Measles and rubella elimination country profile
Croatia

World Health Organization
REGIONAL OFFICE FOR Europe

Measles elimination status

2015 interrupted
2016 eliminated

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

Rubella elimination status

2015 interrupted
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?
ND
Is it updated? ND

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

Demographic information, 2016

Total population	4 225 001
< 1 year old	40 089
< 5 years old	200 024

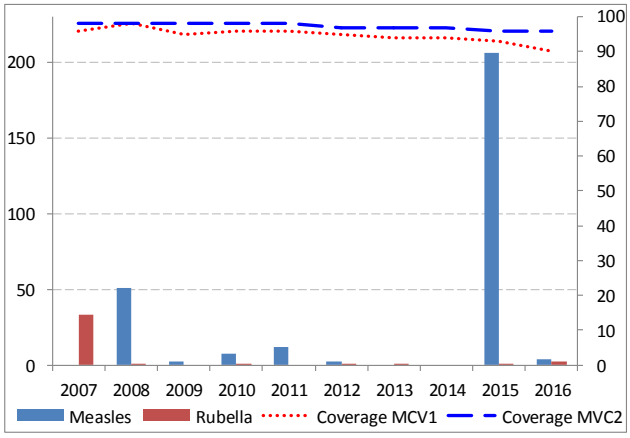
Source: World Population Prospects: The 2015 Revision, New York, United Nations

Measles and rubella immunization schedule, 2016

	Vaccine	Schedule	Year of introduction	
MCV1	MMR	1 year	MCV2	1968
MCV2	MMR	6 years	RCV	1975
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 vacccine; MCV2 = second dose measles-containing vaccine; RCV = rubella-containing vaccine

Measles and rubella cases and immunization coverage, 2007–2016



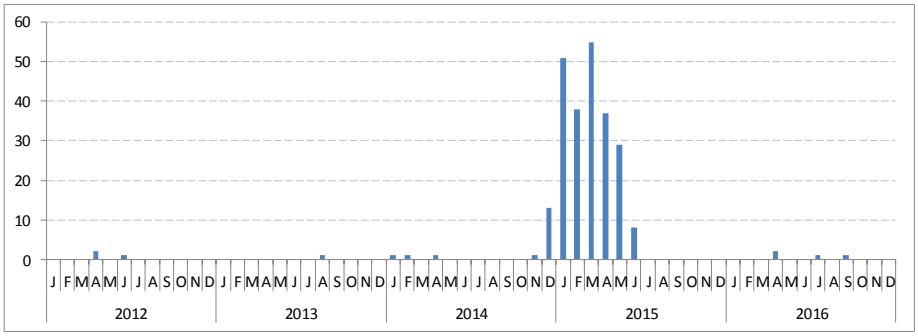
Source: Disease incidence and immunization coverage, WHO, Data and Statistics, Immunization Monitoring and Surveilance (http://www.who.int/immunization/monitoring_surveillance/data/en/)
MCV1 = first dose of measles-containing vaccine
MCV2= second dose of measles-containing vaccine

Definition used for an outbreak

One case of measles/rubella which is not imported

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

Confirmed measles cases by month of onset, 2012-2016



Source: CISID2 2016

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Measles cases by first subnational level, 2016

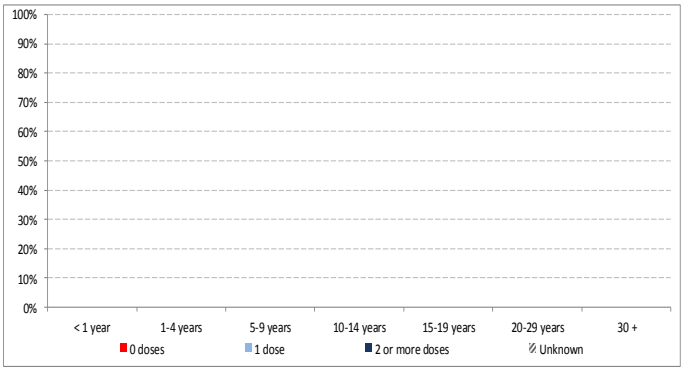
Source: Measles and rubella elimination Annual Status Update report, 2016

Measles genotypes by first subnational level, 2016

Source: MeaNS 2016

Note: 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 available)

Sources of infection, 2016

	Measles	Rubella
Imported	4	2
Import-related	0	0
Unknown/ Not reported	0	0
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

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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	Clincally	Total			
2012	ND	0	0	2	2	ND	0.5	ND
2013	1	0	0	0	0	1	0	ND
2014	24	11	5	0	16	8	3.7	B3,D8
2015	230	139	60	20	219	11	47.7	D8
2016	5	4	0	0	4	1	1.2	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

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	100%	ND	ND	ND	ND	ND
2013	0.0	100%	NA	NA	ND	ND	0	ND
2014	0.2	0%	80%	88%	20	55%	100%	ND
2015	0.1	100%	65%	100%	97	74.2%	92%	ND
2016	0.2	5%	100%	100%	ND	ND	0	ND

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	Clincally	Total			
2012	ND	0	0	1	1	ND	0.2	NA
2013	1	1	0	0	1	0	0.2	ND
2014	0	0	0	0	0	0	0	ND
2015	0	0	0	0	0	0	0	ND
2016	2	2	0	0	2	0	0.5	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 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	100%	ND	ND	ND	ND	ND
2013	NA	100%	100%	100%	ND	ND	ND	ND
2014	NA	0%	NA	NA	0	0%	ND	ND
2015	NA	0%	NA	NA	0	0%	ND	ND
2016	NA	0%	100%	100%	ND	ND	ND	ND

Source: ASU 2012-2016, RubeNS 2012-2016 and laboratory accreditation results 2012-2016
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) concluded that endemic transmission of both measles and rubella remained interrupted in Croatia in 2016. Considering the RVC's conclusions about the interrupted status of measles and rubella transmission in the country in 2014 and 2015, it is pleased to declare that Croatia has achieved elimination of measles and rubella. The RVC commends Croatia for this achievement, but emphasizes to the National Verification Committee (NVC) the need for more comprehensive data in the ASU, especially in regards to surveillance performance.
The RVC recommends the inclusion of measles and rubella genotyping data in future ASUs. The RVC urges national health authorities and the public health system to consider all feasible activities, as stated in WHO regional guidelines, to increase routine immunization coverage with both MRCV doses to levels required to achieve and maintain population immunity and to prevent reestablishment of endemic transmission.

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%