Measles and rubella elimination country profile
Serbia

Measles elimination status

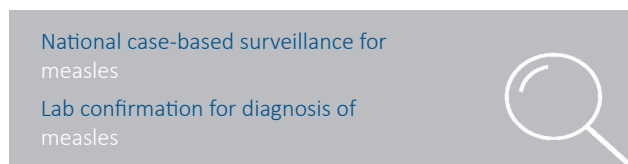2016 endemic
2017 endemic

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

Measles and rubella surveillance

National case-based surveillance for measles

Lab confirmation for diagnosis of measles

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

Measles and rubella immunization schedule, 2017

	Vaccine	Schedule	Year of introduction	
MCV1	MMR	12 months	MCV2	1994
MCV2	MMR	7 years	RCV	1994
Measles vaccination in school			No	

Source: Immunization schedule, WHO, Data and Statistics, Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
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

Two or more measles or rubella cases which are temporarily related and epidemiologically or virologically linked or both

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

Rubella elimination status

2016 endemic
2017 endemic

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

Demographic information, 2017

Total population	8 790 574
< 1 year old	94 218
< 5 years old	467 331

Source: World Population Prospects: The 2017 Revision, New York, United Nations
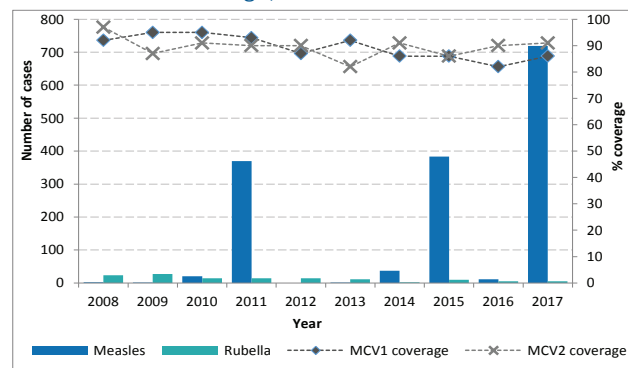
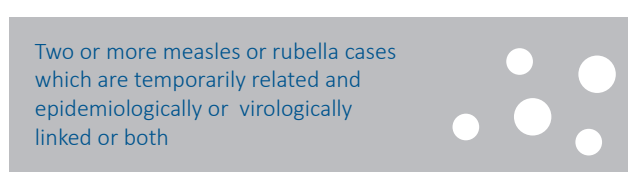## Measles and rubella cases and immunization coverage, 2008–2017

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
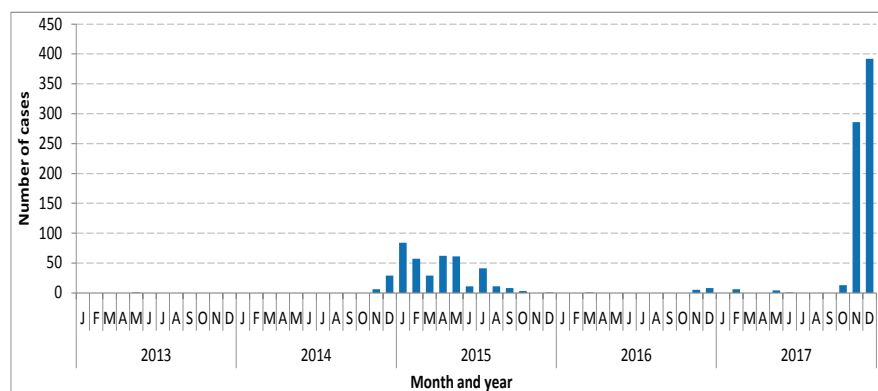MCV2= second dose of measles-containing vaccine

Confirmed measles cases by month of onset, 2013-2017

Source: CISID 2017

Measles cases by first subnational level, 2017

1dot=1case
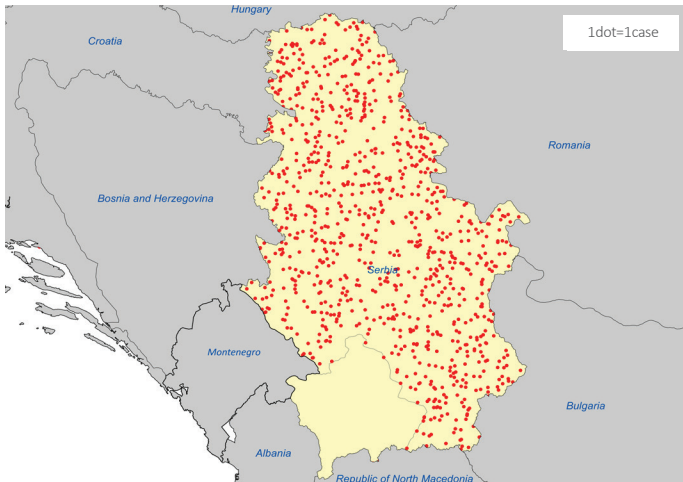
Source: Measles and rubella elimination Annual Status Update report, 2017
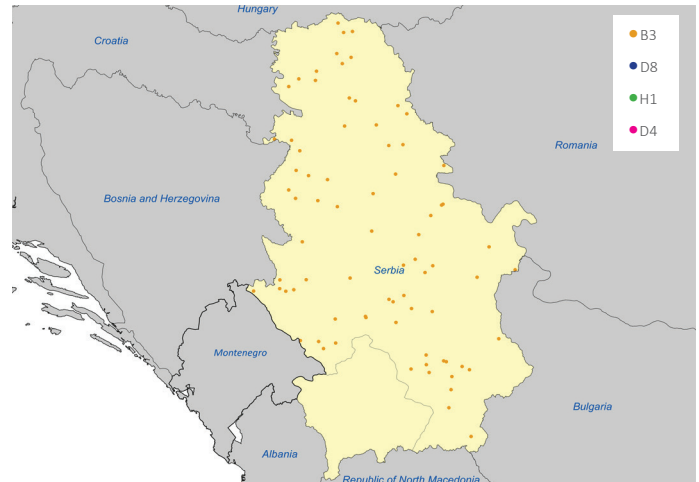
Measles genotypes by first subnational level, 2017

- B3
- D8
- H1
- D4

Source: MeaNS 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 delimitation 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
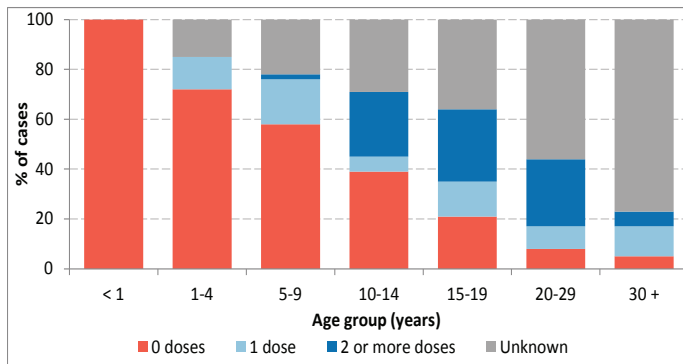
Source: Measles and rubella elimination Annual Status Update report, 2017
Note: Excludes imported cases

Sources of infection, 2017

	Measles	Rubella
Imported	0	0
Import-related	0	0
Unknown/ Not reported	0	0
Endemic	719	5

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

Information on CRS, 2017

No cases reported
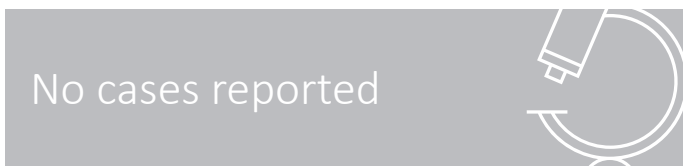
Source: Measles and rubella elimination Annual Status Update report, 2017
CRS = congenital rubella syndrome

Measles incidence, epidemiologic and virologic characteristics, 2013-2017

	Suspected measles cases	Confirmed measles cases				Discarded as non-measles	Measles incidence	Genotypes detected
		Laboratory	Epi- linked	Clinically	Total			
2013	30	1	0	0	1	29	0	ND
2014	81	35	2	0	37	44	5.1	D8,D9
2015	543	308	75	0	383	160	53.7	D8
2016	73	14	1	0	15	58	2.1	B3
2017	1149	285	434	0	719	430	98.2	B3

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	0.4	4%	100%	ND	ND	ND	ND	ND
2014	0.6	8%	100%	73%	79	44.3%	ND	ND
2015	2.2	44%	67.1%	100%	459	67.1%	50%	100%
2016	0.7	12%	100%	100%	73	19.2%	100%	100%
2017	6.1	48%	47%	37.3%	540	52.8%	18.2%	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 incidence, epidemiologic and virologic characteristics, 2013-2017

	Suspected rubella cases	Confirmed rubella cases				Discarded as non-rubella	Rubella incidence	Genotypes detected
		Laboratory	Epi- linked	Clinically	Total			
2013	ND	ND	ND	ND	ND	ND	1.4	ND
2014	2	2	0	0	2	0	0.2	ND
2015	ND	2	0	8	10	ND	1.4	ND
2016	ND	2	0	3	5	ND	0.7	ND
2017	0	2	0	3	5	0	0.7	ND

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 surveillance and laboratory performance indicators, 2013-2017

	Discarded non-rubella rate	% 1st sub-national unit with ≥ 2 discarded cases	% cases with adequate laboratory investigation	% origin of infection known	# specimen tested for rubella	% positive for rubella	Rate of viral detection	% WHO and proficient labs
2013	ND	ND	ND	ND	ND	ND	ND	ND
2014	ND	ND	ND	ND	ND	ND	ND	ND
2015	ND	ND	ND	ND	ND	ND	ND	ND
2016	ND	ND	ND	ND	60	3.3%	ND	100%
2017	ND	ND	ND	ND	0	NA	ND	NA

Source: ASU 2013-2017
ND = Data not available; NA= Not applicable
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RVC comments, based on 2017 reporting

Regional Verification Commission for Measles and Rubella Elimination (RVC) commends Serbia on the expansion of genotyping of confirmed cases and reiterates the request to include line-lists of discarded suspected cases with results of laboratory investigations for first-level administrative units. Measles and rubella surveillance should be strengthened and its quality improved. It is necessary to reach and maintain >95% coverage with both doses of MRCV at national and subnational levels within routine immunization programme, but the RVC also urges Serbia to consider conducting SIAs to reach all susceptibles, boost population immunity and prevent outbreaks

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: ≥ 80%

c. % origin of infection known: ≥ 80%

d. Rate of viral detection: ≥ 80%