WHO EpiBrief

A report on the epidemiology of selected vaccine-preventable diseases in the European Region

This issue of WHO EpiBrief provides an overview of selected epidemiological characteristics of measles and rubella in the WHO European Region based on monthly surveillance data for the first half of 2020.
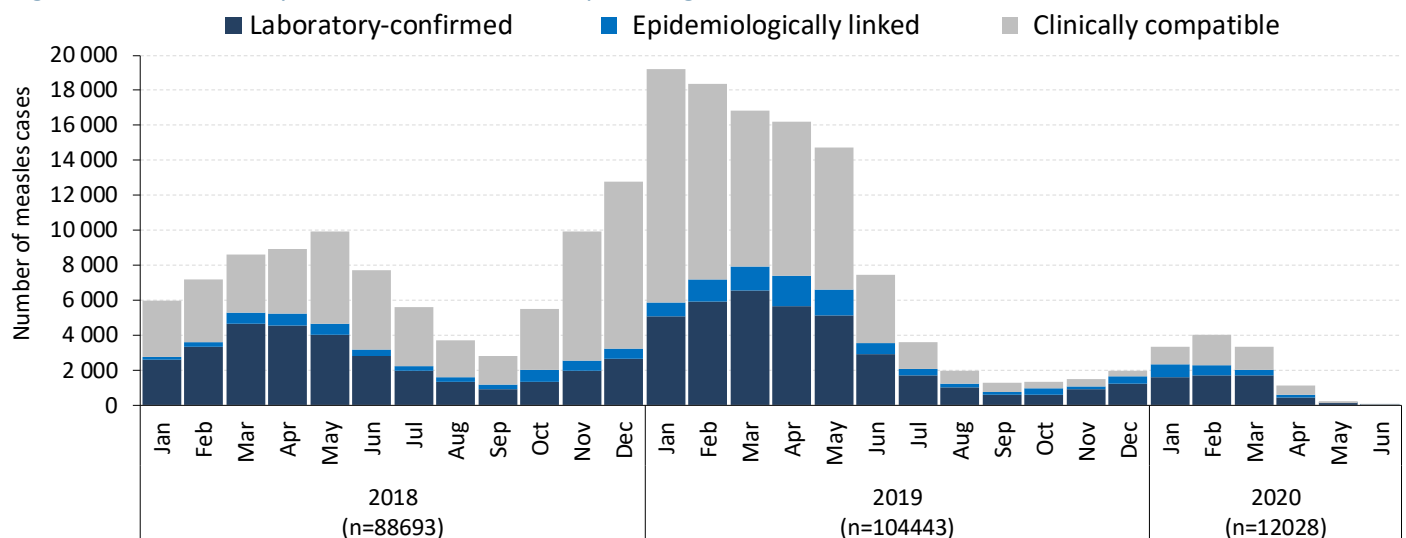
The measles and rubella surveillance data presented in this issue were reported by Member States of the WHO Regional Office for Europe and are incorporated in the Centralized information system for infectious diseases.[1] The analyses of these data are performed on cases with disease onset dates during the first half of 2020. Where these dates were unavailable, cases with the date of notification reported during this period were included. If different dates are used the numbers of cases in a specified time period may differ from reports produced by national or partner agencies. Tabulated surveillance data by country for 2019 and January through June of 2020 (as of 29 July 2020) are annexed to this issue. They are also published in WHO EpiData no. 7/2020.[2] Percentages in this report were rounded to the nearest whole number.

Measles in the WHO European Region

Notifications and laboratory data

For the first half of 2020, 12 028 measles cases were reported by 52 countries that submitted measles data (including zero reporting) (Table 1 in annex). This corresponds to a decline of 87% compared to cases reported during the first half of 2019 (n=92 798) (Fig. 1).

Of the total cases in the Region for January–June 2020, 10 615 cases (88%) were reported by 6 countries: Uzbekistan (n=4056; 34%), Kazakhstan (3265; 27%), Russian Federation (1030; 9%), Romania (971; 8%), Kyrgyzstan (705; 6%) and Turkey (588; 5%).

5561 cases (46%) were laboratory confirmed and 1816 cases (15%) were epidemiologically linked. The remaining 4651 cases (39%) were classified as clinically compatible. For the first half of 2020, 19 (51%) of the 37 countries notifying measles cases submitted 246 genomic sequence information to the Measles Nucleotide Surveillance database (MeaNS)[3] through WHO-accredited reference laboratories (as of 24 August 2020). The genotypes identified in the Region comprised D8 (n=128) and B3 (118). As in 2019, the dominant measles virus variant was D8 Gir Somnath.IND/42.16/ representing 33% of D8 variants. Other D8 variants included MVs/Phatthalung.THA/22.19 (9%), MVs/Southern Finland.FIN/49.18/ (9%) and MVs/Dagon Seikkan.MMR/5.18 (4%).

The named strain MVs/Kabul.AFG/20.2014/3 became the dominant B3 variant in the first half of 2020 (21% of all B3 variants) followed by Dublin.IRL/8.16/ (12.7%). No other genotypes were reported. Fig. 2 shows the number of sequences of measles virus in the WHO European Region reported to MeaNS.

Fig. 1. Measles cases by month in the WHO European Region, 2018–June 2020

Fig. 2. The number of sequences of measles virus in the WHO European Region reported to MeaNS by genotype, 2018 through week 19, 2020 (as of 29 July 2020)

Week and year of specimen collection
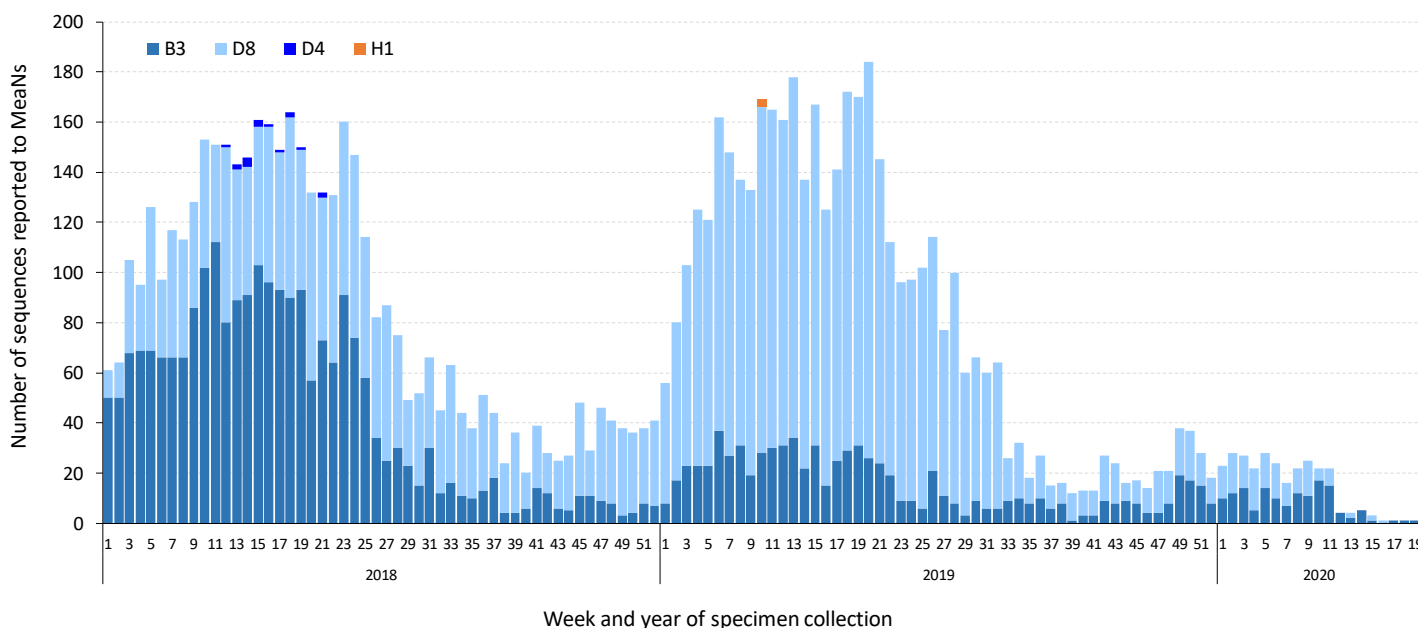
Age distribution
Of the total cases, the age group was known in 11 991 cases (99.7%): 4185 (35%) were <1 year old, 3132 (26%) were 1–4 years old, 2086 (17%) were 5–19 years old and 2588 (22%) were ≥20 years old (Fig. 3). The age distribution varied between countries. Fig. 4 shows the age distribution of measles cases in the 6 countries reporting the largest numbers of cases in the Region.

Vaccination status
Vaccination status was known for 10 280 cases (85%). Of the 8423 cases (82%) that were unvaccinated: 4031 (48%) were <1 year old, 2298 (27%) were 1–4 years old,

660 (8%) were 5–9 years old, 391 (5%) were 10–19 years old and 1043 (12%) were ≥20 years old. The remaining 1857 cases (18%) were reportedly vaccinated with at least one dose of measles-containing vaccine (MCV).

Hospitalization
Data on hospitalization status were available for 11 571 (96%) cases. Of these, 10 416 cases (90%) were hospitalized.

Measles-related deaths
In the first half of 2020, there were 10 reported measles-related deaths in 4 countries: Kazakhstan (5 deaths), Bulgaria (2), Turkey (2) and Kyrgyzstan (1). This corresponded to a death rate per 1000 measles cases of 0.83.

4 deaths occurred in infants, 4 deaths occurred in children between 1 and 7 years of age and 2 deaths were adults aged 29 and 45. All but one of the 10 deaths were laboratory-confirmed cases of measles; one case was epidemiologically-linked to a laboratory confirmed case. 8 fatal cases were unvaccinated. In the remaining 2 cases the vaccination status was unknown.

Imported cases
Importation status was known for 5928 (49%) measles cases. Of these, 345 (5.8%) cases were imported. Most imported cases (63%; n=307) were reported by Uzbekistan (n=241), Russian Federation (28), France (14), Italy (10), United Kingdom (7) and Germany (7). (Table 1 in annex).
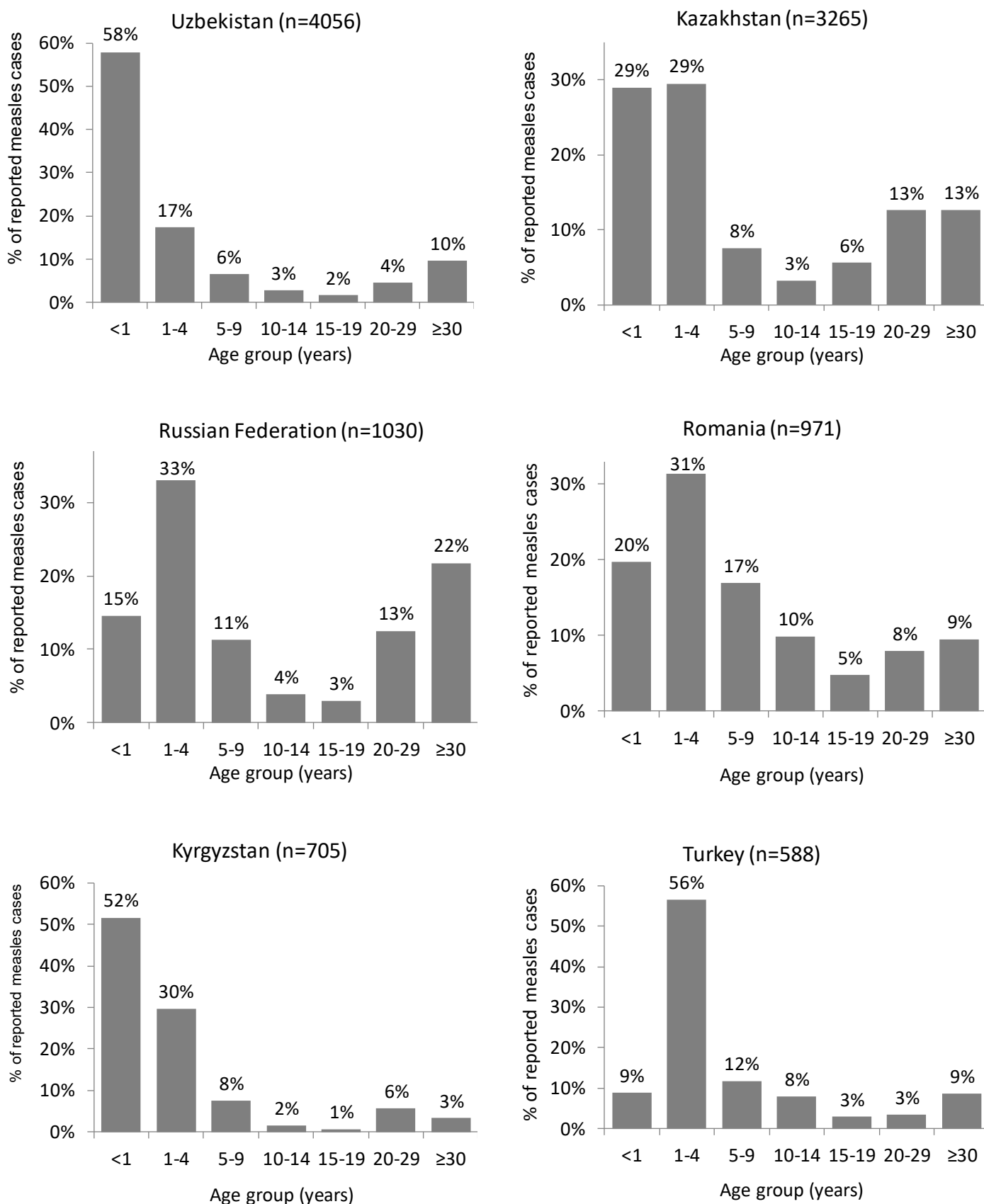
Fig. 3. Age distribution of measles cases in the WHO European Region, January–June 2020 (n=12 028)*
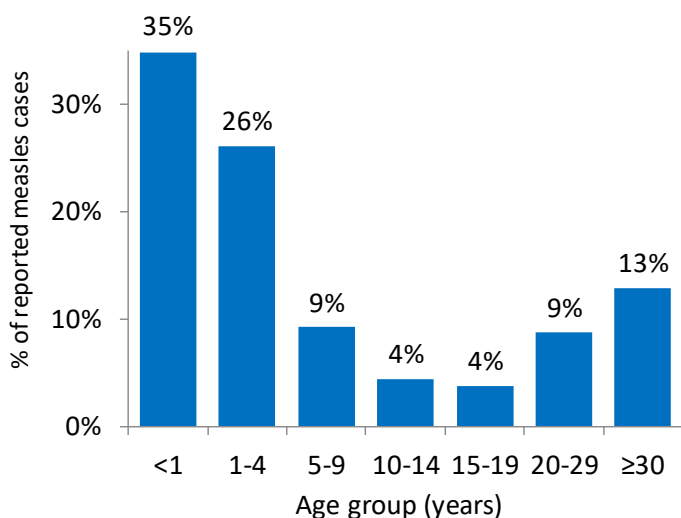
N.B. Discarded cases are not included.
*For 37 cases the age group was not reported.

Fig. 4. Age distribution of measles cases in the six countries with the largest numbers of cases in the WHO European Region, January–June 2020

Rubella in the WHO European Region

Notifications and laboratory data

For the first half of 2020, 150 rubella cases were reported by 14 countries among 48 that submitted rubella data (including zero reporting) (Table 2 in annex). 90% of cases (n=135) were reported by Poland (49%; n=74), followed by Ukraine (16%; 24), Germany (9%; 13), Italy (8%; 12) and Turkey (8%; 12).

Most cases (78%; n=117) were classified as clinically compatible and were mostly (81%) reported by Poland (n=74) and Ukraine (21). 1 case was classified as epidemiologically linked and 32 cases (21%) were laboratory confirmed.

During the first half of 2020, one rubella virus sequence (genotype 2B) was entered in the Rubella Nucleotide Surveillance database (RubeNS)[4] (as of 24 August 2020).

Age distribution

The age group was known in all 150 cases: 17 (11%) were <1 year old, 50 (33%) were 1–4 years old, 35 (23%) were 5–19 years old and 48 (32%) were ≥20 years old (Fig. 5). Of the 32 laboratory-confirmed cases, 1 was <1 year old, 12 were 1–4 years old, 2 were 5–14 years old, 1 was 15–19 years old, 4 were 20-29 years old and 12 were ≥40 years old (Fig.6). Eight laboratory-confirmed cases were in females aged 21-38.

Vaccination status

Vaccination status was known in all 150 cases. Of the 46 (31%) unvaccinated cases: 16 (35%) were <1 year old, 10 (22%) were 1–4 years old, 3 (7%) were 5–19 years old and 17 (37%) were ≥20 years old. The remaining 104 cases (69%) were reportedly vaccinated with at least one dose of rubella-containing vaccine.

Fig. 5. Age distribution of rubella cases in the WHO European Region, January–June 2020 (n=150)
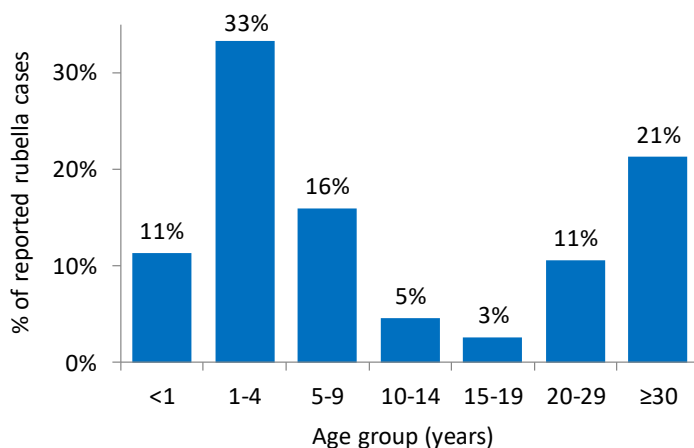
N.B. Discarded cases are not included.

Fig.6. Classification of reported rubella cases by age group in the WHO European Region, January–June 2020 (n=150)
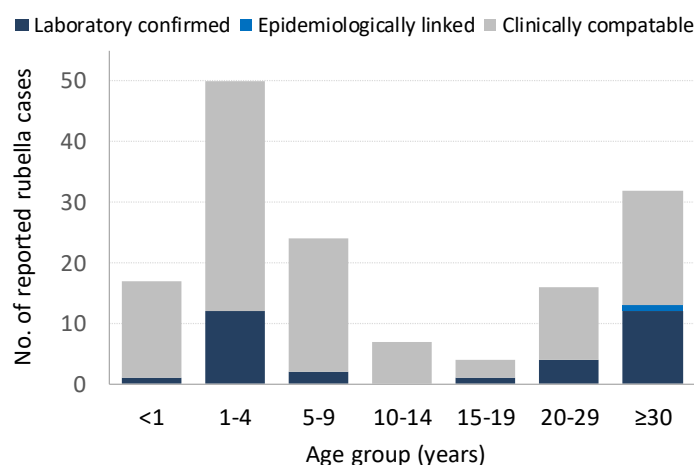
Imported cases

Importation status was known in 48 (32%) rubella cases. Of these, 2 cases (4%) were imported cases. Imported cases were reported by Hungary (n=1) and Norway (1).

Comments

Measles and rubella in the WHO European Region

The number of reported measles cases in the Region for the first half of 2020 (n=12 028) was 87% less than that reported for the first half of 2019 (92 798). The number of countries reporting monthly zero measles cases increased from 15 in February 2020 to 44 in June 2020. Factors related to the ongoing COVID-19 pandemic are likely to have contributed to these observed trends. These include:

• fewer visits to hospitals and medical practitioners during full or partial lockdown of countries, which may have led to milder cases of measles going undetected;

• decreased measles virus transmission as a result of stay-at-home recommendations, closure of schools, banning of mass gatherings, closer of international borders, widespread physical distancing and improved hand hygiene and coughing/sneezing etiquette; and

• interrupted or disrupted disease surveillance due to diversion of human and other resources to COVID-19-related matters.

The number of reported rubella cases in the Region for the first half of 2020 (n=150) was also lower than that reported for the same period in 2019 (409) largely due to a decline in cases reported by Poland (from 188 cases to 74 cases) and Ukraine (from 94 cases to 24 cases). As in previous years, most reported rubella cases were

classified as clinically compatible. Considerable effort is required to increase the level of laboratory confirmation of suspected cases to confirm the occurrence or absence of rubella and exclude the possibility of over-reporting.

Vaccination

Attaining the optimal immunization coverage (≥95%) with two MCV doses at all subnational levels (provinces, regions and districts) whilst closing immunity gaps in all age groups is crucial. Despite the reduction in the number of reported measles cases, there are persisting immunity gaps in all age groups particularly in children <10 years old and in adults ≥20 years old.

Some countries reported partial or full disruption of immunization services while movement restrictions were in place as part of the COVID-19 prevention and control measures during the first few months of the pandemic Any disruption of routine immunization services, even for short periods, will inevitably result in an accumulation of susceptible individuals, and an increased likelihood of outbreaks of vaccine-preventable diseases. Countries where disruptions occurred either at local or national level have been urged to make all possible efforts to equitably sustain high population immunity. This includes enumerating the cohorts of children who have missed their vaccine doses and putting in place an action plan for tailor-made catch-up immunization. WHO guidance on routine immunization services during the COVID-19 pandemic in the WHO European Region are available online.[5]

Surveillance

All countries are urged to continue ensuring that their surveillance systems for measles and rubella are sensitive and specific enough to detect, confirm and classify all suspected cases.[6] Countries should consider assessing the extent of the impact of the COVID-19 pandemic on surveillance for measles, rubella and other outbreak-prone vaccine-preventable diseases (VPDs) to ascertain if the observed decline in reported cases is likely due to changes in epidemiology (as an indirect result of non-pharmaceutical measures in COVID-19 response), or to decreased surveillance performance. The latter may lead to increased risk for outbreaks due to undetected circulation of measles, rubella or other VPDs, and efforts (including dedication of appropriate resources) should be made by countries to ensure high quality VPD surveillance.

Elimination status

As part of the annual verification process, the European Regional Verification Commission for Measles and Rubella Elimination (RVC) held a virtual session on 29 June 2020 to review annual status update reports for 2019 of 11 countries: Armenia, Azerbaijan, Denmark, Estonia, Finland, Latvia, Netherlands, Norway, Sweden, Tajikistan and Turkmenistan. The RVC verified that by the end of 2019, all 11 countries had maintained their measles elimination status; and 10 countries that had previously achieved rubella elimination maintained this status. The Commission also determined that for the first time, Denmark was verified as having eliminated rubella. Therefore, by the end of 2019 all 11 countries demonstrated the absence of endemic transmission of both diseases. Two more sessions are planned before the end of 2020 for the RVC to review the annual status update reports for 2019 of the remaining countries.[7]

Elimination of both measles and rubella remains a priority goal for all countries of the WHO European Region. The cornerstones for eliminating these diseases remain high population immunity, closure of immunity gaps in the population and high-quality surveillance to monitor disease occurrence for public health action.

References

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7. World Health Organization Regional Office for Europe (2020). Measles and rubella elimination: verification process continues amid COVID-19 pandemic. www.euro.who.int/en/health-topics/disease-prevention/vaccines-and-immunization/news/news/2020/8/measles-and-rubella-elimination-verification-process-continues-amid-covid-19-pandemic (accessed 19 August 2020).

Annex

Table 1. Measles cases in the WHO European Region: classification, reporting and surveillance performance, January–June 2020 (as of 29 July 2020)

Country	Total Population in 2019[1]	2019 (as of 29 July 2020) Incidence Rate (per 1 million population)	Total measles cases[2]	Total measles deaths	2020 Total measles cases[2]	Classification Lab confirmed	Epi-Link	Clinically compatible[3]	Discarded measles	Imported cases	Measles deaths	Report Completeness[4]	Timeliness[4]	Month & year of last report	Surveillance Indicators[6] Laboratory investigation rate[4]	Rate of discarded cases[5]	Origin of infection[4]	Timeliness of investigation[4]
Albania[7]	2 880 917	167.31	482	2	3	3	0	0	12	0	0	100%	100%	Jun-20	100%	0.4	100%	100%
Andorra	77 142	0.00	0	-	0	0	0	0	0	-	-	100%	83%	Jun-20	-	0.0	-	-
Armenia	2 957 731	2.37	7	0	0	0	0	0	18	-	-	100%	100%	Jun-20	100%	0.6	-	100%
Austria	8 955 102	16.86	151	0	25	20	3	2	1	1	0	100%	100%	Jun-20	91%	0.0	100%	8%
Azerbaijan	10 047 718	25.98	261	0	2	2	0	0	7	0	0	100%	83%	Jun-20	100%	0.1	100%	89%
Belarus[7]	9 452 411	20.21	191	0	0	0	0	0	96	-	-	100%	100%	Jun-20	100%	1.0	-	0%
Belgium	11 539 328	41.68	481	0	45	14	6	25	-	0	0	100%	100%	Jun-20	-	-	-	-
Bosnia and Herzegovina	3 301 000	424.42	1401	0	4	0	0	4	-	0	0	100%	67%	Jun-20	-	-	-	-
Bulgaria	7 000 119	178.14	1247	0	245	227	7	11	-	2	2	100%	100%	Jun-20	97%	-	1%	100%
Croatia	4 130 304	12.59	52	0	0	0	0	0	0	-	-	100%	100%	Jun-20	-	0.0	-	-
Cyprus	1 198 575	5.01	6	0	1	1	0	0	-	1	0	100%	83%	Jun-20	100%	-	100%	100%
Czech Republic	10 689 209	53.98	577	0	4	4	0	0	-	1	0	100%	100%	Jun-20	100%	-	100%	0%
Denmark	5 771 876	2.60	15	0	4	4	0	0	-	0	0	100%	100%	Jun-20	100%	-	100%	0%
Estonia	1 325 648	20.37	27	0	0	0	0	0	31	-	-	100%	100%	Jun-20	100%	2.3	-	100%
Finland	5 532 156	2.17	12	0	5	5	0	0	-	2	0	100%	100%	Jun-20	100%	-	100%	0%
France	65 129 728	40.49	2637	2	230	158	31	41	-	14	0	100%	100%	Jun-20	94%	-	81%	0%
Georgia	3 996 765	980.79	3920	2	14	12	0	2	24	0	0	100%	83%	Jun-20	95%	0.6	93%	89%
Germany	83 517 045	6.07	507	0	72	53	14	5	-	7	0	100%	100%	Jun-20	91%	-	85%	0%
Greece	10 473 455	4.30	45	0	2	2	0	0	0	0	0	100%	100%	Jun-20	100%	0.0	100%	0%
Hungary	9 684 679	2.37	23	1	0	0	0	0	0	-	-	100%	100%	Jun-20	-	0.0	-	-
Iceland	339 031	26.55	9	0	0	0	0	0	-	-	-	100%	100%	Jun-20	-	-	-	-
Ireland	4 882 495	14.95	73	0	18	2	0	16	-	2	0	100%	100%	Jun-20	28%	-	28%	11%
Israel	8 519 377	120.67	1028	0	6	6	0	0	-	0	0	100%	100%	Jun-20	100%	-	0%	83%
Italy	60 550 075	26.75	1620	1	101	81	12	8	19	10	0	100%	100%	Jun-20	94%	0.0	82%	0%
Kazakhstan	18 551 427	718.33	13326	21	3265	2003	1004	258	-	0	5	100%	33%	Jun-20	-	-	-	-
Kyrgyzstan[7]	6 415 850	358.95	2303	0	705	150	319	236	143	5	1	100%	100%	Jun-20	35%	2.2	100%	97%
Latvia	1 906 743	1.05	2	0	0	0	0	0	-	-	-	100%	100%	Jun-20	-	-	-	-
Lithuania	2 759 627	301.49	832	0	1	1	0	0	-	1	0	100%	100%	Jun-20	100%	-	100%	100%
Luxembourg	615 729	38.98	24	0	0	0	0	0	2	-	-	100%	100%	Jun-20	100%	0.3	-	100%
Malta	440 372	72.67	32	0	2	2	0	0	-	0	0	100%	100%	Jun-20	100%	-	100%	0%
Monaco	38 964	0.00	0	-	0	0	0	0	0	-	-	100%	83%	Jun-20	-	0.0	-	-
Montenegro	627 987	0.00	0	-	-	-	-	-	-	-	-	0%	0%	Dec-19	-	-	-	-
Netherlands	17 097 130	4.91	84	0	2	2	0	0	-	1	0	100%	100%	Jun-20	100%	-	50%	0%
North Macedonia	2 083 459	904.27	1884	5	0	0	0	0	-	-	-	17%	17%	Jan-20	-	-	-	-
Norway	5 378 857	3.16	17	0	4	4	0	0	-	2	0	100%	100%	Jun-20	100%	-	75%	100%
Poland	37 887 768	36.08	1367	0	36	18	1	17	-	0	0	100%	100%	Jun-20	-	-	-	-
Portugal	10 226 187	0.98	10	0	8	7	0	1	13	4	0	100%	100%	Jun-20	81%	0.1	50%	100%
Republic of Moldova	4 043 263	22.01	89	0	17	17	0	0	8	1	0	100%	100%	Jun-20	100%	0.2	100%	96%
Romania	19 364 557	89.65	1736	5	971	486	312	173	-	0	0	100%	100%	Jun-20	76%	-	100%	29%
Russian Federation	145 872 256	28.58	4169	0	1030	1008	21	1	823	28	0	100%	100%	Jun-20	100%	0.6	100%	37%
San Marino	33 860	324.87	11	0	0	0	0	0	0	-	-	100%	67%	Jun-20	-	0.0	-	-
Serbia	8 772 235	2.39	21	0	0	0	0	0	-	-	-	100%	100%	Jun-20	-	-	-	-
Slovakia	5 457 013	57.17	312	0	0	0	0	0	0	-	-	100%	100%	Jun-20	-	0.0	-	-
Slovenia	2 078 654	23.09	48	0	6	6	0	0	-	1	0	100%	100%	Jun-20	100%	-	100%	100%
Spain	46 736 776	6.25	292	0	71	70	1	0	36	1	0	100%	100%	Jun-20	100%	0.1	99%	47%
Sweden	10 036 379	1.99	20	0	5	5	0	0	-	4	0	100%	100%	Jun-20	100%	-	100%	0%
Switzerland	8 591 365	26.65	229	2	33	29	4	0	85	7	0	100%	100%	Jun-20	100%	1.0	88%	30%
Tajikistan	9 321 018	0.75	7	0	168	89	74	5	72	0	0	100%	83%	Jun-20	97%	0.8	1%	100%
Turkey[7]	83 429 615	34.66	2892	3	588	588	0	0	1227	1	2	100%	100%	Jun-20	100%	1.5	21%	98%
Turkmenistan[7]	5 942 089	0.00	0	-	0	0	0	0	46	-	-	100%	100%	Jun-20	100%	0.8	-	100%
Ukraine	43 993 638	1303.19	57332	20	195	59	7	129	-	1	0	100%	100%	Jun-20	32%	-	97%	99%
United Kingdom	67 530 172	13.06	882	1	84	84	0	0	-	7	0	100%	100%	Jun-20	100%	-	100%	0%
Uzbekistan	32 981 716	53.06	1750	0	4056	339	0	3717	1	241	0	100%	83%	Jun-20	10%	0.0	56%	90%
Region	**930 166 592**	**112.28**	**104443**	**65**	**12028**	**5561**	**1816**	**4651**	**2664**	**345**	**10**	**97%**	**92%**		**59%**	**0.5**	**68%**	**72%**

Data source: Monthly aggregated and case-based data reported by Member States to WHO/Europe directly or via ECDC/TESSy. Member States submitting aggregate data: Belgium, Bosnia and Herzegovina, Kazakhstan, North Macedonia, Poland (since Feb 2019) and Serbia.

[1] *Population source*: United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2019 Revision.

[2] All confirmed measles cases regardless of origin.

[3] Unless specified as laboratory confirmed or epi-linked, cases are classified as clinically compatible.

[4] Target (>=80%) not achieving are highlighted in red.

[5] Rate of discarded cases not achieving the target (>=2 discarded cases per 100 000) are highlighted in red. Rate of discarded cases is not calculated for the countries submitting only confirmed measles cases.

[6] Surveillance indicators can not be calculated for Member States submitting aggregate data.

[7] Country classifies discard cases as "discarded, not measles, not rubella".

Table 2. Rubella cases in the WHO European Region: classification, reporting and surveillance performance, January–June 2020 (as of 29 July 2020)

Country	Total Population in 2019[1]	2019 (as of 29 July 2020)		2020												
		Incidence Rate (per 1 million population)	Total rubella cases[2]	Total rubella cases[2]	Classification			Discarded rubella	Imported cases	Report			Surveillance Indicators[6]			
					Lab confirmed	Epi-Link	Clinically compatible[3]			Completeness[4]	Timeliness[4]	Month & year of last report	Laboratory investigation rate[4]	Rate of discarded cases[5]	Origin of infection[4]	Timeliness of investigation[4]
Albania[7]	2 880 917	0.00	0	0	0	0	0	12	-	100%	100%	Jun-20	100%	0.4	-	100%
Andorra	77 142	0.00	0	0	0	0	0	0	-	100%	83%	Jun-20	-	0.0	-	-
Armenia	2 957 731	0.00	0	0	0	0	0	0	-	100%	100%	Jun-20	-	0.0	-	-
Austria	8 955 102	0.00	0	1	0	1	0	-	0	100%	83%	Jun-20	-	-	0%	0%
Azerbaijan	10 047 718	0.20	2	2	2	0	0	1	0	100%	83%	Jun-20	67%	0.0	0%	100%
Belarus[7]	9 452 411	0.00	0	1	1	0	0	96	-	100%	100%	Jun-20	100%	1.0	0%	0%
Belgium[8]	11 539 328	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bosnia and Herzegovina	3 301 000	0.91	3	0	0	0	0	-	-	100%	67%	Jun-20	-	-	-	-
Bulgaria	7 000 119	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Croatia	4 130 304	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Cyprus	1 198 575	0.00	0	1	1	0	0	-	0	100%	83%	Jun-20	100%	-	0%	0%
Czech Republic	10 689 209	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Denmark[8]	5 771 876	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Estonia	1 325 648	0.00	0	0	0	0	0	3	-	100%	100%	Jun-20	100%	0.2	-	100%
Finland	5 532 156	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
France[8]	65 129 728	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Georgia	3 996 765	2.25	9	0	0	0	0	8	-	100%	83%	Jun-20	75%	0.2	-	88%
Germany	83 517 045	0.68	57	13	4	0	9	-	0	100%	100%	Jun-20	31%	-	54%	0%
Greece	10 473 455	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Hungary	9 684 679	0.00	0	0	0	0	0	0	-	100%	100%	Jun-20	-	0.0	-	-
Iceland	339 031	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Ireland	4 882 495	0.20	1	2	1	0	1	-	1	100%	100%	Jun-20	50%	-	50%	100%
Israel	8 519 377	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Italy	60 550 075	0.40	24	12	3	0	9	4	0	100%	100%	Jun-20	81%	0.0	17%	0%
Kazakhstan	18 551 427	0.27	5	0	0	0	0	-	-	100%	33%	Jun-20	-	-	-	-
Kyrgyzstan[7]	6 415 850	0.62	4	0	0	0	0	143	-	100%	100%	Jun-20	22%	2.2	-	94%
Latvia	1 906 743	1.05	2	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Lithuania	2 759 627	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Luxembourg	615 729	0.00	0	0	0	0	0	1	-	100%	100%	Jun-20	100%	0.2	-	100%
Malta	440 372	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Monaco	38 964	0.00	0	0	0	0	0	0	-	100%	83%	Jun-20	-	0.0	-	-
Montenegro	627 987	0.00	0	-	-	-	-	-	-	0%	0%	Dec-19	-	-	-	-
Netherlands	17 097 130	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
North Macedonia	2 083 459	0.00	0	0	0	0	0	-	-	17%	17%	Jan-20	-	-	-	-
Norway	5 378 857	0.00	0	1	1	0	0	-	1	100%	100%	Jun-20	100%	-	100%	100%
Poland	37 887 768	7.71	292	74	0	0	74	-	0	100%	100%	Jun-20	-	-	-	-
Portugal	10 226 187	0.20	2	1	0	0	1	3	0	100%	100%	Jun-20	50%	0.0	100%	100%
Republic of Moldova	4 043 263	0.00	0	0	0	0	0	1	-	100%	100%	Jun-20	100%	-	-	100%
Romania	19 364 557	0.21	4	3	1	0	2	-	0	83%	83%	May-20	33%	-	100%	33%
Russian Federation	145 872 256	0.23	34	3	3	0	0	0	0	100%	100%	Jun-20	100%	0.0	100%	100%
San Marino	33 860	0.00	0	0	0	0	0	0	-	100%	50%	Jun-20	-	0.0	-	-
Serbia	8 772 235	-	-	-	-	-	-	-	-	-	-	No report	-	-	-	-
Slovakia	5 457 013	0.00	0	0	0	0	0	0	-	100%	100%	Jun-20	-	0.0	-	-
Slovenia	2 078 654	0.00	0	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Spain	46 736 776	0.09	4	0	0	0	0	4	-	100%	100%	Jun-20	75%	0.0	-	50%
Sweden	10 036 379	0.00	0	0	0	0	0	0	-	100%	83%	Jun-20	-	0.0	-	-
Switzerland	8 591 365	0.12	1	0	0	0	0	6	-	100%	100%	Jun-20	100%	0.1	-	0%
Tajikistan	9 321 018	0.00	0	0	0	0	0	-	-	100%	83%	Jun-20	100%	0.1	-	100%
Turkey[7]	83 429 615	0.58	48	12	12	0	0	1239	0	100%	100%	Jun-20	100%	1.5	67%	98%
Turkmenistan[7]	5 942 089	0.00	0	0	0	0	0	46	-	100%	100%	Jun-20	100%	0.8	-	100%
Ukraine	43 993 638	3.23	142	24	3	0	21	-	0	100%	100%	Jun-20	13%	-	92%	100%
United Kingdom	67 530 172	0.04	3	0	0	0	0	-	-	100%	100%	Jun-20	-	-	-	-
Uzbekistan	32 981 716	0.00	0	0	0	0	0	0	-	100%	83%	Jun-20	-	0.0	-	-
Region	930 166 592	0.68	637	150	32	1	117	1573	2	89%	83%		91%	0.3	63%	89%

Data source: Monthly aggregated and case-based data reported by Member States to WHO/Europe directly or via ECDC/TESSy. Member States submitting aggregate data: Bosnia and Herzegovina, Kazakhstan, North Macedonia and Poland.

[1] *Population source:* United Nations, Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2019 Revision.

[2] All confirmed rubella cases regardless of origin.

[3] Unless specified as laboratory confirmed or epi-linked, cases are classified as clinically compatible.

[4] Target (>=80%) not achieving are highlighted in red.

[5] Rate of discarded cases not achieving the target (>=2 discarded cases per 100 000) are highlighted in red. Rate of discarded cases is not calculated for the countries submitting only confirmed rubella cases.

[6] Surveillance indicators can not be calculated for Member States submitting aggregate data.

[7] Country classifies discard cases as "discarded, not measles, not rubella".

[8] Country does not have a comprehensive rubella surveillance system.