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.

The surveillance data presented in this issue were reported by Member States and are incorporated in the centralized information system for infectious diseases (CISID).[1] Tabulated surveillance data by country for the first half of 2017 (as of 2 August 2017) are annexed to this issue.

The analyses of these data are performed on cases with disease onset dates during the first half of 2017. Where these dates were unavailable, cases with the date of notification reported during this period were included. The numbers of cases in a specified time period may differ from reports produced by national or partner agencies if different dates are used. Percentages in this report were rounded to the nearest whole number.

Measles in the WHO European Region January-June 2017

Incidence – notifications and laboratory data

For the first half of 2017, 9386 measles cases were reported in 40 countries of the WHO European Region among 50 (94%) countries that submitted measles data (including zero reporting) (Table 1 in annex). Three countries, namely Monaco, San Marino and Turkmenistan, did not submit reports.

Of the total cases, 95% (n=8875) were reported by 10 countries: Italy (n=3660; 39%), Romania (1844; 20%), Ukraine (943; 10%), Germany (796; 8%), Tajikistan (550; 6%), France (352; 4%), Belgium (297; 3%), Bulgaria (161; 2%), Spain (141; 2%) and the Czech Republic (131; 1%). The highest incidence per million population for the first half of 2017 was in Romania (96) followed by Tajikistan (62) and Italy (61).

Of the total cases, 5315 (57%) were laboratory confirmed and 2260 (24%) were epidemiologically linked. The remaining 1181 cases (19%) were classified as clinically compatible.

During the first half of 2017, 975 measles virus sequences were reported to the Measles Nucleotide Surveillance database (MeaNS)[2] by reference laboratories of the WHO European Region (as of 8 August 2017). The genotypes identified in the Region comprised D8 (n=405), B3 (547), H1 (22) and D9 (1).

Overall, the predominant measles virus genotypes reported for the first half of 2017 included several B3 lineages reported by 19 countries. The dominant strain in 14 countries was Dublin.IRL/8.16 (58% of reported B3 sequences). Several measles virus genotype D8 lineages were also reported by 21 countries mostly Osaka.JPN/29.15, (50% of D8 sequences). Genotype H1, which is usually found in Asia, was reported by five countries in the Region.

Age distribution

Of those with known age group (n=9384), 1032 (11%) were under one year of age, 2024 (22%) were 1–4 years of age, 1124 (12%) were 5–9 years of age, 1231 (13%) were 10–19 years of age and 3973 (42%) were 20 years and older (Fig. 1). Fig. 2 shows the age distribution of reported measles cases in the top six countries reporting cases: Italy, Romania, Ukraine, Germany, Tajikistan and France by proportion and age-specific incidence. The classification of cases by age group for the two countries that reported 59% of cases
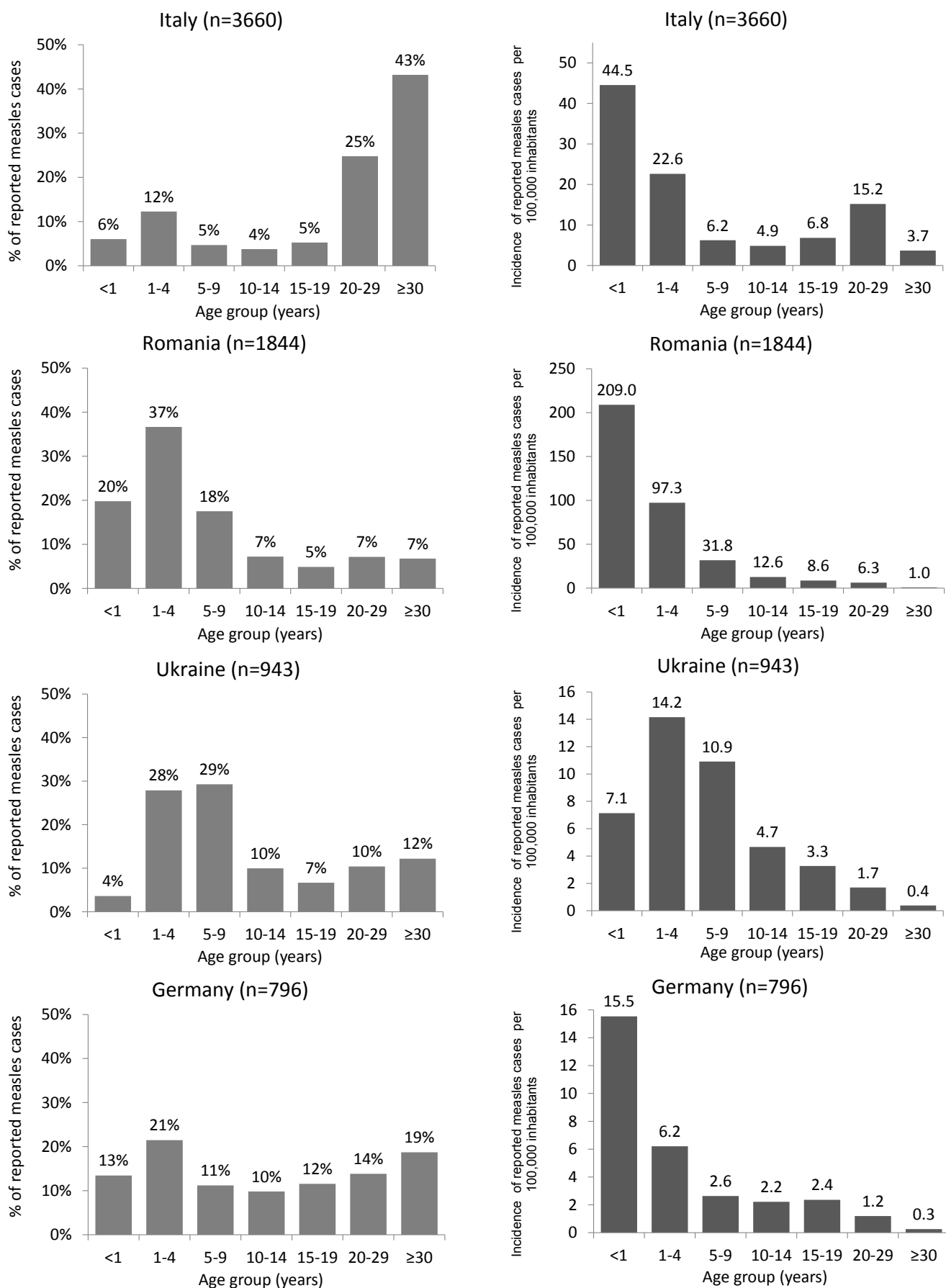
Fig. 1. Age distribution of measles cases by proportion in the WHO European Region, January–June 2017 (n=9384)
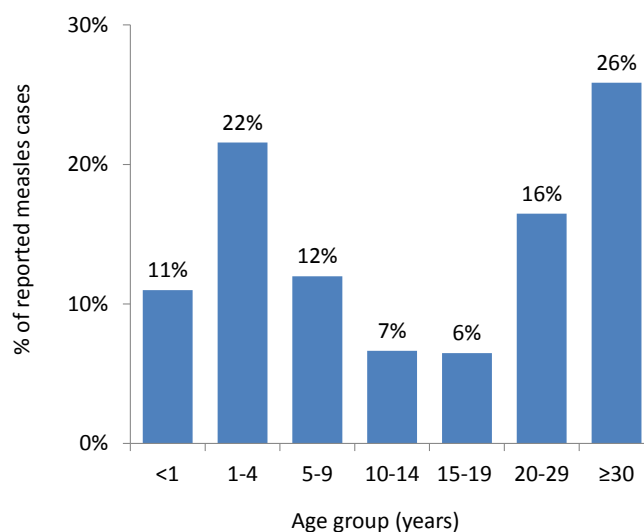
N.B. Discarded cases are not included.

Fig. 2. Age distribution of measles cases by proportion (left) and incidence per 100 000 inhabitants (right) in the four countries that reported 77% of cases with data on age in the WHO European Region, January–June 2017 (n=7243)

(Italy and Romania) is presented in Fig 3.

Vaccination status

Vaccination status was known in 7840 cases (84%), of which 6541 cases (83%) were unvaccinated and 1299 cases (17%) were reportedly vaccinated with at least one measles-containing vaccine dose. Of the 6541 unvaccinated cases: 884 cases (14%) were <1 year old, 1498 cases (23%) were 1–4 years old, 679 cases (10%) were 5–9 years old, 751 cases (11%) were 10–19 years old and 2729 cases (42%) were ≥20 years old.

Measles-related deaths

During this period 13 measles-related deaths were reported in six countries: six in Romania, two in Italy and one each in Bulgaria, Germany, Portugal, Spain and Switzerland. With the exception of two fatal cases, none had received a measles vaccine. The fatal cases in Romania and Bulgaria were infants and young children (<3 years old), those in Italy were older children 6 and 9 years old, and those in Germany, Portugal, Spain and Switzerland were 37, 17, 76 and 25 years old, respectively.

Hospitalization

Data on hospitalization status was available for 47% (n=4389) of all reported measles cases. Of these, 3064 were hospitalized, amounting to 70% of all cases with known hospitalization status. Of all the hospitalized cases, most were reported in Romania (n=1528; 50%) and Tajikistan (490; 16%).

Imported cases

Importation status was known for 78% (n=7310) of cases. Of these, 194 were reported as imported cases, amounting to 2.7% of cases with a known importation status. Of all the imported cases, most (21%; n=136) were reported by Germany (40), Italy (31), United Kingdom (n=25), France (23) and Spain (17).

Rubella in the WHO European Region January-June 2017

Incidence – notifications and laboratory data

For the first half of 2017, 388 rubella cases were reported in 16 countries of the WHO European Region among 45 (85%) countries submitting rubella data (including zero reporting) (Table 2 in annex). Most cases were reported by Poland (n=253; 65%), followed by Italy (46; 12%), Germany (42; 11%) and Austria (26; 7%). For the first half of 2017, Poland also had the highest incidence per million population (6.6) however, no cases were laboratory confirmed.

Of the total, 71 (18%) cases were laboratory confirmed, most of which were reported by Italy (n=24), Austria (23) and Germany (10). No rubella virus sequences were reported to the Rubella Nucleotide Surveillance database (RubeNS).[3]

Age distribution

The age group was known in all cases: 38 cases (10%) were <1 years old, 201 cases (52%) were 1–9 years old, 48 cases (12%) were 10–19 years old and 101 cases (26%) were ≥20 years old (Fig. 4). The classification of cases by age group for the four countries that reported 95% of cases in the Region is presented in Fig 5.

Vaccination status

Vaccination status was known in 334 of cases (86%). Of the 170 (51%) unvaccinated cases, 36 cases (21%)

Fig. 3. Classification of measles cases by age group in Italy and Romania that together reported 59% of cases with data on age in the WHO European Region, January–June 2017 (n=5504)
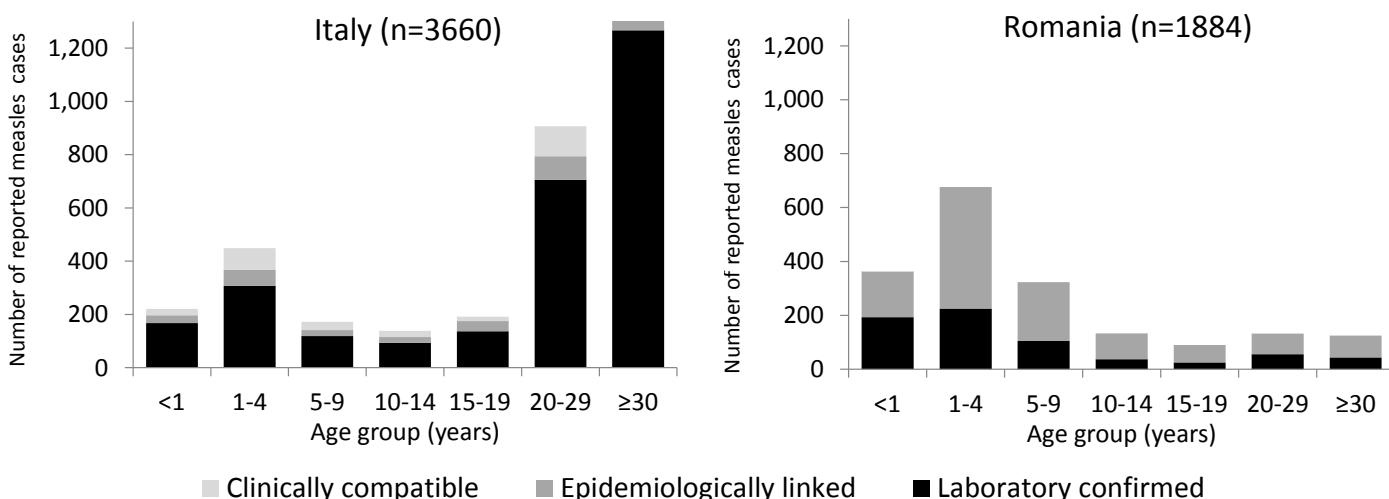
Fig. 4. Age distribution of rubella cases in the WHO European Region, January–June 2017 (n=388)
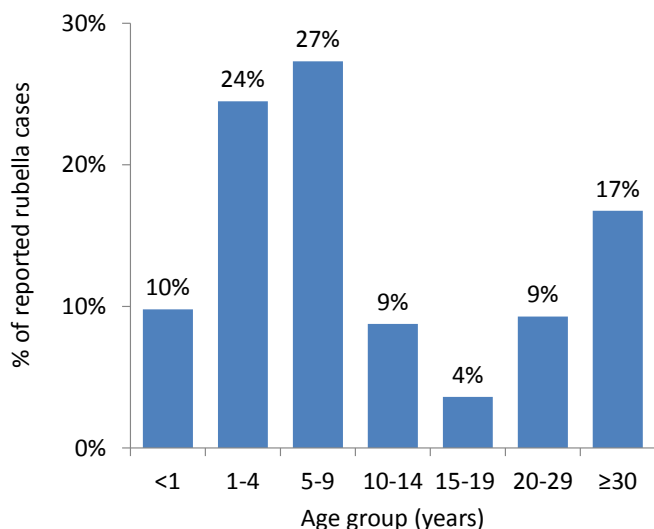
N.B. Discarded cases are not included.

were <1 year old, 30 cases (18%) were 1–4 years old, 26 cases (15%) were 5–9 years old, 14 cases (8%) were 10–14 years old and 64 cases (38%) were ≥15 years old. The remaining 164 cases (49%) were reportedly vaccinated with at least one rubella-containing vaccine dose. Of these, 142 cases were reported by Poland.

Imported cases

Importation status was known in 24% (n=95) of rubella cases. Of these, 3 cases were reported as imported, amounting to 3.2% of cases with a known importation status. The imported cases were reported from Austria (n=1), Czech Republic (1) and the United Kingdom (1).

Comments
Measles and rubella in the WHO European Region

With 9385, the total number of measles cases reported in the European Region for the first half of 2017 exceeded the number reported for the entire year of 2016 (n=5194). This is predominantly due to continued measles transmission in Italy and Romania, but also significant increases in reported cases in a number of countries including Belgium, Bulgaria, Czech Republic, France, Germany, Spain, Tajikistan and Ukraine.

Fig. 5. Classification of rubella cases by age group in the four countries that reported 95% of cases with data on age in the WHO European Region, January–June 2017 (n=367)
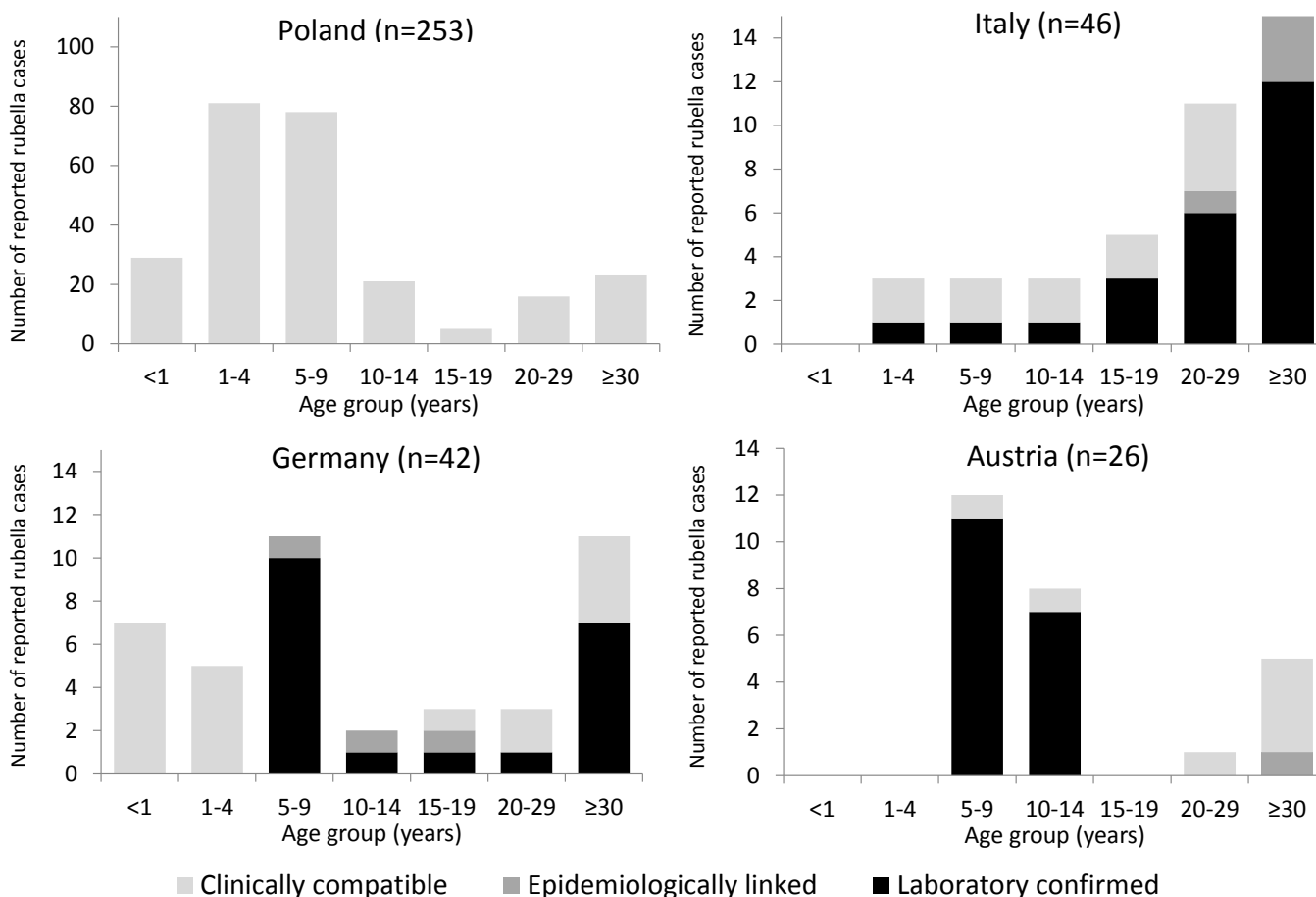
The total for 2017 is expected to become much higher still, due to delayed reporting of cases and continued outbreaks. Countries with large outbreaks often face challenges in timely collection of subnational surveillance data and thus, the submission of consolidated national data to international agencies is delayed. In addition, outbreaks in Italy and Romania are continuing. Updates on the number of cases in Italy and Romania are available online on their respective health authorities' website. [4,5]

The number of reported rubella cases in the Region for the first half of 2017 was 58% lower than that reported for the same period in 2016 (n=913). This is primarily due to a 67% decline in reported rubella cases in Poland, from 768 cases for the first half of 2016 to 253 cases for the same period in 2017. All of the reported cases in Poland in 2017 were classified as clinically compatible.

At a regional level, the proportion of measles cases was highest in adults 20 years and older (42%) demonstrating immunity gaps in this population group in some countries. More efforts are needed to identify susceptible individuals and systematically address their vaccination needs.

On the other hand, un- and/or under-vaccinated cases among children 1–9 years of age (34%) reflect sub-optimal routine immunization coverage rates in recent years. All eligible children in this age group should have received at least one vaccine dose according to national immunization programme schedules. Immunization coverage of at least 95% with two doses of a measles-containing vaccine needs to be reached and maintained at national level and in all districts through the routine immunization programme.

Every country needs to actively identify reasons for the presence of un- and/or under-vaccinated individuals in the community and devise tailored strategies to address the identified challenges in their immunization programmes. Attaining and maintaining high population immunity is crucial to stop ongoing measles and rubella transmission and prevent outbreaks in the Region.

References

1. World Health Organization. Centralized Information system for infectious diseases (CISID). Copenhagen. Regional Office for Europe. http://data.euro.who.int/CISID/

2. Measles Nucleotide Surveillance database (MeaNS). www.who-measles.org

3. Rubella Nucleotide Surveillance database (RubeNS). www.who-rubella.org

4. Ministry of Health. National Institute of Health. *Morbillo in Italia*. Weekly bulletin. http://www.epicentro.iss.it/problemi/morbillo/Infografica2017.asp

5. National Institute of Public Health, Romania. *Rujeola*, weekly updates. (in Romanian). http://cnscbt.ro/index.php/informari-saptamanale/rujeola-1

Annex

Table 1. Measles cases: classification, reporting and surveillance performance, January–June 2017 (as of 1 August 2017)

| Country | Total Population in 2017[1] | 2016 (as of 01 August 2017) | | 2017 | | | | | | | | | | | | | |
		Incidence Rate (per 1 million population)[2]	Total measles cases[3]	Annualized Incidence Rate (per 1 million population)[2]	Total measles cases[3]	Lab confirmed	Epi-Link	Clinically compatible[4]	Discarded Measles	Imported cases	Complete-ness	Timeliness	Month & year of last report	Laboratory investigation rate	Rate of discarded cases	Origin of infection	Timeliness of investigation
Albania	2 911 428	0.0	0	0.0	0	0	0	0	0	0	100%	83%	Jun-17	-	0.00	-	-
Andorra	68 727	0.0	0	0.0	0	0	0	0	0	0	83%	50%	May-17	-	0.00	-	-
Armenia	3 031 670	0.7	2	0.0	0	0	0	0	34	0	83%	83%	May-17	100%	1.12	100%	97%
Austria	8 592 400	1.6	28	4.1	78	67	10	1	45	8	100%	100%	Jun-17	69%	0.52	93%	5%
Azerbaijan	9 973 697	0.0	0	0.1	2	0	0	2	45	0	100%	100%	Jun-17	94%	0.45	62%	57%
Belarus	9 458 535	1.6	29	0.0	1	1	0	0	145	1	100%	100%	Jun-17	100%	1.53	1%	1%
Belgium	11 443 830	0.4	5	13.0	297	0	0	297	0	0	100%	67%	Jun-17	0%	0.00	0	0
Bosnia and Herzegovina	3 792 759	11.9	45	2.1	16	0	0	16	0	0	83%	67%	Jun-17	0%	0.00	0	0
Bulgaria	7 045 259	0.1	1	11.4	161	85	65	11	3	0	83%	83%	Jun-17	97%	0.04	83%	100%
Croatia	4 209 815	0.0	4	0.8	7	7	0	0	1	0	100%	83%	Jun-17	100%	0.02	75%	0
Cyprus	1 187 575	0.0	0	0.4	3	3	0	0	0	2	100%	100%	Jun-17	100%	0.00	100%	0
Czech Republic	10 555 130	0.2	7	6.1	131	123	6	2	1	2	100%	100%	Jun-17	100%	0.01	99%	88%
Denmark	5 711 837	0.0	3	0.0	1	1	0	0	0	1	100%	100%	Jun-17	100%	0.00	100%	0
Estonia	1 305 755	0.0	2	0.0	1	1	0	0	50	1	100%	100%	Jun-17	100%	3.83	2%	100%
Finland	5 541 274	0.5	5	0.0	1	1	0	0	0	1	100%	100%	Jun-17	100%	0.00	100%	0
France	64 938 716	1.0	79	2.5	352	229	52	71	0	23	100%	100%	Jun-17	91%	0.00	90%	0%
Georgia	3 972 532	3.5	14	0.4	3	0	0	3	24	0	100%	83%	Jun-17	85%	0.60	100%	100%
Germany	80 636 124	3.4	328	4.7	796	518	242	36	0	40	100%	100%	Jun-17	92%	0.00	87%	0
Greece	10 892 931	0.0	0	0.0	4	4	0	0	0	3	100%	100%	Jun-17	100%	0.00	75%	0
Hungary	9 787 905	0.0	0	0.7	15	15	0	0	17	1	100%	50%	Jun-17	100%	0.17	63%	97%
Iceland	334 303	0.0	1	1.5	2	2	0	0	0	1	83%	83%	Jun-17	100%	0.00	50%	100%
Ireland	4 749 153	8.4	43	0.7	7	2	1	4	0	0	100%	100%	Jun-17	67%	0.00	57%	57%
Israel	8 323 248	1.0	10	0.4	6	6	0	0	0	0	50%	33%	May-17	0%	0.00	0	0
Italy	59 797 978	13.7	861	30.3	3660	2797	376	487	266	31	83%	83%	Jun-17	88%	0.44	88%	0
Kazakhstan	18 064 470	5.9	106	0.1	2	0	1	1	0	0	83%	67%	Jun-17	0%	0.00	0	0
Kyrgyzstan	6 124 945	0.0	0	0.1	1	1	0	0	96	1	100%	83%	Jun-17	99%	1.57	100%	0
Latvia	1 944 565	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Lithuania	2 830 582	7.8	22	0.0	1	1	0	0	0	1	100%	83%	Jun-17	100%	0.00	100%	0
Luxembourg	584 103	0.0	0	0.9	3	3	0	0	0	2	100%	100%	Jun-17	100%	0.00	67%	100%
Malta	420 521	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Monaco	38 010	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Montenegro	626 250	0.0	0	0.0	0	0	0	0	1	0	100%	67%	Jun-17	100%	0.16	100%	100%
Netherlands	17 032 845	0.1	6	0.1	6	5	1	0	1	2	100%	100%	Jun-17	100%	0.01	100%	0
Norway	5 330 800	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Poland	38 563 573	2.4	138	0.2	21	17	1	3	0	4	100%	100%	Jun-17	85%	0.00	105%	100%
Portugal	10 264 797	0.0	0	1.6	34	28	0	6	130	2	100%	83%	Jun-17	87%	1.27	100%	70%
Republic of Moldova	4 054 640	0.0	0	0.0	0	0	0	0	0	0	100%	67%	Jun-17	-	0.00	-	-
Romania	19 237 513	126.2	2432	47.7	1844	685	1156	3	0	7	100%	100%	Jun-17	100%	0.00	123%	100%
Russian Federation	143 375 006	1.1	178	0.3	79	77	1	1	1250	7	100%	67%	Jun-17	100%	0.87	101%	7%
San Marino	32 104	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Serbia	8 776 940	1.6	14	0.4	7	0	0	7	0	0	100%	83%	Jun-17	0%	0.00	0	0
Slovakia	5 432 157	0.0	0	0.0	2	2	0	0	4	2	100%	100%	Jun-17	67%	0.07	100%	67%
Slovenia	2 071 252	0.0	1	1.2	6	6	0	0	0	1	100%	100%	Jun-17	100%	0.00	100%	100%
Spain	46 070 146	0.6	38	1.3	141	135	4	2	95	17	100%	83%	Jun-17	98%	0.21	46%	78%
Sweden	9 920 624	0.0	3	0.9	24	24	0	0	9	6	100%	100%	Jun-17	100%	0.09	100%	0
Switzerland	8 454 083	6.3	66	3.8	67	52	12	3	54	3	100%	100%	Jun-17	96%	0.64	51%	61%
Tajikistan	8 858 115	5.9	52	5.6	550	222	328	0	122	451	83%	83%	May-17	100%	1.38	78%	100%
The former Yugoslav Republic of Macedonia	2 083 308	0.0	0	0.0	0	0	0	0	0	0	100%	67%	Jun-17	-	0.00	-	-
Turkey	80 417 526	0.1	9	0.1	19	14	4	1	0	0	100%	0%	Jun-17	93%	0.00	0	0
Turkmenistan	5 502 586	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Ukraine	44 405 055	2.0	90	10.6	943	89	0	854	0	0	100%	100%	Jun-17	0%	0.00	0	0
United Kingdom	65 511 098	8.1	571	0.5	92	92	0	0	0	25	100%	100%	Jun-17	100%	0.00	82%	1%
Uzbekistan	30 690 914	0.0	1	0.0	0	0	0	0	36	0	100%	33%	Jun-17	100%	0.12	100%	0
Total/Averages	**914 981 109**	**5.3**	**5194**	**4.8**	**9386**	**5315**	**2260**	**1811**	**2429**	**645**	**90.9%**	**79.6%**		**82.4%**	**0.265**	**82.5%**	**33.0%**

Data source: Monthly aggregated and case-based data reported by Member States to WHO/Europe or via ECDC/TESSy.
[1] Source: "World Population Prospects: The 2015 Revision", New York, United Nations.
[2] Incidence not meeting the target (<1) and countries not reporting monthly measles data are highlighted in red. The imported measles cases are excluded from the numerator while calculating the incidence rate.
[3] All confirmed measles cases regardless of origin.
[4] Unless specified as laboratory confirmed or epi-linked, cases are classified as clinically compatible.
Member States submitting aggregate data: Bosnia and Herzegovina, Kazakhstan, Republic of Moldova, San Marino, Serbia, the former Yugoslav Republic of Macedonia, Turkmenistan, Ukraine.

Table 2. Rubella cases: classification, reporting and surveillance performance, January–June 2017 (as of 1 August 2017)

Country	Total Population in 2017 [1]	2016 (as of 01 August 2017)		2017													
		Incidence Rate (per 1 million population) [2]	Total rubella cases [3]	Annualized Incidence Rate (per 1 million population) [2]	Total rubella cases [3]	Classification			Discarded Rubella	Imported cases	Reporting			Surveillance Indicators			
						Lab confirmed	Epi-Link	Clinically compatible [4]			Complete-ness	Timeliness	Month of last report	Laboratory investigation rate	Rate of discarded cases	Origin of infection	Timeliness of investigation
Albania	2 911 428	0.0	0	0.0	0	0	0	0	0	0	100%	83%	Jun-17	-	0.00	-	-
Andorra	68 727	0.0	0	0.0	0	0	0	0	0	0	83%	50%	May-17	-	0.00	-	-
Armenia	3 031 670	0.0	0	0.0	0	0	0	0	6	0	83%	83%	May-17	100%	0.20	100%	100%
Austria	8 592 400	0.3	3	1.5	26	23	1	2	0	1	100%	100%	Jun-17	100%	0.00	108%	8%
Azerbaijan	9 973 697	0.0	0	0.1	1	0	0	1	28	0	100%	100%	Jun-17	97%	0.28	0%	59%
Belarus	9 458 535	-	-	0.0	0	0	0	0	145	0	100%	100%	Jun-17	0%	1.53	0%	0%
Belgium[5]	11 443 830	-	-	-	-	-	-	-	-	-	-	-	See footnote	-	-	-	-
Bosnia and Herzegovina	3 792 759	0.0	0	0.0	0	0	0	0	0	0	67%	50%	Jun-17	-	0.00	-	-
Bulgaria	7 045 259	0.4	3	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Croatia	4 209 815	0.0	2	0.0	0	0	0	0	0	0	100%	50%	Jun-17	-	0.00	-	-
Cyprus	1 187 575	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Czech Republic	10 555 130	0.0	0	0.0	2	2	0	0	0	1	100%	100%	Jun-17	100%	0.00	50%	0%
Denmark[5]	5 711 837	-	-	-	-	-	-	-	-	-	-	-	See footnote	-	-	-	-
Estonia	1 305 755	0.0	0	0.0	0	0	0	0	21	0	100%	100%	Jun-17	95%	1.61	62%	100%
Finland	5 541 274	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
France[5]	64 938 716	-	-	-	-	-	-	-	-	-	-	-	See footnote	-	-	-	-
Georgia	3 972 532	3.0	12	0.4	3	1	0	2	36	0	100%	83%	Jun-17	100%	0.91	100%	97%
Germany	80 636 124	1.2	96	0.3	42	10	3	29	0	0	100%	100%	Jun-17	26%	0.00	43%	0%
Greece	10 892 931	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Hungary	9 787 905	0.0	0	0.0	0	0	0	0	0	0	67%	33%	Jun-17	-	0.00	-	-
Iceland	334 303	0.0	0	0.0	0	0	0	0	0	0	100%	83%	Jun-17	-	0.00	-	-
Ireland	4 749 153	0.2	1	0.1	1	0	0	1	0	0	100%	100%	Jun-17	0%	0.00	0%	0%
Israel	8 323 248	0.1	1	0.0	0	0	0	0	0	0	50%	33%	May-17	-	0.00	-	-
Italy	59 797 978	0.5	31	0.4	46	24	4	18	23	0	100%	83%	Jun-17	88%	0.04	70%	0%
Kazakhstan	18 064 470	0.2	4	0.0	0	0	0	0	0	0	83%	67%	Jun-17	-	0.00	-	-
Kyrgyzstan	6 124 945	0.3	2	0.2	2	2	0	0	0	0	100%	83%	Jun-17	100%	0.00	100%	0%
Latvia	1 944 565	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Lithuania	2 830 582	0.0	0	0.0	0	0	0	0	0	0	100%	83%	Jun-17	-	0.00	-	-
Luxembourg	584 103	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Malta	420 521	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Monaco	38 010	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Montenegro	626 250	0.0	0	0.0	0	0	0	0	0	0	67%	33%	Apr-17	-	0.00	-	-
Netherlands	17 032 845	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Norway	5 330 800	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Poland	38 563 573	29.7	1144	3.3	253	0	0	253	0	0	100%	100%	Jun-17	0%	0.00	0%	0%
Portugal	10 264 797	0.8	8	0.0	1	0	0	1	2	0	100%	67%	Jun-17	67%	0.02	100%	100%
Republic of Moldova	4 054 640	0.0	0	0.0	0	0	0	0	0	0	100%	67%	Jun-17	-	0.00	-	-
Romania	19 237 513	0.7	13	0.1	4	3	0	1	0	0	67%	50%	Jun-17	75%	0.00	100%	100%
Russian Federation	143 375 006	0.2	37	0.0	3	3	0	0	0	0	100%	67%	Jun-17	100%	0.00	100%	0%
San Marino	32 104	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Serbia	8 776 940	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Slovakia	5 432 157	0.0	0	0.1	1	0	0	1	1	0	100%	100%	Jun-17	50%	0.02	50%	50%
Slovenia	2 071 252	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Spain	46 070 146	0.0	2	0.0	0	0	0	0	11	0	100%	100%	Jun-17	100%	0.02	100%	100%
Sweden	9 920 624	0.0	0	0.0	0	0	0	0	0	0	100%	100%	Jun-17	-	0.00	-	-
Switzerland	8 454 083	0.0	0	0.0	0	0	0	0	11	0	100%	100%	Jun-17	82%	0.13	0%	27%
Tajikistan	8 858 115	0.1	1	0.1	1	1	0	0	7	0	67%	67%	May-17	100%	0.08	100%	100%
The former Yugoslav Republic of Macedonia	2 083 308	0.0	0	0.0	0	0	0	0	0	0	100%	67%	Jun-17	-	0.00	-	-
Turkey	80 417 526	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Turkmenistan	5 502 586	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
Ukraine	44 405 055	-	-	-	-	-	-	-	-	-	-	-	No Report	-	-	-	-
United Kingdom	65 511 098	0.0	2	0.0	1	1	0	0	0	1	100%	100%	Jun-17	100%	0.00	100%	100%
Uzbekistan	30 690 914	0.0	0	0.0	1	1	0	0	0	0	100%	33%	Jun-17	100%	0.00	100%	0%
Total/Averages	914 981 109	1.5	1362	0.2	388	71	8	309	291	3	79.2%	69.5%		34.1%	0.032	27.5%	16.9%

Data source: Monthly aggregated and case-based data reported by Member States to WHO/Europe or via ECDC/TESSy.

[1] *Source:* World Population Prospects: The 2015 Revision", New York, United Nations.

[2] Incidence not meeting the target (<1) and countries not reporting monthly rubella data are highlighted in red. The imported rubella cases are excluded from the numerator while calculating the incidence rate.

[3] All confirmed rubella cases regardless of origin.

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

[5] Belgium, Denmark, and France do not have comprehensive rubella surveillance systems.

Member States submitting aggregate data: Bosnia and Herzegovina, Kazakhstan, Republic of Moldova, San Marino, Serbia, the former Yugoslav Republic of Macedonia, Turkmenistan, Ukraine.

Fig 1. Distribution of named strains of D8 measles genotype in the WHO European Region by week of sample collection, January–June 2017 (data as of 8 August 2017)
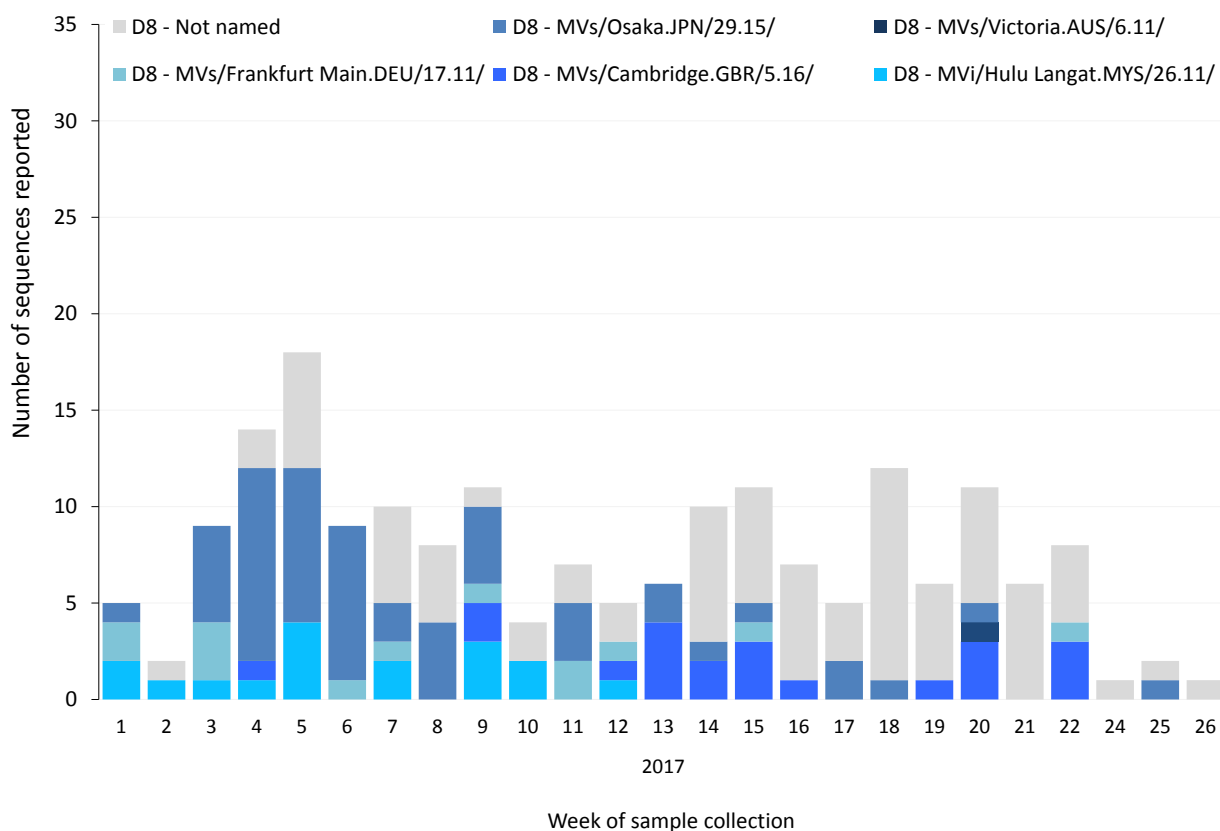

Fig 2. Distribution of named strains of B3 measles genotype in the WHO European Region by week of sample collection, January–June 2017 (data as of 8 August 2017)