SURVEILLANCE REPORT

Monthly measles and rubella monitoring report

April 2020

Period covered: 1 March 2019–29 February 2020

Introduction

The monitoring report is based on measles and rubella data from The European Surveillance System (TESSy) for the period 1 March 2019 to 29 February 2020.

Routine disease data are submitted on a monthly basis by 29 European Union/European Economic Area (EU/EEA) countries and the United Kingdom (UK) for measles and 27 EU/EEA countries and the UK for rubella (France and Belgium do not submit data). TESSy data on measles and rubella are also published each month in the ECDC Surveillance Atlas of Infectious Diseases [1], an interactive tool providing access to additional tables and graphs not included in the report. Future issues of this report will no longer be published monthly, instead ECDC will publish the most recent data on a monthly basis through its Surveillance Atlas of Infectious Diseases [2] and static maps and tables [3].

In the current report – as well as in future reports – the presentation of UK data will change in order to reflect the country's withdrawal from the European Union. The new presentation of data will affect maps, tables and texts that include data referring to the period after 31 January 2020. These sections of the report will therefore calculate averages based on 29 countries, and not on 30 as before.

ECDC also monitors European measles and rubella outbreaks through epidemic intelligence and publishes updates in the Communicable Disease Threats Report (CDTR) [4]. Additionally, ECDC conducts assessments as significant outbreaks or public health events develop. The latest ECDC rapid risk assessment on the risk of measles transmission in the EU/EEA was published in May 2019 [5].

Measles

Measles in February 2020

Twenty-nine countries and the UK reported measles data for February 2020, with 436 cases reported by 18 countries and the UK. Eleven countries reported no cases (Figure 1).

Overall, case numbers decreased compared with the previous month. Romania, Bulgaria, France, Italy and Germany had the highest case counts with 145, 82, 75, 34 and 25 cases, respectively (Table 1).

Belgium and Poland reported aggregate data, while all other countries reported case-based data. Cases classified as discarded (see notes) are not included in the figures presented in the report.

Where available, links to recent updates published by national public health authorities in the EU/EEA can be found in the CDTR [3].

Figure 1. Number of measles cases by country, EU/EEA and the United Kingdom, February 2020 (n=436)

Measles cases March 2019–February 2020

From 1 March 2019 to 29 February 2020, 29 EU/EEA Member States and the UK reported 11 576 cases of measles, 9 168 (79%) of which were laboratory confirmed. No countries reported zero cases during this 12-month period. The highest number of cases were reported by France (2 466), Romania (1 542), Italy (1 353), Bulgaria (1 347) and Poland (1 032), accounting for 21%, 13%, 12%, 12% and 9% of all cases, respectively (Table 1). Notification rates above the EU/EEA average of 22.9 cases per million population were reported by Lithuania (268.4), Bulgaria (192.4), Romania (79.4), Malta (68.9), Slovakia (43.9), Luxembourg (40.7), Belgium (38.2), France (36.8), Czechia (36.1), Poland (27.2), Slovenia (25.9), Italy (22.4) and Iceland (22.4); see Figure 2.

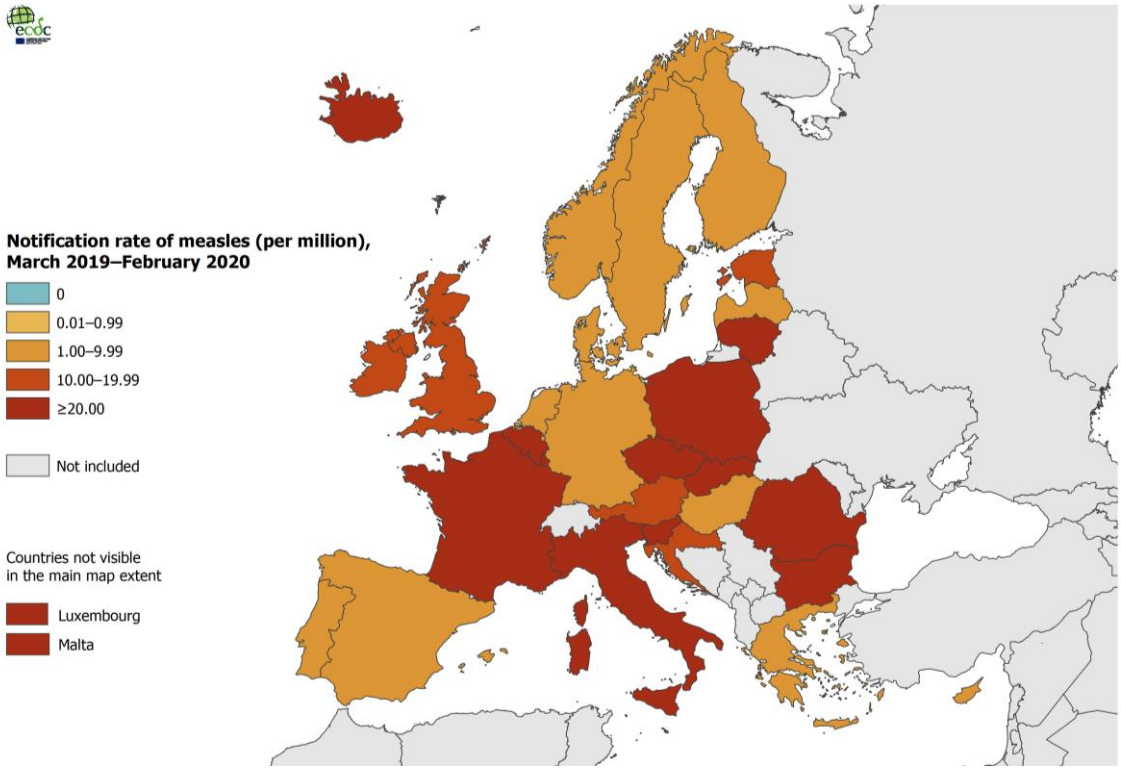
The number of measles cases reported to TESSy may be an underestimation in certain countries. This may apply to Romania where the sustained outbreak has caused delays in case-based reporting to TESSy. The most up-to-date data are, however, available from the Romanian National Institute of Public Health [5].

Table 1. Number of measles cases by month and notification rate per million population by country, EU/EEA and the UK, 1 March 2019–29 February 2020

	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2020	2020			
Country	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total cases	Cases per million	Total lab-positive cases
Austria	1	27	38	8	4	7	1	2	2	3	2	7	102	11.5	96
Belgium	66	32	93	61	26	14	12	30	34	22	32	16	438	38.2	305
Bulgaria	185	279	281	236	84	42	17	5	21	34	81	82	1347	192.4	1234
Croatia	0	0	6	4	10	4	14	12	1	0	0	0	51	12.5	51
Cyprus	0	1	3	1	0	0	0	0	0	0	0	0	5	5.7	4
Czechia	198	90	49	20	14	4	2	1	4	0	0	3	385	36.1	331
Denmark	4	2	1	1	0	0	0	0	0	0	4	0	12	2.1	12
Estonia	2	0	6	7	1	1	0	0	0	1	0	0	18	13.6	17
Finland	0	2	0	0	0	0	0	0	2	2	2	2	10	1.8	10
France	320	339	554	465	312	109	56	61	49	40	86	75	2466	36.8	1558
Germany	127	70	48	21	21	19	17	6	6	6	16	25	382	4.6	318
Greece	7	12	6	0	0	0	12	3	1	1	1	0	43	4	27
Hungary	4	2	9	0	1	0	0	0	0	0	0	0	16	1.6	16
Iceland	6	0	0	0	1	0	0	0	0	1	0	0	8	22.4	8
Ireland	18	6	5	2	2	1	3	9	7	3	1	12	69	14.1	30
Italy	228	309	236	216	152	77	20	7	10	12	52	34	1353	22.4	1181
Latvia	0	1	0	0	0	2	0	0	0	0	0	0	3	1.6	3
Lithuania	249	231	125	62	33	39	6	2	2	0	1	0	750	268.4	750
Luxembourg	15	7	1	1	0	0	0	1	0	0	0	0	25	40.7	25
Malta	3	13	11	3	0	1	0	0	1	0	0	2	34	68.9	34
Netherlands	10	2	13	17	10	17	3	0	4	0	0	1	77	4.5	63
Norway	7	3	3	1	0	2	0	0	0	0	3	1	20	3.8	17
Poland	287	289	249	124	41	9	5	6	2	8	5	7	1032	27.2	659
Portugal	2	0	2	1	0	0	0	0	0	1	5	2	13	1.3	12
Romania	188	110	148	123	110	80	112	100	79	90	257	145	1542	79.4	1084
Slovakia	70	105	43	9	3	6	3	0	0	0	0	0	239	43.9	206
Slovenia	0	6	8	3	1	1	0	0	7	22	5	1	54	25.9	54
Spain	24	68	99	34	13	12	6	1	3	10	10	10	290	6.2	273
Sweden	4	6	4	2	2	0	1	0	0	0	2	3	24	2.4	23
United Kingdom	110	119	129	115	87	42	29	49	15	26	39	-	-	-	-
EU/EEA 30	**2135**	**2131**	**2170**	**1537**	**928**	**489**	**319**	**295**	**250**	**282**	**604**	**-**	**11140**	**-**	**-**
EU/EEA 29	**2025**	**2012**	**2041**	**1422**	**841**	**447**	**290**	**246**	**235**	**256**	**565**	**428**	**10808**	**23.9**	**8401**
United Kingdom	110	119	129	115	87	42	29	49	15	26	39	8	768	11.5	**767**

Source: TESSy, data extracted on 26 March 2020
-: not presented

Figure 2. Measles notification rate per million population by country, EU/EEA and the UK, 1 March 2019–29 February 2020



Eight deaths (case fatality rate (CFR): 0.09%) attributable to measles were reported to TESSy during the 12-month period by Bulgaria (2), France (2), Romania (2), Hungary (1) and the United Kingdom (1); see Figure 3. The distribution of CFR by age group, in descending order, was 0.18% (5–9 years), 0.16% (15–19 years), 0.15% (20–29 years), 0.09% (under 1 year), 0.06% (1–4 years) and 0.04% (30 years and above).

Figure 3. Number of measles deaths by country, EU/EEA and the UK, 1 March 2019–29 February 2020 (n=8)

Importation status of the cases was reported by 30 countries and was known for 8 365 cases (72%), 591 (7%) of which were imported and 439 (5%) of which were import related (see notes).

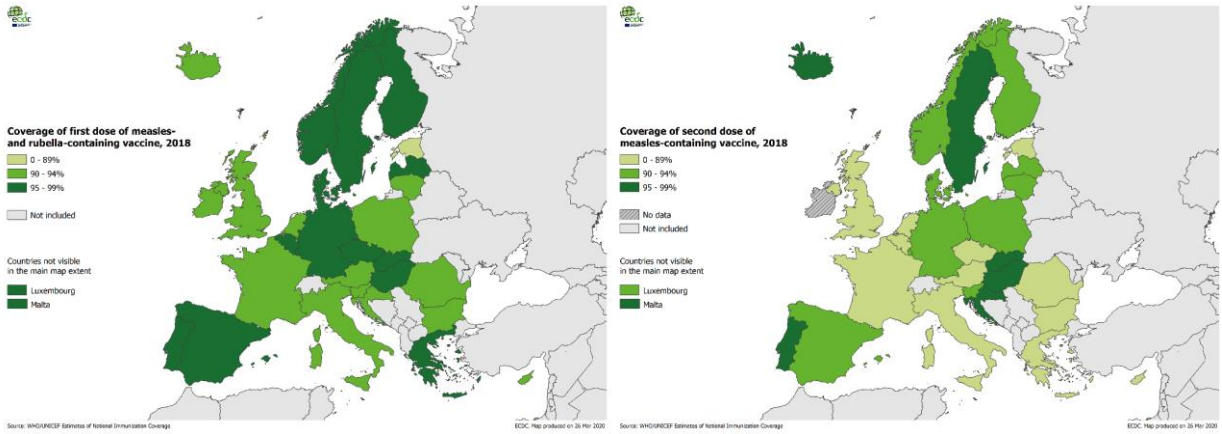
Of the 10 828 cases with known age, 3 023 (28%) were in children under five years; 5 824 (54%) cases were aged 15 years or older. The highest notification rates were observed in infants under one year of age (238.4 cases per million) and in children aged 1–4 years (87.8 cases per million).

A total of 2 424 cases (21%) had an unknown vaccination status. The proportion of cases with unknown vaccination status was highest in adults aged 30 years and above (1 312 of 3 353 cases; 39%). Of 8 404 cases (73% of all cases) with a known age and vaccination status, 5 980 (71%) were unvaccinated, 1 519 (18%) were vaccinated with one dose of a measles-containing vaccine, 790 (9%) were vaccinated with two or more doses, and 115 (1%) were vaccinated with an unknown number of doses.

The proportion of infection among unvaccinated cases was highest among infants under one year (1 029 of 1 187 cases; 87%). Infants under one year are particularly vulnerable to measles and its complications and are best protected by a high level of herd immunity because the first dose of a measles-containing vaccine is given after 12 months of age in most EU/EEA countries and the UK [6]. Among 1 836 cases reported in the ages 1–4 years (the target age group of the first, and in certain countries second, dose [7]), 1 162 (63%) were unvaccinated, 420 (23%) were vaccinated with one dose of a measles-containing vaccine, 22 (1%) were vaccinated with two or more doses and 3 (<1%) were vaccinated with an unknown number of doses.

Measles continues to spread across Europe because vaccination coverage in many countries remains suboptimal. Sustained coverage of at least 95% for two doses of a measles-containing vaccine at all subnational levels is recommended [8]. However, the latest WHO–UNICEF estimates of national immunisation coverage show that only five EU/EEA countries (Hungary, Malta, Portugal, Slovakia and Sweden) reported at least 95% vaccination coverage for both the first [9] and second [10] doses in 2018 (Figure 4). If the elimination goal is to be reached, many countries need to make sustained improvements in the coverage of their routine childhood immunisation programmes and also close immunity gaps in adolescents and adults who have missed vaccination opportunities in the past [5].

Figure 4. Vaccination coverage for first (left) dose of a measles- and rubella-containing vaccine and second (right) dose of a measles-containing vaccine, EU/EEA and the UK, 2018



Rubella

Rubella in February 2020

Twenty-six countries and the UK reported rubella data for February 2020. Overall, case numbers decreased compared with the previous month. Twenty-seven cases were reported by six countries (Germany, Ireland, Italy, Norway, Poland and Portugal) and 18 countries reported no cases (Figure 5). Eighteen of the 27 cases (67%) were reported by Poland (Table 2).

Austria did not report rubella data for February 2020 (see notes). Poland reported aggregate data, while all other countries reported case-based data. Cases classified as discarded (see notes) are not included in the figures presented in the report.

Figure 5. Number of rubella cases by country, EU/EEA and the UK, February 2020 (n=27)

Rubella cases March 2019–February 2020

From 1 March 2019 to 29 February 2020, nine EU/EEA Member States and the UK reported 376 cases of rubella, 38 (10%) of which were laboratory confirmed. Eighteen countries reported no cases during this 12-month period. The highest number of cases were reported by Poland (277), Germany (55), Italy (30), Romania (4) and Portugal (3), accounting for 74%, 15%, 8%, 1% and 1% of all cases, respectively (Table 2). Notification rates above the EU/EEA average (0.8 per million population) were reported by Poland (7.3) (Figure 6).

Data from Poland should be interpreted with caution, as only three of 277 cases (1%) were laboratory confirmed. The highest burden among cases reported by Poland was in children, with 93 (34%) cases in children aged 1–4 years, 59 (21%) cases in children aged 5–9 years, and 38 (14%) cases in adults aged 30 years and above.

No deaths attributable to rubella were reported to TESSy during the 12-month period.

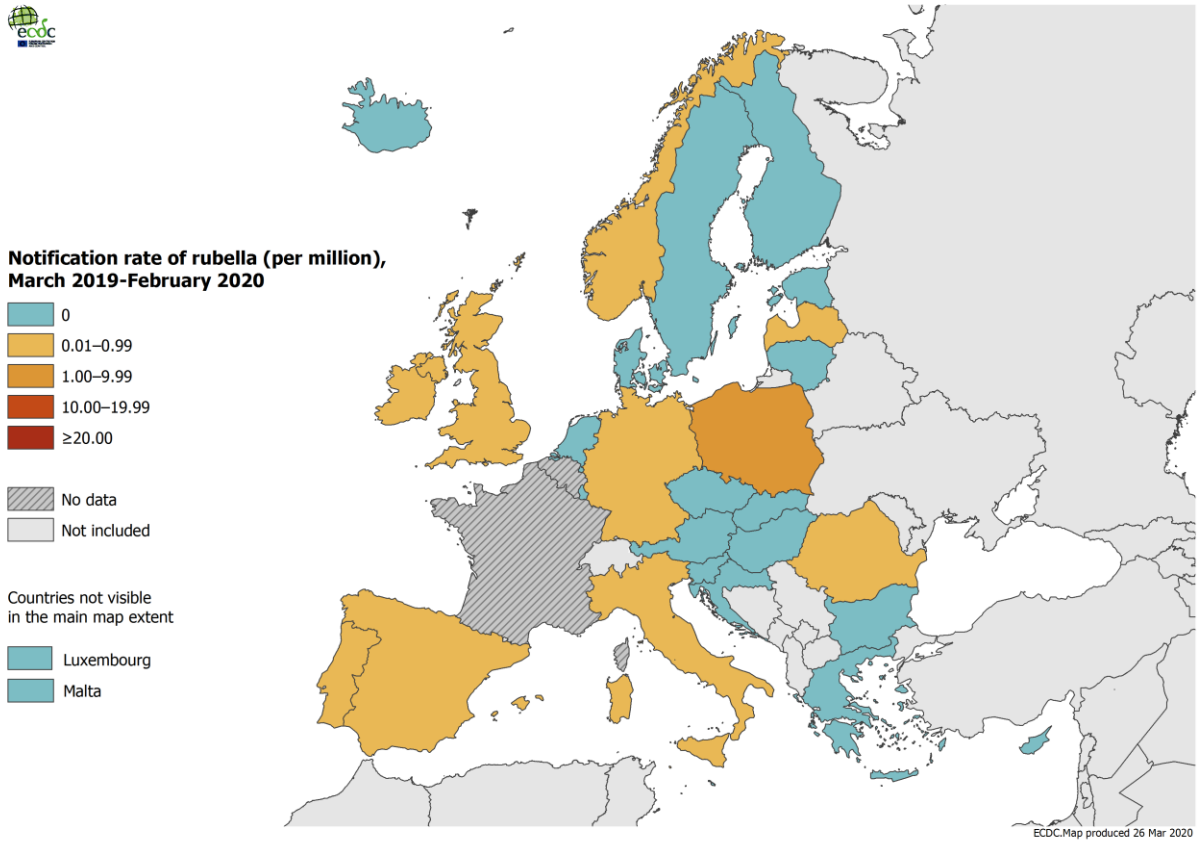
Table 2. Number of rubella cases by month and notification rate per million population by country, EU/EEA, 1 March 2019–29 February 2020

	2019	2019	2019	2019	2019	2019	2019	2019	2019	2019	2020	2020			
Country	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Total cases	Cases per million	Total lab-positive cases
Austria	0	0	0	0	0	0	0	0	0	0	0	.	0	0	0
Bulgaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croatia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Czechia	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	0	0	0	0
Estonia	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	0	0	0	0	0	0
Germany	7	5	5	5	8	10	3	1	4	2	2	3	55	0.7	14

Country	2019 Mar	2019 Apr	2019 May	2019 Jun	2019 Jul	2019 Aug	2019 Sep	2019 Oct	2019 Nov	2019 Dec	2020 Jan	2020 Feb	Total cases	Cases per million	Total lab-positive cases
Greece	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
Iceland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	0	1	0	0	0	0	0	0	0	0	0	1	2	0.4	1
Italy	2	0	4	5	0	2	1	0	1	3	9	3	30	0.5	12
Latvia	0	0	1	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	0	0	0	0
Luxembourg	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
Netherlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Norway	0	0	0	0	0	0	0	0	0	0	0	1	1	0.2	1
Poland	36	29	37	21	26	15	9	25	22	7	32	18	277	7.3	3
Portugal	0	0	0	0	0	0	0	1	1	0	0	1	3	0.3	0
Romania	0	1	0	0	1	0	1	1	0	0	0	0	4	0.2	4
Slovakia	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
Spain	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Sweden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	1	1	0	0	0	0	-	-	-	-
EU/EEA 30	**45**	**36**	**47**	**31**	**35**	**28**	**15**	**28**	**28**	**13**	**43**	**-**	**376**	**-**	**-**
EU/EEA 29	**45**	**36**	**47**	**31**	**35**	**27**	**14**	**28**	**28**	**13**	**43**	**27**	**374**	**0.2**	**36**
United Kingdom	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2

Source: TESSy, data extracted on 26 March 2020
.: data not reported
-: data not presented
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 is underestimated.

Figure 6. Rubella notification rate per million population by country, EU/EEA and the UK, 1 March 2019–29 February 2020



The latest WHO–UNICEF estimates of national immunisation coverage [11] show that 15 EU/EEA countries reported at least 95% vaccination coverage for the first dose of a rubella-containing vaccine in 2018 (Figure 4). Sustained vaccination coverage of at least 95% for at least one dose of a rubella-containing vaccine at all subnational levels is recommended to achieve elimination [8].

References

1. European Centre for Disease Prevention and Control. Surveillance Atlas of Infectious Diseases – Measles [Internet]. Stockholm: ECDC; 2020 [cited 7 April 2020]. Available from: https://atlas.ecdc.europa.eu/public/index.aspx?Dataset=335
2. European Centre for Disease Prevention and Control. Surveillance Atlas of Infectious Diseases [Internet]. Stockholm: ECDC; 2020 [cited 8 April 2020]. Available from: https://atlas.ecdc.europa.eu/public/index.aspx
3. European Centre for Disease Prevention and Control. Measles health topic page [Internet]. Stockholm: ECDC; 2020 [cited 8 April 2020]. Available from: https://www.ecdc.europa.eu/en/measles
4. European Centre for Disease Prevention and Control. Communicable disease threats reports [internet]. Stockholm: ECDC; 2020 [cited 8 April 2020]. Available from: https://www.ecdc.europa.eu/en/threats-and-outbreaks/reports-and-data/weekly-threats
5. European Centre for Disease Prevention and Control. Risk assessment: Who is at risk for measles in the EU/EEA? Identifying susceptible groups to close immunity gaps towards measles elimination – 28 May 2019. Stockholm: ECDC; 2019. Available from: https://ecdc.europa.eu/en/publications-data/risk-assessment-measles-eu-eea-2019
6. National Institute of Public Health Romania. Situatia rujeolei in Romania (Measles situation reports in Romania) [Internet]. Bucharest: INSP; 2019 [cited 7 April 2020]. Available from: http://www.cnscbt.ro/index.php/informari-saptamanale/rujeola-1

7. European Centre for Disease Prevention and Control. Vaccine Scheduler [Internet]. Stockholm: ECDC; 2019 [cited 7 April 2020]. Available from: http://vaccine-schedule.ecdc.europa.eu

8. World Health Organization Regional Office for Europe. Eliminating measles and rubella – Framework for the verification process in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2014. Available from: http://www.euro.who.int/__data/assets/pdf_file/0009/247356/Eliminating-measles-and-rubella-Framework-for-the-verification-process-in-the-WHO-European-Region.pdf

9. World Health Organization. WHO-UNICEF estimates of MCV1 coverage [Internet]. Geneva: WHO; 2019 [cited 3 September 2019]. Available from: http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tswucoveragemcv1.html

10. World Health Organization. WHO-UNICEF estimates of MCV2 coverage [Internet]. Geneva: WHO; 2019 [cited 3 September 2019]. Available from: http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tswucoveragemcv2.html

11. World Health Organization. WHO-UNICEF estimates of RCV1 coverage [Internet]. Geneva: WHO; 2019 [cited 3 September 2019]. Available from: http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tswucoveragercv1.html

Notes

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. All data presented in this report are based on the 'date used for statistics'. In addition, when reporting data on measles, rubella and other vaccine-preventable diseases to TESSy, countries may update previously reported data. This means that the date of retrieval can influence the data presented in this report, as later retrievals of data relating to the same period may result in slightly different numbers. The data for this report were retrieved on 26 March 2020.

In this report and in the ECDC Surveillance Atlas of Infectious Diseases [1], a Member State will be listed as having not reported data for a particular month if they do not have a reporting period in TESSy that covers the entire month. As such, if a Member State either reports no data for a month or some cases in a month but with an incomplete reporting period, the entire month is considered to have missing data. Similarly, if no cases occurred in a Member State in a given month this needs to be reported to TESSy in order for zero cases to be included in these surveillance outputs.

Cases classified as discarded were suspected cases where subsequent investigation revealed a negative laboratory test, or confirmation of an alternative aetiology, supported by epidemiological and/or virological evidence.

Cases were classified as imported if there was virological and/or epidemiological evidence of exposure outside the region or country 7–18 days prior to rash onset, while cases were classified as import-related if they were locally acquired infections caused by imported virus, as supported by epidemiological and/or virological evidence.

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