Measles and rubella elimination country profile
Bulgaria

World Health Organization
REGIONAL OFFICE FOR **Europe**

Measles elimination status

2015 eliminated
2016 eliminated

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

National plan of action

Does the country have a national plan of action?
Yes

Is it updated? Yes

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	13 months	MCV2	1983
MCV2	MMR	12 years	RCV	1983
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-containing vaccine; MCV1 = first dose measles-containing vacccine; 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, 2016

## Rubella elimination status

2015 endemic
2016 interrupted

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

Demographic information, 2016

| Total population	7 097 796
< 1 year old	67 048
< 5 years old	324 388

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

Measles and rubella cases and immunization coverage, 2007–2016
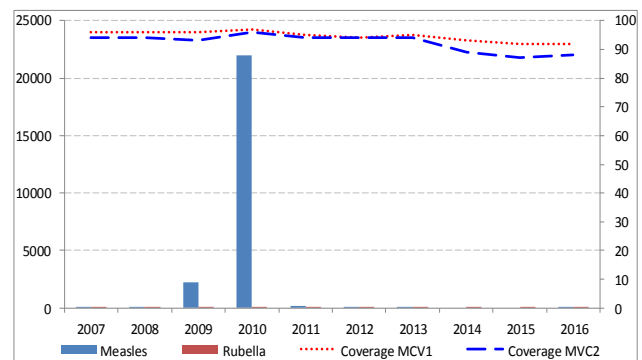
Source: Disease incidence and immunization coverage, WHO, Data and Statistics, Immunization Monitoring and Surveilance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
MCV1 = first dose of measles-containing vaccine
MCV2= second dose of measles-containing vaccine

Confirmed measles cases by month of onset, 2012-2016
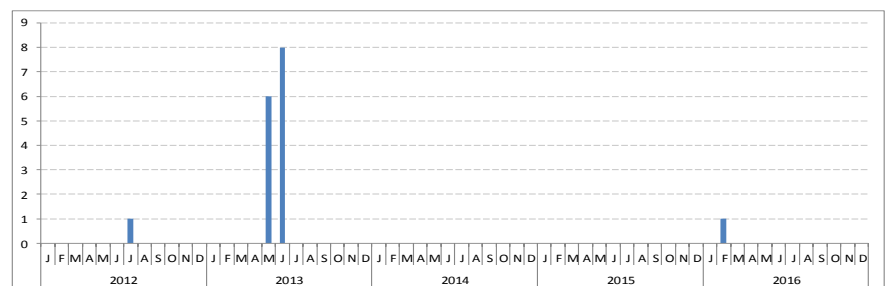
Source: CISID2 2016

Measles cases by first subnational level, 2016

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

Measles genotypes by first subnational level, 2016

Legend:
- B3
- D8
- H1
- D4

Source: MeaNS 2016

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

Legend: ■ 0 doses ■ 1 dose ■ 2 or more doses ▨ Unknown
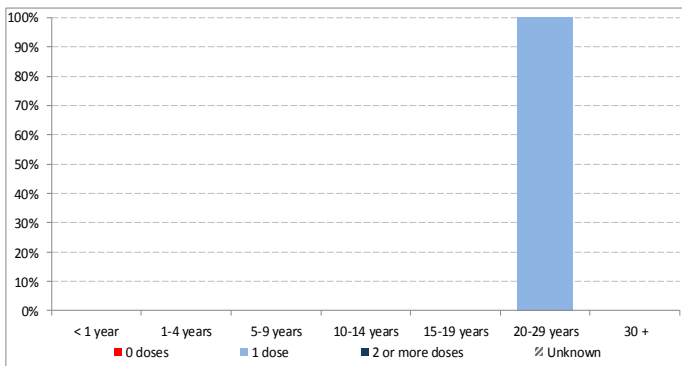
Source: Measles and rubella elimination Annual Status Update report, 2016

Sources of infection, 2016

	Measles	Rubella
Imported	1	0
Import-related	0	0
Unknown/ Not reported	0	2
Endemic	0	0

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

Information on CRS, 2016

No cases reported
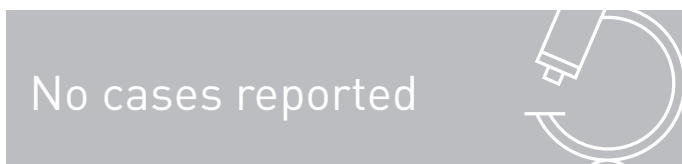
Source: Measles and rubella elimination Annual Status Update report, 2016
CRS = congenital rubella syndrome

Measles and rubella elimination country profile Bulgaria

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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
		Labora-tory	Epi-linked	Clincally	Total			
2012	ND	1	0	0	1	ND	0	ND
2013	19	13	1	0	14	5	1.6	D8
2014	3	0	0	0	0	3	0	NA
2015	10	0	0	0	0	10	0	NA
2016	2	1	0	0	1	1	0	H1

Source: Measles and rubella elimination Annual Status Update report, 2012-2016, and internal communication from country
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 investiga-tion	% origin of infection known	# specimen tested for measles	% positive for measles	Rate of viral detection	% WHO and proficient labs
2012	32%	ND	100%	100%	ND	ND	ND	100%
2013	11%	11%	100%	100%	ND	ND	100%	100%
2014	4%	0%	100%	NA	3	0%	NA	100%
2015	14%	0%	100%	NA	10	0%	NA	100%
2016	1%	0%	100%	NA	2	50%	100%	100%

Source: ASU 2012-2016, MeaNS 2012-2016 and laboratory accreditation results 2012-2016, and internal communication from country 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	Clincally	Total			
2012	ND	0	0	18	18	ND	2.5	ND
2013	13	0	1	9	10	3	1.4	ND
2014	8	1	0	6	7	4	97.0%	ND
2015	16	0	0	5	5	11	0.7	ND
2016	5	0	0	2	2	3	28.0%	ND

Source: Measles and rubella elimination Annual Status Update report, 2012-2016, and internal communication from country
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 investiga-tion	% origin of infection known	# specimen tested for rubella	% positive for rubella	Rate of viral detection	% WHO and proficient labs
2012	35%	ND	100%	NA	ND	ND	ND	100%
2013	4%	11%	100%	100%	ND	ND	0%	100%
2014	1%	0%	38%	0%	3	33.3%	NA	100%
2015	15%	0%	100%	NA	11	0%	NA	100%
2016	4%	0%	100%	NA	3	0%	NA	100%

Source: ASU 2012-2016, RubeNS 2012-2016 and laboratory accreditation results 2012-2016, and internal communication from country ND = Data not available; NA= Not applicable
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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 transmission and achieving interruption of rubella transmission. The RVC welcomes recent steps undertaken to improve surveillance performance. The RVC invites the national health authorities and the NVC to consider conducting a targeted retrospective CRS survey using established WHO case definitions to report the absence of any missed cases in view of reported clinically compatible rubella cases in the country. The RVC urges the national health authorities to improve the rate of viral detection of rubella and to take adequate measures to further improve both MRCV1 and MRCV2 coverage.

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

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%