

### Measles elimination status

2016 interrupted 2017 interrupted



Source: European Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report: www.euro.who.int/7thrvc

#### Measles and rubella surveillance



Source: WHO/UNICEF Joint Reporting Form on Immunization, 2017

#### Measles and rubella immunization schedule, 2017

	Vaccine	Schedule	Year of introduction				
MCV1	MMR	9 months	MCV2	1994			
MCV2	MMR	+1 month	RCV	1972			
Ν	Measles vaccination in school						

Source: Immunization schedule, WHO, Data and Statistics, Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring\_surveillance/data/en/) and communication with the country MMR = measles-mumps-rubella vaccine; MCV1 = first dose measles-containing vaccine; MCV2 = second dose measles-containing vaccine; RCV = rubella-containing vaccine

#### Definition used for an outbreak

At least two measles or rubella cases including cases with epidemiological links

Source: Measles and rubella elimination Annual Status Update report, 2017



#### Rubella elimination status



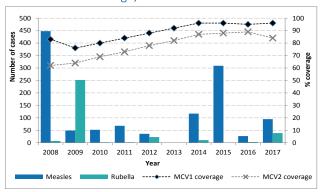
Source:European Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report: www.euro.who.int/7thrvc

#### Demographic information, 2017

Total population	8 735 453
< 1 year old	84 985
< 5 years old	416 381

Source: World Population Prospects: The 2017 Revision, New York, United Nations

# Measles and rubella cases and immunization coverage, 2008–2017

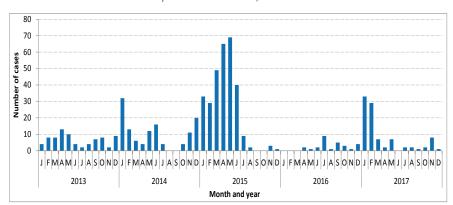


Source: Disease incidence and immunization coverage (WUENIC), WHO, Data and Statistics, Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring\_surveillance/data/en/)

MCV1 = first dose of measles-containing vaccine

MCV2= second dose of measles-containing vaccine

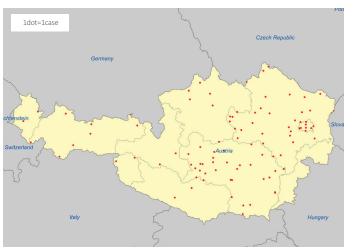
## Confirmed measles cases by month of onset, 2013-2017



Source: CISID 2017



### Measles cases by first subnational level, 2017

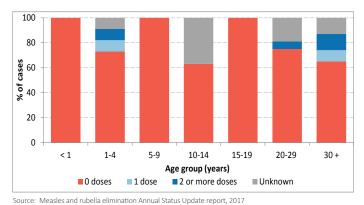




Measles genotypes by first subnational level, 2017

Source: Measles and rubella elimination Annual Status Update report, 2017

Note: The dots in the maps are placed randomly within the administrative regions. Map disclaimer: The boundaries and names shown and the designations used on the maps do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the definitiation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.



### Measles cases by age group and vaccination status, 2017

# Sources of infection, 2017

	Measles	Rubella
Imported	11	3
Import-related	13	0
Unknown/ Not reported	1	1
Endemic/Not imported	70	35

Source: Measles and rubella elimination Annual Status Update report, 2017 and communication with the country

# Note: Excludes imported cases

# Information on CRS, 2017



CRS = congenital rubella syndrome



# Measles incidence, epidemiologic and virologic characteristics, 2013-2017

	Suspected		Confirmed m	neasles cases		Discarded as	Measles	Genotypes	
	cases	Laboratory	Epi- linked	Clincally	Total	non- measles	incidence	detected	
2013	96	68	14	3	76	20	8	D4,D8	
2014	167	88	4	25	117	50	13.8	B3,D8,D9,H1	
2015	386	230	12	67	309	74	36	D8	
2016	53	25	0	2	27	26	3.1	B3,D8	
2017	147	83	1	11	95	52	9.6	B3,D8,H1	

Source: Measles and rubella elimination Annual Status Update report, 2013-2017 Incidence calculated per 1 million population

ND = Data not available; NA= Not applicable

# Rubella incidence, epidemiologic and virologic characteristics, 2013-2017

	Suspected rubella		Confirmed r	ubella cases		Discarded as non- rubella	Rubella incidence	Genotypes detected
	cases	Laboratory	Epi- linked	Clincally	Total			
2013	14	8	0	0	8	6	0.9	ND
2014	22	0	0	11	11	11	1.3	ND
2015	14	1	0	0	1	13	0.1	ND
2016	19	2	1	0	3	16	0.3	ND
2017	53	36	3	0	39	13	4.1	2B,1E

Source: Measles and rubella elimination Annual Status Update report, 2013-2017 Incidence calculated per 1 million population ND = Data not available; NA= Not applicable Measles surveillance and laboratory performance indicators, 2013-2017

	Discarded non- measles rate	% 1st sub- national unit with ≥ 2 discarded cases	% cases with adequate laboratory investigation	% origin of infection known	# specimen tested for measles	% positive for measles	Rate of viral detection	% WHO and proficient labs
2013	0.3	0%	92%	94%	ND	ND	ND	ND
2014	0.6	0%	74%	83%	416	18.3%	93%	ND
2015	0.9	0%	73%	100%	695	28.5%	79%	100%
2016	0.3	0%	89%	100%	402	5.2%	100%	100%
2017	0.6	0%	92%	99%	456	18.2%	91%	100%

Source: ASU 2013-2017 ND = Data not available; NA= Not applicable

A proficient laboratory is WHO accredited and/or has an established quality assurance programme with oversight by a WHO accredited laboratory

Rubella surveillance and laboratory performance indicators, 2013-2017

	Discarded non- rubella rate	% 1st sub- national unit with ≥ 2 discarded cases	% cases with adequate laboratory investigtion	% origin of infection known	# specimen tested for rubella	% positive for rubella	Rate of viral detection	% WHO and proficient labs
2013	7%	0%	ND	100%	ND	ND	ND	ND
2014	0.1	0%	52%	91%	67	0%	ND	ND
2015	0.2	0%	93%	100%	329	0%	ND	100%
2016	0.2	0%	95%	67%	409	0.7%	ND	100%
2017	0.1	0%	90%	97%	115	31.3%	100%	100%
Source: ASU 20	13-2017							

ND = Data not available; NA= Not applicable

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#### RVC comments, based on 2017 reporting

The Regional Verification Commission for Measles and Rubella Elimination (RVC) commends the national verification committee for measles and rubella elimination (NVC), national health authorities and public health system on achieving rubella elimination. The RVC would appreciate to learn more about hospitals, associations, and medical schools that require pre-employment screening. The RVC also looks forward to receiving data next year using the updated model for coverage estimation and, if any serosurveys and particularly for immunity at subnational level have been conducted, the RVC would appreciate receiving results. Health authorities may consider whether would be feasible and beneficial to conduct serosurveys to identify population immunity gaps, followed by immunization of susceptible individuals through SIAs.

Source:European Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report: www.euro.who.int/7thrvc

### Surveillance performance indicators and targets

- a. Rate of discarded cases: at least 2 discarded measles or rubella cases per 100 000 population
- b. % cases with adequate laboratory investigation:  $\geq$  80%
- c. % origin of infection known:  $\geq 80\%$
- d. Rate of viral detection:  $\geq 80\%$