

Measles and rubella elimination country profile Bosnia and Herzegovina

Measles elimination status



Source: European Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report: www.euro.who.int/6thRVC

National plan of action



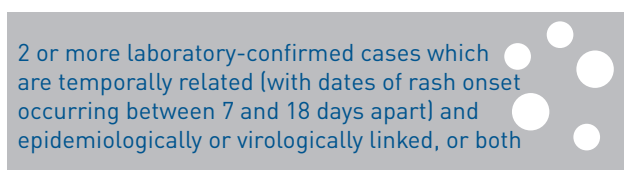
Source: Measles and rubella elimination Annual Status Update report, 2016
ND= Data not available

Measles and rubella immunization schedule, 2016

	Vaccine	Schedule	Year of introduction
MCV1	MMR	1 year	MCV2 1971
MCV2	MMR	6 years	RCV 1976
Measles vaccination in school			Yes

Source: Immunization schedule, WHO, Data and Statistics, Immunization Monitoring and Surveillance
MMR = measles-mumps-rubella-containing vaccine; MCV1 = first dose measles-containing vaccine; MCV2 = second dose measles-containing vaccine; RCV = rubella-containing vaccine

Definition used for an outbreak



Source: Measles and rubella elimination Annual Status Update report, 2016

Rubella elimination status



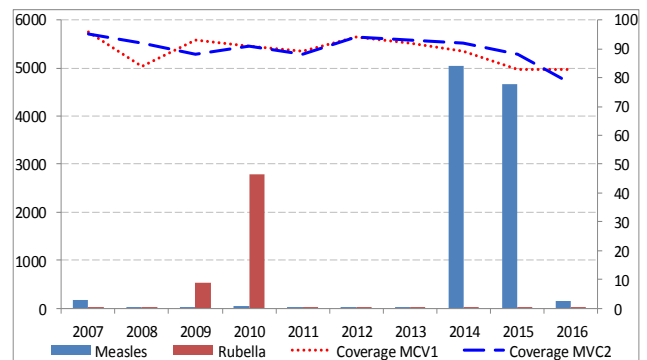
Source: European Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report: www.euro.who.int/6thRVC

Demographic information, 2016

Total population	3 802 134
< 1 year old	33 358
< 5 years old	166 083

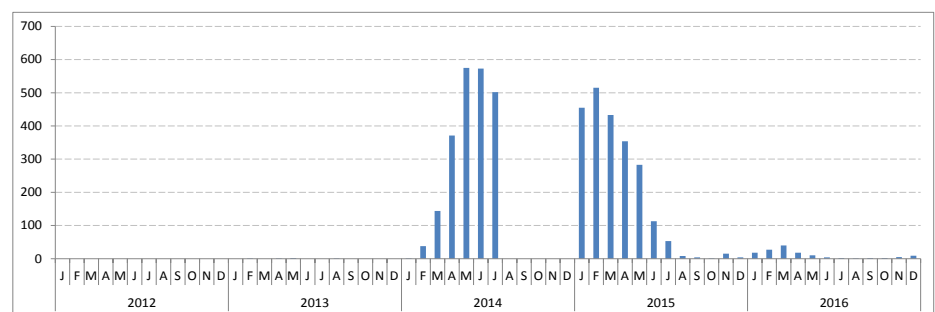
Source: World Population Prospects: The 2015 Revision, New York, United Nations

Measles and rubella cases and immunization coverage, 2007–2016



Source: Disease incidence and immunization coverage, WHO, Data and Statistics, Immunization Monitoring and Surveillance
MCV1 = first dose of measles-containing vaccine
MCV2 = second dose of measles-containing vaccine

Confirmed measles cases by month of onset, 2012–2016



Source: CISID2 2016



Measles and rubella elimination country profile

Bosnia and Herzegovina

Measles cases by first subnational level, 2016



Source: Measles and rubella elimination Annual Status Update report, 2016

Measles genotypes by first subnational level, 2016

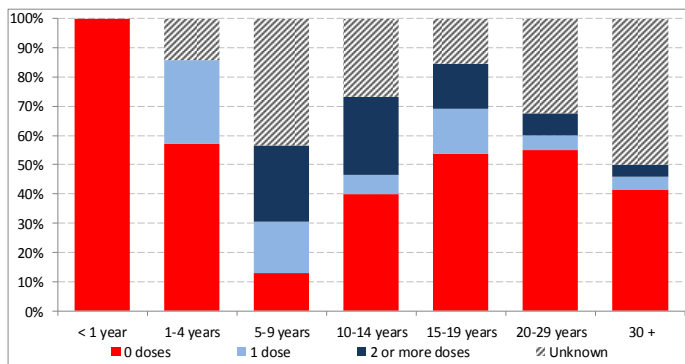


Source: MeaNS 2016
(Note: no subnational genotype information available)

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, 2016



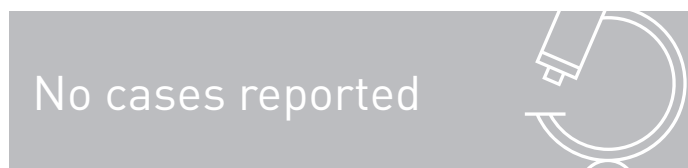
Source: Measles and rubella elimination Annual Status Update report, 2016
(No age group and vaccination status data submitted)

Sources of infection, 2016

	Measles	Rubella
Imported	0	0
Import-related	0	0
Unknown/ Not reported	5	0
Endemic	132	16

Source: Measles and rubella elimination Annual Status Update report, 2016

Information on CRS, 2016



Source: Measles and rubella elimination Annual Status Update report, 2016
CRS = congenital rubella syndrome

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Measles incidence, epidemiologic and virologic characteristics, 2012-2016

	Suspected measles cases	Confirmed measles cases				Discarded as non-measles	Measles incidence	Genotypes detected
		Laboratory	Epi-linked	Clinically	Total			
2012	ND	0	0	25	25	ND	5.9	NA
2013	10	0	0	17	17	1	2.6	ND
2014	5 048	140	ND	4 880	5 048	99	1 281.3	ND
2015	4 105	351	231	4 084	4 666	126	531.3	D8
2016	162	119	0	43	162	36	42.6	ND

Source: Measles and rubella elimination Annual Status Update report, 2012-2016
Incidence calculated per 1 million population
ND = Data not available; NA= Not applicable

Rubella incidence, epidemiologic and virologic characteristics, 2012-2016

	Suspected rubella cases	Confirmed measles cases				Discarded as non-rubella	Rubella incidence	Genotypes detected
		Laboratory	Epi-linked	Clinically	Total			
2012	ND	0	0	17	17	ND	9.3	ND
2013	7	0	0	7	7	0	1.9	ND
2014	8	5	0	3	8	0	2.1	ND
2015	12	9	ND	3	12	3	1.9	ND
2016	22	15	0	7	22	7	5.8	ND

Source: Measles and rubella elimination Annual Status Update report, 2012-2016
Incidence calculated per 1 million population
ND = Data not available; NA= Not applicable

RVC comments, based on 2016 reporting

The Regional Verification Commission for Measles and Rubella Elimination (RVC) recognizes the complex circumstances and commends the country for continued efforts to put in place strategies to improve coverage and surveillance. The RVC appreciates the National Verification Committee's (NVC) efforts to provide a complete and comprehensive ASU, and encourages the NVC to continue cooperating with the RVC Secretariat in preparation of the next ASU.

The RVC is concerned about the size of the susceptible population in the country and urges action to increase measles and rubella immunity in all population groups throughout the country. If SIAs are considered, they should be thoroughly planned, synchronized in both entities and district, and urgently performed. Surveillance needs to be strengthened, including increasing the rates of laboratory investigation and viral detection of measles and rubella through the submission of specimens to a WHO-accredited laboratory for IgM testing and for genotyping. Further activities should be considered as a matter of urgency.

Source: Regional Verification Commission for Measles and Rubella Elimination (RVC) meeting report (www.euro.who.int/6thRVC)

Surveillance performance indicators and targets

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

Measles surveillance and laboratory performance indicators, 2012-2016

	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
2012	ND	ND	NA	ND	ND	ND	ND	ND
2013	20%	NA	20%	0%	ND	ND	0	ND
2014	0.4	ND	0.1	0%	254	0.7	0	ND
2015	0.0	ND	0.1	0%	640	0.7	0	100%
2016	1.0	ND	0.1	100%	36	0.4	0	47%

Source: MR LDMS 2012-2016, CISID2 2012-2016, ASU 2016 and laboratory accreditation results 2012-2016
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, 2012-2016

	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
2012	ND	ND	ND	ND	ND	ND	ND	ND
2013	NA	NA	0%	0%	ND	ND	0	ND
2014	NA	NA	ND	0%	3 451	0.0	0	ND
2015	0	ND	0%	0%	302	0.1	0	100%
2016	0.2	ND	68%	0%	30	100%	0	ND

Source: MR LDMS 2012-2016, CISID2 2012-2016, ASU 2016 and laboratory accreditation results 2012-2016
ND = Data not available; NA= Not applicable
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