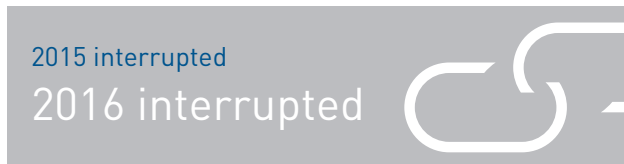


Measles and rubella elimination country profile

The former Yugoslav Republic of Macedonia

Measles elimination status



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

Rubella elimination status



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

National plan of action



Source: Rubella Elimination Annual Status Update report, 2016
ND = Data not available

Demographic information, 2016

Total population	2 081 012
< 1 year old	23 191
< 5 years old	117 698

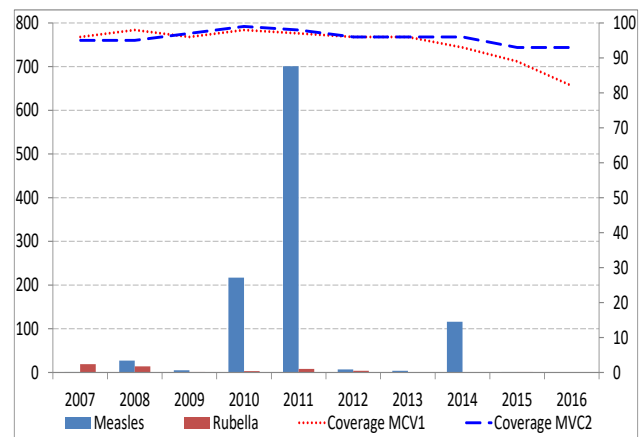
Source: World Population Prospects: The 2015 Revision, New York, United Nations

Measles and rubella immunization schedule, 2016

	Vaccine	Schedule	Year of introduction	
MCV1	MMR	12 months	MCV2	1987
MCV2	MMR	6 years	RCV	1982
Measles vaccination in school				Yes

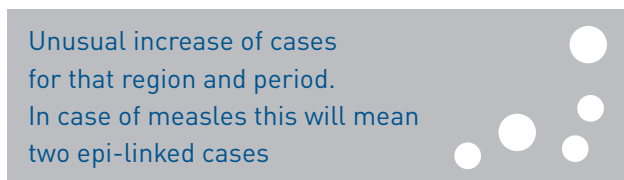
Source: Immunization schedule, WHO, Data and Statistics, Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
MMR = measles-mumps-rubella-containing vaccine; MCV1 = first dose measles-containing vaccine; MCV2 = second dose measles-containing vaccine;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

Measles and rubella cases and immunization coverage, 2007–2016



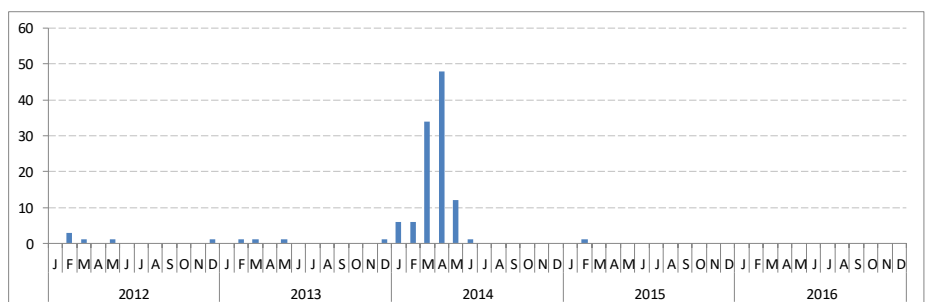
Source: Disease incidence and immunization coverage, WHO, Data and Statistics, Immunization Monitoring and Surveillance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
MCV1 = first dose of measles-containing vaccine
MCV2 = second dose of measles-containing vaccine

Definition used for an outbreak



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

Confirmed measles cases by month of onset, 2012–2016



Source: CISID2 2016



Measles and rubella elimination country profile

The former Yugoslav Republic of Macedonia

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	3	0	4	7	ND	3.4	ND
2013	16	2	0	2	4	12	1.5	D8
2014	126	49	20	47	116	10	56.2	D8
2015	2	0	0	0	0	2	0	NA
2016	3	0	0	0	0	3	0	NA

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

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	ND	ND	ND	ND	ND	ND
2013	ND	ND	ND	ND	ND	ND	ND	ND
2014	ND	ND	100%	ND	119	44.5%	ND	ND
2015	ND	ND	NA	NA	2	0%	NA	100%
2016	1.01	3.2%	NA	NA	3	0%	NA	100%

Source: ASU 2012-2016, MeaNS 2012-2016 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 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	0	4	ND	1.9	ND
2013	0	0	0	0	0	0	0	NA
2014	0	0	0	0	0	0	0	NA
2015	2	0	0	0	0	2	0	NA
2016	0	0	0	0	0	0	0	NA

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 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	NA	NA	ND	0%	NA	ND
2014	NA	NA	NA	NA	18	0%	NA	ND
2015	ND	ND	NA	NA	711	0.1%	NA	100%
2016	NA	NA	NA	NA	0	0%	NA	ND

Source: ASU 2012-2016, RubeNS 2012-2016 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

RVC comments, based on 2016 reporting

The Regional Verification Commission for Measles and Rubella Elimination (RVC) commends the National Verification Committee (NVC), national health authorities and public health system on sustained interruption of measles and on achieving rubella elimination. However, the RVC requests from the NVC a clarification of the numerator and denominator used to calculate MRCV coverage. The RVC insists that a more comprehensive ASU is critical for precise and in-depth review of the elimination status. The RVC urges the NVC and national health authorities to work towards improvement of the quality of measles, rubella and CRS surveillance and better reporting in the ASU.

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: $\geq 80\%$

Information on CRS, 2016

No cases reported

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