles that includes early reporting and rapid laboratory confirmation. EUVAC.NET's future plans include the collection of high quality data on vaccination coverage needed to relate this to the reported incidence.

Reporters

Mark Muscat and Henrik Bang

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