

WHO Epidemiological Brief

A monthly publication on vaccine-preventable diseases and immunization data and analysis



Highlighting in the WHO European Region:

- * **measles outbreaks**
- * **importation of wild poliovirus and response**

Summary

Measles outbreaks continue

By the end of April 2011, the Region had reported more than 11 000 confirmed cases of measles. Over 75% of these cases are not immunized against measles. While western Europe is particularly affected by outbreaks, it is clear that the problem of measles outbreaks is not confined to any specific country or subregion.

Response to importation of wild poliovirus

Genetic analysis of the virus that caused the 2010 polio outbreak in Tajikistan and neighbouring countries has shed light on the possible origin and date of introduction, namely an importation of WPV1 of a South Asia (SOAS) genotype, which most likely occurred in late 2009 or early 2010. As part of the continued response to the outbreak, seven Member States have synchronized their supplementary immunization activities (SIAs). These campaigns have resulted in 15 rounds of polio immunization (mOPV and tOPV) and targeted more than 18 million children.

Note: Pages 5– 8 contain tables showing surveillance data by Member State for polio, measles and rubella.

Measles outbreaks in the WHO European Region

Summary of data and analysis

By the end of April 2011, 35 Member States had reported 11 146 confirmed measles cases to the WHO Regional Office for Europe (see Table 2, page 5), confirming ongoing spread across the Region. Most recently, Germany reported a sharp increase in the number of detected cases and outbreaks in different regions of the country, Romania has confirmed 465 measles cases to date in 2011 and France has re-

ported 7 324 cases in the first four months of 2011. An additional 10 western European countries have reported outbreaks. The WHO Regional Office for Europe has also noted an increase in measles cases in central Asia, particularly Uzbekistan, with 316 confirmed cases reported to date in 2011. There is genetic and epidemiological evidence that outbreaks in Kazakhstan (30 cases), Kyrgyzstan (46 cases) and the Russian Federation (76 cases) are all linked with the ongoing measles outbreak in Uzbekistan, which began in 2010. Clearly, all Member States are at risk of experiencing outbreaks if there are individuals who are not protected against the virus. This is not a problem confined to specific countries or subregions.

The current outbreaks have been caused by a failure to vaccinate, not the failure of measles vaccine. All available information, official and unofficial, confirms that most of the reported cases were not immunized against measles; of the 11 146 cases reported, only 1.5% (171 people) had received two doses of measles vaccine, while 3.9% were vaccinated with one dose and 28.5% were not vaccinated. For 66.1%, data on vaccination status are not available to WHO/Europe at this time. The age distribution of the confirmed cases shows that the failure to vaccinate with two doses is not only among recent birth cohorts but also in the 1991-1996 birth cohorts, as exemplified by the increased incidence in this age cohort. According to WHO, a person immunized with two doses of measles containing vaccine is considered protected – immune to measles (*Measles vaccines: WHO Position Paper; WER No 35, 28 Aug 2009; 84: 349-60*).

The predominant genotype currently circulating in the European Region is D4 (France, UK, Switzerland, Germany, Belgium, The Netherlands and Denmark). Of the 71 national and subnational measles laboratories in the WHO European laboratory network, laboratories in 32 Member States have reported laboratory positive measles cases. Thirteen countries have not

detected measles this year, while three countries have not reported any data in 2011.

During 1 January – 20 May 2011, a total of 118 cases were reported in the US (from 23 states and New York City). Of the 118 cases, 47 (40%) resulted in hospitalization and 46 were imported cases. Most of these were among persons who acquired the disease in the WHO European Region (20) or South-East Asia Region (20). Of these 46 imported cases, 34 (74%) occurred in U.S. residents travelling abroad. Of the total 118 cases, 105 (89%) were import-associated (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6020a7.htm?s_cid=mm6020a7_w; *Morbidity and Mortality Weekly Report* 666 MMWR / May 27, 2011 / Vol. 60 / No. 20, US CDC).

Detection Rate: an indicator for monitoring measles surveillance performance

At the national level, the detection rate of at least two discarded measles cases per 100 000 population per year has been set as a minimum target by WHO.

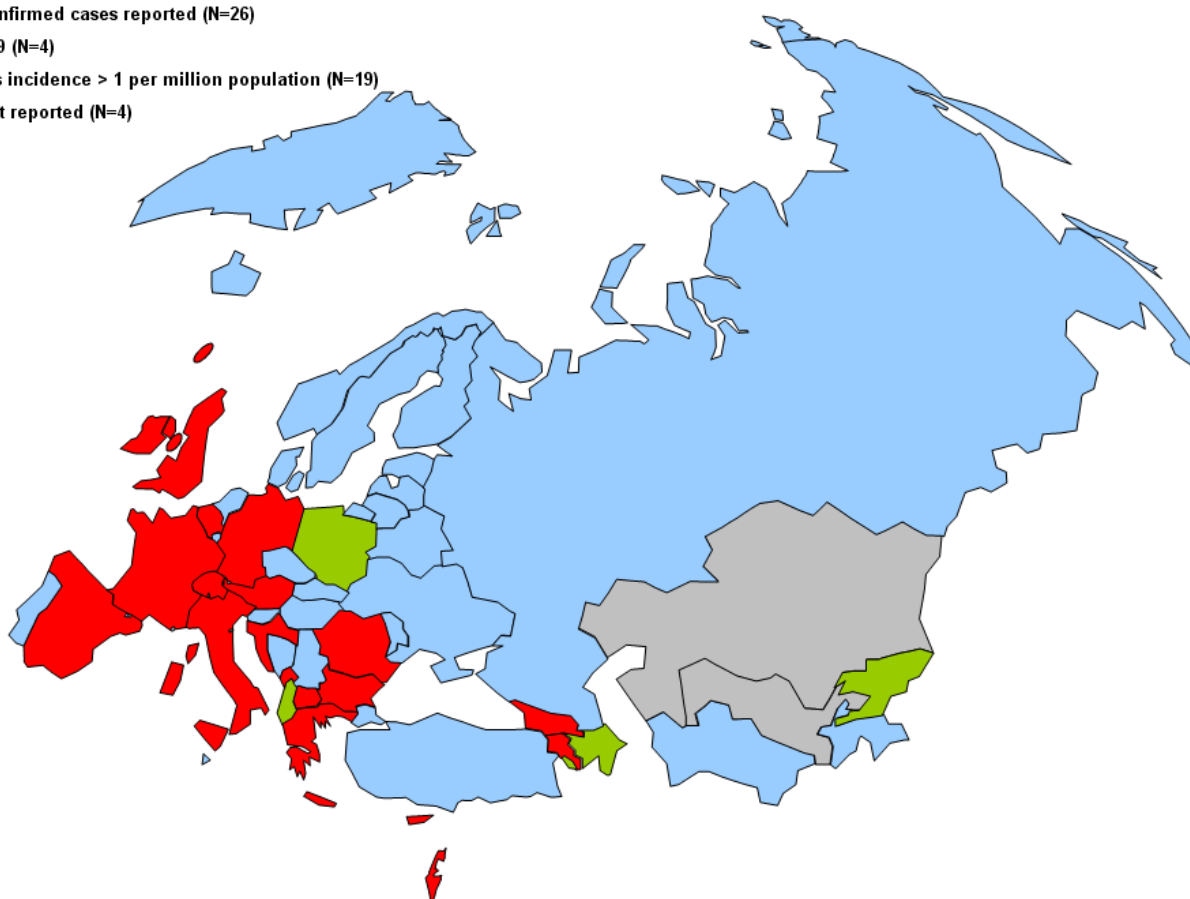
These discarded measles cases come from clinically suspected measles cases that have been investigated and discarded as non-measles using: a) laboratory testing in a proficient laboratory; or b) epidemiological linkage to another laboratory confirmed case of another communicable disease. This rate is an important indicator, among others, to measure the sensitivity and performance of the surveillance system (http://www.euro.who.int/data/assets/pdf_file/0018/79020/E93035.pdf; *Monitoring Progress Towards Measles Elimination, WER, No 49; 3 Dec 2010, 85: 490-495.*)

For the period January – December 2010, 25 countries in the European Region are either not collecting data on all clinically suspected cases or did not report these data to the Regional Office. Therefore, the calculation of detection rates for these countries is not possible. The detection rate can be calculated for only four Member States (Albania, Azerbaijan, Kyrgyzstan and Poland) with measles incidence less

Figure 1. Status of Detection Rate in the WHO European Region, 2010

Status of Detection Rate Indicator

- Only confirmed cases reported (N=26)
- 0.01-0.99 (N=4)
- Measles incidence > 1 per million population (N=19)
- Data not reported (N=4)



than 1 per million population; however none meet the target of at least two discarded measles cases per 100 000 population in 2010.

The WHO European Regional Office will continue to work with Member States to improve this indicator and to monitor changes in the measles detection rate in the Region in 2011. It urges Member States, if feasible, to collect all clinically suspected cases from the subnational levels and report to the WHO Regional Office for Europe.

Importation of wild poliovirus and response measures in Europe

In 2010, the WHO European Region experienced its first importation of wild poliovirus since the Region was certified as polio-free in 2002.

On 23 April 2010, the WHO Regional Reference Laboratory in Moscow confirmed **wild poliovirus type 1** (WPV1) in specimens from acute flaccid paralysis (AFP) cases from Tajikistan. The importation resulted in a large-scale outbreak of poliomyelitis in Tajikistan, with 457 laboratory-confirmed cases of wild poliovirus type 1, including 29 deaths, reported in 2010. The outbreak spread to neighbouring countries, as well, and in 2010 the Russian Federation reported 14 lab-confirmed cases of poliomyelitis, Turkmenistan reported 3 cases and Kazakhstan reported 1 case, all due to WPV1 from Tajikistan. The last confirmed case in the Region was reported from the Russian Federation with a date of onset of 25 September 2010.

Genetic analysis of the wild poliovirus type 1 outbreak in 2010

The genetic analysis of viruses from Tajikistan and neighboring countries shed some light on a possible origin of the outbreak. A comparison of genetic sequences presented evidence that the outbreak was a result of a recent importation of WPV1 of a SOAS-genotype, with the closest viruses coming from northern India. Based on the known rates of poliovirus evolution, the virus introduction to Tajikistan most likely occurred in late 2009 or early 2010. There is also molecular evidence that the outbreak was mo-

nophyletic in origin (i.e. caused by a single virus introduction followed by subsequent spread).

All WPV1 identified in the neighbouring countries (Kazakhstan, the Russian Federation and Turkmenistan) were closely related to viruses from the outbreak in Tajikistan. Related viruses were also detected in Uzbek citizens soon after their arrival from Uzbekistan to the Russian Federation. Molecular data were also used to track the virus throughout the outbreak and to determine whether the efforts to curtail its spread were successful. The detailed analysis of genetic distances indicates that the virus was not allowed to evolve and spread any further and that the vaccination campaign efforts achieved their goal.

In 2010, 6 countries implemented 22 rounds of national and subnational supplementary immunization activities (SIA), with over 45 million doses of polio vaccines (mOPV and tOPV) administered.

Synchronized polio supplementary immunization activities in 2011

At the January 2011 meeting of the European Regional Certification Commission for Poliomyelitis Eradication, the WHO Regional Office for Europe discussed with Member States the need to coordinate their supplementary immunization activities (SIAs) to achieve synergy and sustain the momentum for a polio-free Region. Acting on this advice, countries are conducting synchronized SIAs.

As of 30 May 2011, seven Member States have completed SIAs with polio vaccine in 2011. Four countries – Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan – conducted two rounds of nationwide immunization days, each with trivalent oral polio vaccine (tOPV) to boost population immunity against polio; Kazakhstan and the Russian Federation also conducted two rounds of subnational SIAs with monovalent oral polio vaccine (mOPV) and tOPV to halt any possible transmission of wild poliovirus in high risk territories that have most recently detected wild poliovirus.

Table 1. Characteristics and results of synchronized supplementary immunization activities (SIAs) in five central Asian republics, Azerbaijan and the Russian Federation

Country	Round	SIA dates (2011)	Type of campaign (NID / SNID)	Type of vaccine (mOPV, tOPV)	Target population (years)	Estimated target population	Total number of children vaccinated (reported data)	Reported Coverage (%)	Coverage by Independent Monitoring (%)*
Azerbaijan	Round 1	25-30 April	SNID	tOPV	< 6	32,033	31,164	97.3%	100.0%
	Round 2	23-29 May	SNID	tOPV	< 6	32,033	Pending	Pending	Pending
Kazakhstan	Round 1	21-25 February	SNID	mOPV	< 7	411,653	406,922	98.9%	N/A
	Round 2	3-7 May	NID	tOPV	< 15	1,710,321	1,677,825	98.1%	N/A
	Round 3	16-20 May	SNID	mOPV	7-15	390,000	Pending	Pending	N/A
Kyrgyzstan	Round 1	18-23 April	NID	tOPV	< 15	1,690,188	1,605,311	95.0%	96.1%
	Round 2	23-28 May	NID	tOPV	< 15	1,690,188	Pending	Pending	Pending
Tajikistan	Round 1	18-22 April	NID	tOPV	< 5	1,000,294	993,566	99.3%	96.0%
	Round 2	23-27 May	NID	tOPV	< 5	1,000,294	Pending	Pending	Pending
The Russian Federation	Round 1	4-9 April	SNID	tOPV	6m-15yrs	1,394,121	1,389,809	99.7%	N/A
	Round 2	3-7 May	SNID	tOPV	6m-15yrs	1,393,975	1,390,176	99.7%	N/A
Turkmenistan	Round 1	25-30 April	NID	tOPV	< 5	604,225	598,437	99.0%	99.4%
	Round 2	30 May-4 June	NID	tOPV	< 5	604,225	Pending	Pending	Pending
Uzbekistan	Round 1	18-23 April	NID	tOPV	< 5 + 1 province < 15	3,058,796	3,071,031	100.4%	96.1%
	Round 2	23-28 May	NID	tOPV	< 5 + 1 province < 15	3,058,796	Pending	Pending	Pending

*Post-campaign house-to-house independent monitoring results
N/A - not available

In addition, Kazakhstan completed one round of nationwide campaigns with tOPV. Azerbaijan also implemented two rounds of SIAs in three districts bordering Dagestan, the Russian Federation. In total, 15 rounds and more than 18 million children were targeted by these campaigns.

Final results of the first rounds of the SIAs conducted in February–April 2011 are presented in Table 1 (see above).

Official reports confirm high coverage. This was also confirmed by independent monitoring, which was uniformly conducted in Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. Results from the May immunization activities will be presented in the next issue of the WHO Epidemiological Brief (July).

These coordinated supplementary immunization activities should effectively close any remaining immunity gaps and prevent the transmission of wild poliovirus across borders in the future. By preventing these types of incidents, the Region can sustain its polio-free status.

Table 2. Classification of reported suspected measles cases, January—April 2011 (data as of 26 May 2011)

Country	Total Population ¹	Incidence Rate per 1 million population (Jan-Apr)	Total confirmed measles	Classification				Importation ³	Reporting			Surveillance Indicators (Please see page 4 for detail)		
				Lab confirmed	Epi-Link	Clinical ²	Discarded		Completeness	Timeliness	Month of last report	Laboratory investigation rate	detection rate	Source of infection
Albania	3 184 761	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Andorra	67 722	0.0	0	0	0	0	0	0	75%	25%	Mar	-	0.00	-
Armenia	3 099 249	0.0	0	0	0	0	15	0	100%	100%	Apr	100.0%	0.48	100.0%
Austria	8 407 841	2.0	26	9	3	14	0	9	100%	100%	Apr	39.1%	NA	NA
Azerbaijan	9 035 054	0.0	0	0	0	0	6	0	100%	100%	Apr	100.0%	0.07	100.0%
Belarus*	9 541 951	0.0	0	0	0	0	0	0	50%	50%	Apr	-	0.00	-
Belgium	10 741 473	16.3	193	90	60	43	0	18	50%	50%	Apr	72.9%	NA	NA
Bosnia and Herzegovina*	3 752 989	-	-	-	-	-	-	-	-	-	No Report	-	NA	NA
Bulgaria*	7 450 501	17.0	127	123	0	4	0	0	100%	50%	Apr	96.9%	NA	NA
Croatia	4 402 729	0.2	2	1	1	0	0	1	100%	50%	Apr	100.0%	0.00	100.0%
Cyprus	888 534	0.0	0	0	0	0	0	0	100%	100%	Apr	-	0.00	-
Czech Republic	10 442 510	0.3	4	3	0	1	0	1	100%	100%	Apr	75.0%	0.00	100.0%
Denmark	5 491 148	8.7	49	44	5	0	0	1	100%	100%	Apr	100.0%	NA	NA
Estonia	1 338 887	0.7	8	8	0	0	0	7	100%	100%	Apr	100.0%	0.00	100.0%
Finland	5 364 898	0.7	7	7	0	0	0	3	100%	100%	Apr	100.0%	0.00	42.9%
France	62 916 416	116.4	7324	2139	207	4978	56	3	75%	50%	Apr	32.5%	NA	NA
Georgia*	4 184 100	1.9	8	1	0	7	0	0	100%	75%	Apr	12.5%	NA	NA
Germany	81 935 976	3.1	276	187	63	26	1	18	75%	75%	Mar	87.4%	NA	NA
Greece	11 203 121	1.4	17	15	0	2	0	1	100%	100%	Apr	88.2%	NA	NA
Hungary	9 953 518	0.0	2	2	0	0	0	2	100%	100%	Apr	100.0%	0.00	100.0%
Iceland	335 063	0.0	0	0	0	0	0	0	100%	100%	Apr	-	0.00	-
Ireland	4 656 634	6.4	32	18	1	13	3	2	100%	100%	Apr	64.7%	NA	NA
Israel*	7 397 700	0.5	4	2	0	2	0	0	100%	100%	Apr	50.0%	0.00	0.0%
Italy	60 280 504	2.9	174	0	0	174	0	0	50%	25%	Apr	0.0%	NA	NA
Kazakhstan*	15 868 221	1.9	30	24	0	6	0	0	75%	25%	Mar	80.0%	NA	NA
Kyrgyzstan	5 617 475	8.2	46	46	0	0	87	0	25%	25%	Apr	0.0%	NA	NA
Latvia	2 231 358	0.0	0	0	0	0	0	0	25%	25%	Apr	-	0.00	-
Lithuania	3 228 015	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Luxembourg	497 368	0.0	0	0	0	0	0	0	100%	100%	Apr	-	0.00	-
Malta	411 349	4.9	2	2	0	0	0	0	100%	100%	Apr	100.0%	NA	NA
Monaco	37 785	-	-	-	-	-	-	-	-	-	No Report	-	NA	NA
Montenegro*	626 067	6.4	4	4	0	0	0	0	100%	75%	Apr	100.0%	NA	NA
Netherlands	16 710 858	0.4	13	9	4	0	0	6	50%	50%	Mar	100.0%	0.00	92.3%
Norway	4 895 307	4.9	27	27	0	0	0	3	25%	25%	Apr	100.0%	NA	NA
Poland	37 995 500	0.3	10	9	0	1	11	0	100%	75%	Apr	76.2%	0.03	100.0%
Portugal	10 752 590	0.0	1	1	0	0	0	1	75%	75%	Mar	100.0%	0.00	100.0%
Republic of Moldova	3 549 163	0.0	0	0	0	0	0	0	75%	25%	Mar	-	0.00	-
Romania	21 107 516	0.0	0	0	0	0	0	0	25%	0%	Jan	-	0.00	-
Russian Federation	139 872 928	0.4	76	75	1	0	0	22	100%	100%	Apr	100.0%	NA	100.0%
San Marino	29 332	-	-	-	-	-	-	-	-	-	No Report	-	NA	NA
Serbia*	9 855 875	22.4	221	44	0	177	0	0	75%	75%	Mar	19.9%	NA	NA
Slovakia	5 417 394	0.0	1	1	0	0	0	1	100%	100%	Apr	100.0%	0.00	100.0%
Slovenia	2 029 418	0.5	2	2	0	0	0	1	100%	100%	Apr	100.0%	0.00	50.0%
Spain	45 724 660	14.0	659	579	69	11	1	20	100%	100%	Apr	99.7%	NA	NA
Sweden	9 335 463	0.6	14	14	0	0	0	8	100%	100%	Apr	100.0%	0.00	92.9%
Switzerland	7 622 415	49.7	405	281	41	83	61	26	100%	100%	Apr	79.3%	NA	NA
Tajikistan*	7 203 979	-	-	-	-	-	-	-	-	-	No Report	-	NA	NA
The former Yugoslav Republic of Macedonia*	2 044 005	304.8	623	45	217	361	0	0	100%	75%	Apr	11.1%	NA	NA
Turkey	76 582 128	1.1	89	89	0	0	0	5	100%	100%	Apr	100.0%	NA	NA
Turkmenistan	5 243 476	-	-	-	-	-	-	-	-	-	No Report	-	NA	NA
Ukraine*	45 167 108	0.0	2	2	0	0	0	0	100%	100%	Apr	100.0%	0.00	0.0%
United Kingdom	62 230 620	5.2	352	352	0	0	3	28	100%	100%	Apr	100.0%	NA	NA
Uzbekistan*	28 110 756	11.2	316	172	0	144	0	0	100%	25%	Apr	54.4%	NA	NA
Total/Averages	896 071 408	12.2	11146	4427	672	6047	244	187	76.9%	65.6%		43.7%	0.03	22.8%

Data source: Monthly aggregate and case-based data reported by Member States to WHO/Europe and/or EUVAC.NET.

¹ Source: "World Population Prospects: The 2008 Revision", New York, United Nations and updates provided by Member States.

² Cases with missing classification are classified as "Clinical".

³ Imported or import related measles cases included in total measles.

* Member States reporting aggregate measles data in years 2010 and 2011.

Indicators not meeting target and countries not reporting monthly measles data are highlighted in red; NA=Not Applicable; "-" = data not available or can not be calculated due to insufficient denominator

Table 3. Classification of reported suspected rubella cases, January—April 2011 (data as of 26 May 2011)

Country	Total Population ¹	Annualized Incidence Rate per 1 million population	Total confirmed Rubella	Classification				Importation ³	Reporting			Surveillance Indicator (Please see page 4 for detail)		
				Lab confirmed	Epi-Link	Clinical ²	Discarded		Completeness	Timeliness	Month of last report	Laboratory investigation rate	Detection rate	Source of infection
Albania	3 184 761	1.3	4	1	0	3	0	0	100%	50%	Apr	0.0%	-	-
Andorra	67 722	0.0	0	0	0	0	0	0	75%	25%	Mar	-	0.00	-
Armenia	3 099 249	0.0	0	0	0	0	7	0	100%	100%	Mar	100.0%	0.23	128.6%
Austria	8 407 841	0.0	1	0	0	1	0	1	100%	25%	Apr	100.0%	0.00	100.0%
Azerbaijan	9 035 054	0.0	0	0	0	0	4	0	100%	100%	Apr	100.0%	0.04	100.0%
Belarus	9 541 951	0.4	4	4	0	0	0	0	50%	50%	Apr	0.0%	0.00	0.0%
Belgium	10 741 473	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Bosnia and Herzegovina	3 752 989	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Bulgaria	7 450 501	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Croatia	4 402 729	0.0	0	0	0	0	0	0	50%	25%	Apr	-	0.00	-
Cyprus	888 534	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Czech Republic	10 442 510	0.0	0	0	0	0	0	0	75%	25%	Mar	-	0.00	-
Denmark	5 491 148	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Estonia	1 338 887	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Finland	5 364 898	0.0	1	0	0	1	0	1	100%	50%	Apr	100.0%	0.00	100.0%
France	62 916 416	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Georgia	4 184 100	6.0	25	1	0	24	0	0	100%	75%	Apr	0.0%	-	-
Germany	81 935 976	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Greece	11 203 121	0.0	0	0	0	0	0	0	100%	50%	Apr	-	0.00	-
Hungary	9 953 518	0.0	0	0	0	0	0	0	100%	25%	Apr	-	0.00	-
Iceland	335 063	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Ireland	4 656 634	0.0	0	0	0	0	0	0	100%	25%	Apr	-	0.00	-
Israel	7 397 700	0.0	0	0	0	0	0	0	100%	25%	Apr	-	0.00	-
Italy	60 280 504	0.0	0	0	0	0	0	0	25%	0%	Jan	-	0.00	-
Kazakhstan	15 868 221	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Kyrgyzstan	5 617 475	0.2	1	1	0	0	0	0	25%	25%	Apr	0.0%	0.00	0.0%
Latvia	2 231 358	0.0	0	0	0	0	0	0	50%	0%	Mar	-	0.00	-
Lithuania	3 228 015	0.0	0	0	0	0	0	0	100%	50%	Apr	-	0.00	-
Luxembourg	497 368	0.0	0	0	0	0	0	0	100%	25%	Apr	-	0.00	-
Malta	411 349	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Monaco	37 785	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Montenegro	626 067	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Netherlands	16 710 858	0.0	0	0	0	0	0	0	50%	0%	Mar	-	0.00	-
Norway	4 895 307	0.0	0	0	0	0	0	0	50%	0%	Apr	-	0.00	-
Poland	37 995 500	0.0	0	0	0	0	0	0	25%	0%	Apr	-	0.00	-
Portugal	10 752 590	0.0	0	0	0	0	0	0	75%	50%	Mar	-	0.00	-
Republic of Moldova	3 549 163	0.0	0	0	0	0	0	0	75%	25%	Mar	-	0.00	-
Romania	21 107 516	0.0	0	0	0	0	0	0	25%	0%	Jan	-	0.00	-
Russian Federation	139 872 928	-	-	-	-	-	-	-	-	-	No Report	-	-	-
San Marino	29 332	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Serbia	9 855 875	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Slovakia	5 417 394	0.0	0	0	0	0	0	0	100%	75%	Apr	-	0.00	-
Slovenia	2 029 418	0.0	0	0	0	0	0	0	25%	0%	Jan	-	0.00	-
Spain	45 724 660	0.0	0	0	0	0	0	0	75%	25%	Apr	-	0.00	-
Sweden	9 335 463	0.0	0	0	0	0	0	0	100%	50%	Apr	-	0.00	-
Switzerland	7 622 415	0.0	0	0	0	0	0	0	100%	25%	Apr	-	0.00	-
Tajikistan	7 203 979	-	-	-	-	-	-	-	-	-	No Report	-	-	-
The former Yugoslav Republic of Macedonia	2 044 005	0.5	1	0	0	1	0	0	100%	50%	Apr	0.0%	0.00	0.0%
Turkey	76 582 128	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Turkmenistan	5 243 476	-	-	-	-	-	-	-	-	-	No Report	-	-	-
Ukraine	45 167 108	-	-	-	-	-	-	-	-	-	No Report	-	-	-
United Kingdom	62 230 620	0.0	0	0	0	0	0	0	100%	50%	Apr	-	0.00	-
Uzbekistan	28 110 756	0.7	20	0	0	20	0	0	25%	0%	Mar	0.0%	0.00	0.0%
Total/Averages	896 071 408	0.1	57	7	0	50	11	2	0.0%	0.0%		#DIV/0!	0.00	0.0%

Data source: Monthly aggregate and case-based data reported by Member States to WHO/Europe and/or EUVAC.NET.

¹ Source: "World Population Prospects: The 2008 Revision", New York, United Nations and updates provided by Member States.

² Cases with missing classification are classified as "Clinical".

³ Imported or import related rubella cases included in total rubella.

Indicators not meeting target and countries not reporting monthly rubella data are highlighted in red. "-" indicates data not available/applicable or can not be calculated due to insufficient denominator.

Table 4. Measles and rubella laboratory test results, January—April 2011 (data as of 26 May 2011)

Country	Specimen* (Serum, Oral Fluid, Swab, Urine and other)								Reporting		
	Tested for measles	Positive for measles (%)	Measles Equivocal	Negative for measles	Tested for rubella	Positive for rubella (%)	Rubella Equivocal	Negative for rubella	% Completeness	% Timeliness	Month of last report
Albania	9	0 (0.0)	0	9	4	1 (25.0)	0	3	100.0%	75.0%	Apr
Andorra											No Lab
Armenia	19	0 (0.0)	0	19	19	0 (0.0)	1	18	100.0%	100.0%	Apr
Austria	452	12 (3.0)	0	440	1950	2 (0.0)	0	1948	100.0%	100.0%	Apr
Azerbaijan	8	0 (0.0)	0	8	8	0 (0.0)	0	8	100.0%	50.0%	Apr
Belarus	113	1 (1.0)	0	112	113	12 (11.0)	0	101	100.0%	100.0%	Apr
Belgium	205	102 (50.0)	4	98	31	4 (13.0)	2	19	100.0%	100.0%	Apr
Bosnia and Herzegovina									0.0%	0.0%	No Report
Bulgaria	36	17 (47.0)	0	19	25	0 (0.0)	0	25	100.0%	75.0%	Apr
Croatia	2	2 (100.0)	0	0	2	0 (0.0)	0	2	100.0%	100.0%	Apr
Cyprus	0	0	0	0	0	0	0	0	100.0%	100.0%	Apr
Czech Republic	12	2 (17.0)	3	7	22	4 (18.0)	0	18	100.0%	100.0%	Apr
Denmark	391	84 (21.0)	8	299	178	4 (2.0)	19	155	100.0%	50.0%	Apr
Estonia	68	3 (4.0)	0	65	195	2 (1.0)	0	193	100.0%	100.0%	Apr
Finland	167	22 (13.0)	0	145	164	7 (4.0)	0	157	75.0%	75.0%	Apr
France	1895	1403 (74.0)	11	481	0	0	0	0	100.0%	75.0%	Apr
Georgia	6	0 (0.0)	0	6	6	1 (17.0)	2	3	100.0%	50.0%	Apr
Germany	459	295 (64.0)	3	161	19	2 (11.0)	0	17	100.0%	100.0%	Apr
Greece	64	13 (20.0)	0	51	110	26 (24.0)	0	84	100.0%	50.0%	Apr
Hungary	28	0 (0.0)	0	28	144	6 (4.0)	1	137	100.0%	100.0%	Apr
Iceland	17	0 (0.0)	0	17	31	0 (0.0)	0	31	100.0%	25.0%	Apr
Ireland	123	17 (14.0)	4	102	81	1 (1.0)	2	78	100.0%	75.0%	Apr
Israel	37	7 (19.0)	0	30	200	19 (10.0)	0	181	100.0%	75.0%	Apr
Italy									0.0%	0.0%	No Report
Kazakhstan	39	22 (56.0)	0	13	13	0 (0.0)	0	13	100.0%	75.0%	Apr
Kyrgyzstan	33	4 (12.0)	0	27	33	1 (3.0)	0	30	75.0%	75.0%	Mar
Latvia	81	0 (0.0)	0	81	81	1 (1.0)	0	80	100.0%	75.0%	Apr
Lithuania	2	0 (0.0)	0	2	2	0 (0.0)	0	2	100.0%	100.0%	Apr
Luxembourg	45	0 (0.0)	0	45	19	1 (5.0)	1	17	100.0%	100.0%	Apr
Malta	3	3 (100.0)	0	0	480	3 (1.0)	0	477	100.0%	100.0%	Apr
Monaco											No Lab
Montenegro											No Lab
Netherlands	48	23 (48.0)	0	25	47	0 (0.0)	0	47	100.0%	75.0%	Apr
Norway	123	51 (41.0)	1	71	12	0 (0.0)	1	11	100.0%	100.0%	Apr
Poland	14	6 (43.0)	0	8	11	2 (18.0)	1	8	100.0%	100.0%	Apr
Portugal	5	3 (60.0)	0	0	0	0	0	0	100.0%	100.0%	Apr
Republic of Moldova	10	0 (0.0)	0	10	10	0 (0.0)	0	10	100.0%	100.0%	Apr
Romania	624	465 (75.0)	12	147	160	8 (5.0)	2	150	100.0%	100.0%	Apr
Russian Federation	1302	147 (11.0)	2	1153	1159	126 (11.0)	4	1029	100.0%	75.0%	Apr
San Marino											No Lab
Serbia	0		0	0	0		0	0	0.0%	0.0%	No Report
Slovakia	7	1 (14.0)	0	6	12	6 (50.0)	0	6	100.0%	100.0%	Apr
Slovenia	12	5 (42.0)	0	7	7	0 (0.0)	0	7	100.0%	100.0%	Apr
Spain	1207	647 (54.0)	15	149	19	2 (11.0)	0	10	100.0%	75.0%	Apr
Sweden									0.0%	0.0%	No Report
Switzerland	360	327 (91.0)	13	20	8	8 (100.0)	0	0	100.0%	100.0%	Apr
Tajikistan	9	0 (0.0)	0	9	9	0 (0.0)	0	9	75.0%	25.0%	Mar
The former Yugoslav Republic of Macedonia	125	45 (36.0)	14	66	97	0 (0.0)	2	95	100.0%	25.0%	Apr
Turkey	4153	111 (3.0)	70	3972	3554	167 (5.0)	190	3197	100.0%	75.0%	Apr
Turkmenistan	1	0 (0.0)	0	1	1	0 (0.0)	0	1	75.0%	75.0%	Mar
Ukraine	244	1 (0.0)	0	243	665	465 (70.0)	8	192	100.0%	100.0%	Apr
United Kingdom	1541	378 (25.0)	0	1163	358	5 (1.0)	0	353	100.0%	50.0%	Apr
Uzbekistan	179	135 (75.0)	9	35	50	1 (2.0)	2	47	100.0%	50.0%	Apr
Total / Average	14278	4354 (30%)	169	9350	10109	887 (9%)	238	8969	89.8%	74.0%	

*Specimen based data are not population based, and should not be interpreted as indicators for epidemiological surveillance. Laboratories may have received more than 1 clinical sample or may have conducted more than 1 test for a given case reported in Table 1.

Data source: Aggregated monthly lab data provided by laboratories of the regional measles and rubella lab network.

Table 5. Classification of AFP cases, surveillance performance indicators and weekly reporting, 2010-2011, WHO European region

Countries	2010 (1-53 weeks)											2011 (1-21 weeks)												
	AFP Cases ¹	AFP cases under 15 year of age	Hot AFP Cases ²	Classification					Rates			AFP Cases ¹	AFP cases under 15 years of age	Hot AFP Cases ²	Classification					Rates			Reporting	
				Polio Compatible	Pending	Discarded	Wild Polio cases	VDPV/VAPP	Non polio AFP rate ³	Adequate Stool collection	Surv. Index ⁵				Polio Compatible	Pending	Discarded	Wild Polio cases	VDPV/VAPP	Non polio AFP rate ³	Adequate Stool collection	Surv. Index ⁵	% Completeness ⁴	% Timeliness
Albania	13	13	0	0	0	13	0	0	1.79	100.0	1.00	1	1	0	0	1	0	0	0.00	100.0	0.0	72.0	38.0	19
Andorra	0	0	0	0	0	0	0	0	0.00	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	59.0	9.0	13
Armenia	13	13	1	0	0	13	0	0	2.08	61.5	0.62	10	10	2	0	6	4	0	1.51	90.0	0.9	95.0	42.0	21
Austria	3	3	0	0	0	3	0	0	0.24	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	81.0	14.0	18
Azerbaijan	29	29	0	0	0	29	0	0	1.36	100.0	1.00	16	16	0	0	16	0	0	0.00	100.0	0.0	86.0	80.0	21
Belarus	41	41	2	0	1	40	0	0	2.84	92.7	0.98	18	18	1	0	9	9	0	1.52	77.8	0.9	40.0	42.0	20
Belgium	3	3	0	0	0	3	0	0	0.17	0.0	0.06	0	0	0	0	0	0	0	0.00	0.0	0.0	54.0	42.0	20
Bosnia and Herzegovina	9	9	0	0	8	1	0	0	0.18	55.6	0.16	1	1	0	0	1	0	0	0.00	100.0	0.0	95.0	66.0	21
Bulgaria	13	13	2	0	1	12	0	0	1.19	92.3	0.92	3	3	0	0	1	2	0	0.47	66.7	0.5	9.0	4.0	20
Croatia	0	0	0	0	0	0	0	0	0.00	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	77.0	14.0	17
Cyprus	7	7	0	0	0	7	0	0	4.56	85.7	0.86	0	0	0	0	0	0	0	0.00	0.0	0.0	95.0	100.0	21
Czech Republic	2	2	0	0	0	2	0	0	0.14	100.0	0.14	3	3	0	0	0	3	0	0.48	100.0	0.5	77.0	71.0	20
Estonia	0	0	0	0	0	0	0	0	0.00	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	86.0	90.0	21
Georgia	7	7	0	0	0	7	0	0	0.99	100.0	0.99	4	4	0	0	1	3	0	1.02	100.0	1.0	86.0	90.0	21
Germany	11	10	0	0	9	2	0	0	0.02	10.0	0.01	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0
Greece	20	20	1	0	0	20	0	0	1.26	40.0	0.60	10	10	0	0	10	0	0	0.00	60.0	0.0	54.0	57.0	20
Hungary	13	13	0	0	0	13	0	0	0.88	38.5	0.54	0	0	0	0	0	0	0	0.00	0.0	0.0	90.0	42.0	21
Ireland	2	2	0	0	0	2	0	0	0.21	50.0	0.10	4	4	0	0	1	3	0	0.73	0.0	0.2	81.0	28.0	18
Israel	11	11	0	0	0	11	0	0	0.55	0.0	0.15	4	4	0	0	0	4	0	0.47	0.0	0.1	68.0	71.0	21
Italy	53	53	0	0	0	53	0	0	0.62	58.5	0.39	21	21	1	0	18	3	0	0.08	57.1	0.1	0.0	0.0	0
Kazakhstan	113	112	4	0	19	93	1	0	2.48	99.1	0.99	41	41	0	0	20	21	0	1.30	97.6	1.0	31.0	28.0	20
Kyrgyzstan	68	64	0	0	14	54	0	0	3.35	96.9	1.00	19	17	0	0	8	11	0	1.61	100.0	1.0	9.0	9.0	16
Latvia	5	5	0	0	0	5	0	0	1.61	100.0	1.00	0	0	0	0	0	0	0	0.00	0.0	0.0	90.0	90.0	21
Lithuania	10	10	0	0	0	10	0	0	2.10	100.0	1.00	3	3	0	0	3	0	0	0.00	100.0	0.0	90.0	90.0	21
Malta	0	0	0	0	0	0	0	0	0.00	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	77.0	14.0	17
Montenegro	1	1	0	0	0	1	0	0	0.83	100.0	0.83	1	1	0	0	1	0	0	0.00	0.0	0.0	81.0	85.0	20
Norway	9	9	0	0	0	9	0	0	0.99	55.6	0.77	1	1	0	0	1	0	0	0.00	0.0	0.0	86.0	14.0	20
Poland	47	47	0	0	0	46	0	1	0.82	72.3	0.68	16	16	0	0	12	4	0	0.17	43.8	0.1	95.0	71.0	21
Portugal	8	8	0	0	0	8	0	0	0.49	50.0	0.31	0	0	0	0	0	0	0	0.00	0.0	0.0	0.0	0.0	0
Republic of Moldova	15	15	3	0	0	15	0	0	2.52	73.3	0.87	3	3	0	0	3	0	0	0.00	100.0	0.0	90.0	95.0	20
Romania	16	16	1	0	0	16	0	0	0.50	100.0	0.50	12	12	0	0	4	8	0	0.59	100.0	0.6	90.0	90.0	21
Russian Federation	397	390	68	0	0	378	14	5	1.80	94.9	0.95	159	158	12	0	97	62	0	0.69	94.3	0.7	81.0	85.0	20
Serbia	20	20	0	0	0	20	0	0	1.15	90.0	0.95	2	2	0	0	2	0	0	0.00	50.0	0.0	72.0	71.0	20
Slovakia	1	1	0	0	0	1	0	0	0.12	0.0	0.00	1	1	0	0	1	0	0	0.00	100.0	0.0	59.0	57.0	20
Slovenia	0	0	0	0	0	0	0	0	0.00	0.0	0.00	0	0	0	0	0	0	0	0.00	0.0	0.0	90.0	80.0	21
Spain	31	31	2	0	0	31	0	0	0.46	45.2	0.34	7	7	0	0	2	5	0	0.17	14.3	0.1	95.0	66.0	21
Switzerland	9	9	0	0	0	9	0	0	0.78	33.3	0.43	3	2	0	0	0	3	0	0.62	100.0	0.6	77.0	52.0	21
Tajikistan	712	585	0	58	3	193	457	1	7.50	86.7	0.88	12	10	0	0	5	7	0	0.64	90.0	0.6	59.0	61.0	20
The former Yugoslav Republic of	7	7	0	0	0	7	0	0	1.95	100.0	1.00	1	1	0	0	1	0	0	0.00	100.0	0.0	77.0	76.0	19
Turkey	243	240	6	0	0	240	0	3	1.06	74.6	0.79	77	75	1	0	23	54	0	0.64	82.7	0.6	81.0	85.0	20
Turkmenistan	50	50	0	0	0	46	3	1	3.06	100.0	1.00	10	10	0	0	4	6	0	0.94	100.0	0.9	36.0	38.0	21
Ukraine	130	125	22	0	0	129	0	1	2.04	96.0	0.98	53	53	8	0	25	28	0	1.05	96.2	1.0	86.0	90.0	21
Uzbekistan	147	133	4	0	0	147	0	0	1.85	97.7	0.98	66	65	4	0	47	19	0	0.57	93.8	0.5	59.0	52.0	21
Average/Total	2289	2127	116	58	55	1689	475	12	1.66	86.00	0.89	582	573	29	0	323	259	0	0.75	86.00	68.0	73.0	53.0	

¹ AFP case of all ages (Denmark, Finland, France, Iceland, Luxembourg, Monaco, Netherlands, San Marino, Sweden and United Kingdom do not report AFP cases. High quality surveillance (e.g. enterovirus and/or environmental) to detect poliovirus exists in Member States with no AFP surveillance.

² Hot cases = AFP case reported with a priority code (e.g. less than three doses of polio vaccine/Clinically polio/Recent travel to endemic country/high risk group).

³ Non-polio AFP cases per 100 000 children under the age of 15 years (annualized for year 2009). Number of non-polio (discarded) AFP cases X 100000 / total population under 15 years.

⁴ two stool samples collected with 14 days and 48 hours apart.

⁵ Surveillance Index = non-polio AFP rate up to 1.0 x (% AFP cases with at least 1 adequate specimens within 14 days of onset).

Countries infected in 2010