Myanmar 2017

Expanded Programme on Immunization (EPI)

FACT SHEET

World Health Organization
Regional Office for South-East Asia

Acronyms

AD	Auto disable
AEFI	Adverse events following immunization
AFP	Acute flaccid paralysis
BCG	Bacillus Calmette-Guérin vaccine
CES	Coverage evaluation survey
cMYP	Comprehensive multi-year plan
CRS	Congenital rubella syndrome
DHS	Demographic health survey
DT	Diphtheria tetanus toxoid, pediatric
DTP	Diphtheria – tetanus – pertussis vaccine
DTP-Hib-HepB	Pentavalent vaccine
DTP-Hib-HepB3	3rd dose pentavalent vaccine
EPI	Expanded programme on immunization
GDP	Gross domestic product
HCW	Health care worker
HepB	Hepatitis B vaccine
Hib	Haemophilus influenzae type b
HPV	Human papilloma virus
IgM	Immunoglobulin M
IPV	Inactivated poliovirus vaccine
JE	Japanese encephalitis
JE_Live-Atd	JE live attenuated vaccine
JRF	WHO UNICEF joint reporting form
LB	Live birth
M	Measles
MCV1	First dose measles containing vaccine
MCV2	Second dose measles containing vaccine
MICS	Multiple indicator cluster survey
MMR	Measles mumps rubella vaccine
MNT	Maternal and neonatal tetanus
MR	Measles rubella vaccine
NCIP	National committee on immunization practices
NID	National immunization day
NTAGI	National technical advisory group on immunization
NPEV	Non-polio enterovirus
NT	Neonatal tetanus
OPV	Oral poliovirus vaccine
bOPV	Bivalent OPV
tOPV	Trivalent OPV
PCV	Pneumococcal conjugate vaccine
SEAR	WHO South-East Asia Region
SIA	Supplementary immunization activities
SNID	Subnational immunization day
Td	Tetanus diphtheria toxoid; older children, adults
TT	Tetanus toxoid
TT2+	2 or more doses TT
VDPV	Vaccine derived poliovirus
VPD	Vaccine preventable diseases
WCBA	Women of child bearing age
WPV	Wild poliovirus

Contents

WHO South-East Asia Region

Myanmar: region and state level map

Impact of routine immunization

EPI history

- EPI launched in 1978
- OPV and MCV introduced in 1987
- AD syringes introduced in 2002
- HepB vaccine introduced in 2003
- MCV2 introduced partially in 2008 and made available nationwide in 2012
- DTP-Hib-HepB vaccine introduced in 2012
- MR vaccine introduced in 2015
- IPV introduced in 2015
- tOPV to bOPV switched on 29 April 2016
- PCV introduced in July 2016
- DHS in 2015-2016.

Source: cMYP 2017 -2021 and EPI/MOH

Table 1: **Basic information[1] 2016**

Total population	52,088,703
Live births	1,009,793
Children <1 year	945,877
Children <5 years	4,626,063
Children <15 years	14,493,639
Pregnant women	1,023,301
WCBA (15-49 years)	13,535,620
Neonatal mortality rate	26.4 (per 1,000 LB)
Infant mortality rate	39.5 (per 1,000 LB)
Under-five mortality rate	50.0 (per 1,000 LB)
Maternal mortality ratio	178 (per 100,000 LB)

[1]SEAR annual EPI reporting form, 2016 and WHO, World Health Statistics 2016

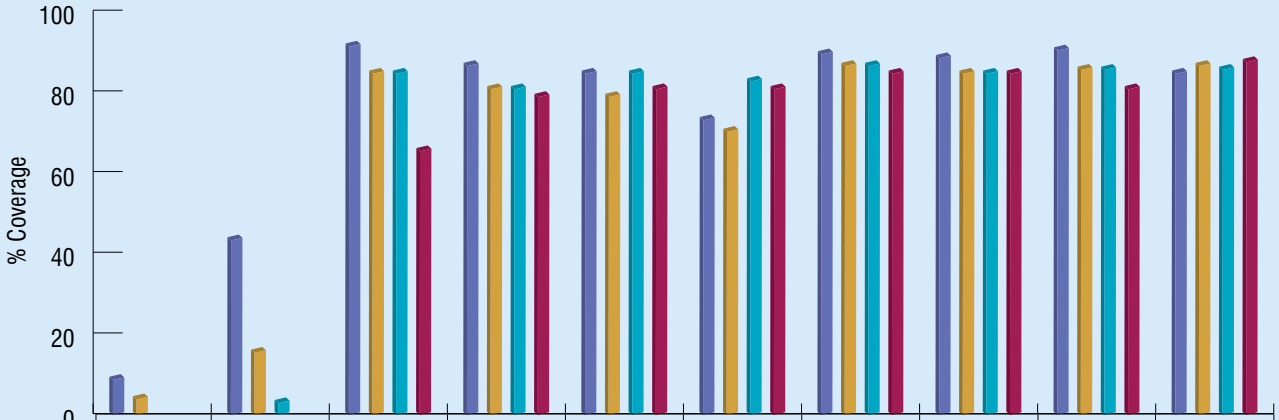
Division/Province/State/Region	17
Township/District	330/69
City/Town	396
Village	67,285
Population density (per sq. km)	88
Population living in urban areas	33%
Population using improved drinking-water sources	86%
Population using improved sanitation	77%
Total expenditure on health as % of GDP	1.8%
Births attended by skilled health personnel	78%
Neonates protected at birth against NT	87%

Table 2: **Immunization schedule, 2016**

Vaccine	Age of administration
BCG	Birth to 2 months
DTP-Hib-HepB	2 months, 4 months and 6 months
OPV	2 months, 4 months and 6 months
IPV	4 months
MR	9 months
Measles	18 months
TT	During pregnancy (at first contact and 4 weeks later)
Vitamin A	6 to 59 months
HepB	Birth

Source: WHO/UNICEF JRF, 2016

Figure 1: **National immunization coverage, 1980-2016**



	1980	1985	1990	1995	2000	2005	2010	2014	2015	2016
BCG	9	45	95	90	88	76	93	92	94	88
DTP3	4	16	88	84	82	73	90	88	89	90
OPV		3	88	84	88	86	90	88	89	89
MCV1			68	82	84	84	88	88	84	91

Source: WHO/UNICEF estimates of national immunization coverage, July 2017 revision

Table 3: **Immunization system highlights**

cMYP for immunization	2017 -2021
NTAGI	fully functional
Spending on vaccines financed by the government	6%
Spending on routine immunization programme financed by the government	24%
Updated micro-plans that include activities to improve immunization coverage	no data
National policy for health care waste management including waste from immunization activities	no
National system to monitor AEFI	in place
Most recent EPI CES	Demographic and Health Survey 2015-2016
≥80% coverage for DTP-Hib-HepB3	290 districts (88%)
≥90% coverage for MCV1	249 districts (75%)
≥10% drop-out rate for DTP-Hib-HepB1 to DTP-Hib-HepB3	34 districts (10%)
Source: WHO/UNICEF JRF, 2016	

Figure 2: **DTP3 coverage[1], diphtheria and pertussis cases[2], 1980-2016**

[1]*WHO/UNICEF estimates of national immunization coverage, July 2017 revision*
[2]*WHO vaccine-preventable diseases: monitoring system 2016*

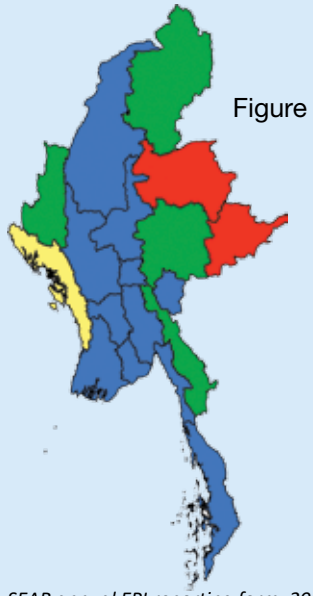
Table 4: **Reported cases of vaccine preventable diseases, 2011-2016**

Year	Polio	Diphtheria	Pertussis	NT (% of all Tetanus)	Measles	Rubella	Mumps	JE	CRS
2011	0	7	5	32 (18%)	2,046	103	ND	20	ND
2012	0[a]	19	2	29 (39%)	2,175	21	ND	14	ND
2013	0	38	14	39 (53%)	1,010	23	ND	3	ND
2014	0	29	5	32 (44%)	122	30	ND	50	ND
2015	0[b]	87	5	30 (ND)	6	34	ND	113	ND
2016	0	136	2	21 (11%)	266	10	ND	393	ND

[a]*Excludes one type 1 VDPV* [b]*Excludes two type 2 cVDPVs*
Source: WHO/UNICEF JRF (multiple years) *ND=No data*

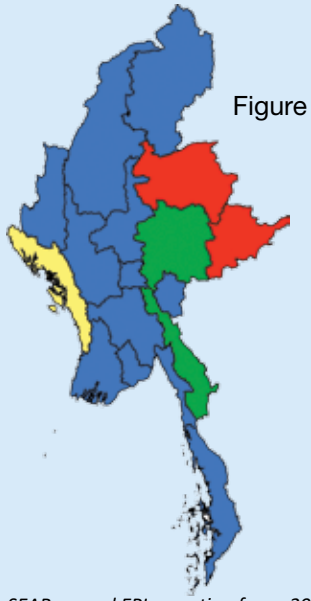
DTP-Hib-HepB3 coverage by province

Figure 3: **2015**

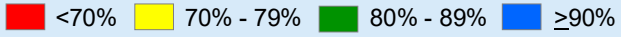


Source: SEAR annual EPI reporting form, 2015 (administrative data)

Figure 4: **2016**

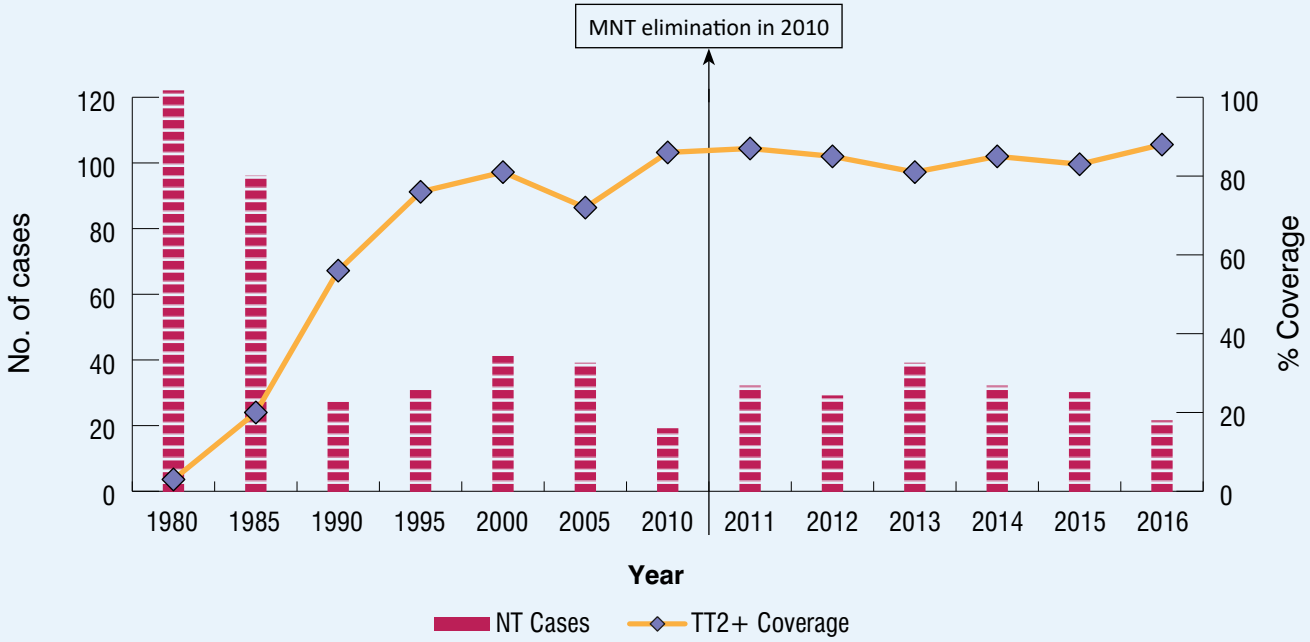


Source: SEAR annual EPI reporting form, 2016 (administrative data)



Maternal and neonatal tetanus elimination is sustained

Figure 5: **TT2+ coverage[1] and NT cases[2], 1980-2016**



[1] WHO/UNICEF JRF, Country official estimates, 1980-2016
[2] WHO vaccine-preventable diseases: monitoring system 2016

Polio-free status is maintained

Table 5: **AFP surveillance performance indicators, 2011-2016**

- Last polio case due to indigenous WPV reported from Rakhine province in February 2000.
- Last polio case due to imported WPV reported from Rakhine province in May 2007.

Indicator	2011	2012	2013	2014	2015	2016
AFP cases	418	457	404	389	336	466
Wild poliovirus confirmed cases	0	0	0	0	0	0
Compatible cases	0	0	0	0	0	0
Non-polio AFP rate[1]	2.02	2.21	1.91	1.82	2.34	3.38
Adequate stool specimen collection percentage[2]	94%	97%	95%	96%	93%	96%
Total stool samples collected	834	916	808	772	672	932
% NPEV isolation	14	14	11	13	13	12
% Timeliness of primary result reported[3]	92	93	94	94	95	96

[1]Number of discarded AFP cases per 100,000 children under 15 years of age.
[2]Percent with 2 specimens, at least 24 hours apart and within 14 days of paralysis onset.
[3]Results reported within 14 days of sample received at laboratory.

Non-polio AFP rate by province

Figure 6: **2015**

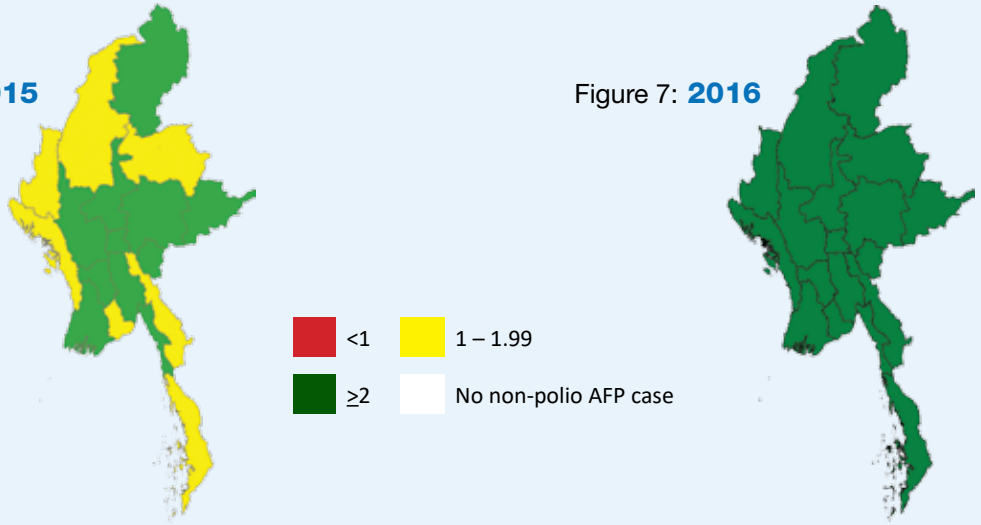


Figure 7: **2016**

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Table 6: **OPV SIAs**

Year	Antigen	Geographic coverage	Target age	Target population		Coverage (%)	
				Round 1	Round 2	Round 1	Round 2
2002	OPV	NID	<5 years	6,251,093		97	97
2003	OPV	SNID	<5 years	771,081		95	99
2005	OPV	SNID	<5 years	321,850		99	100
2006	OPV	SNID	<5 years	2,037,606		97	97
2007	OPV	SNID	<5 years	2,416,960		102	99
2007	OPV	NID	<5 years	7,207,399		98	98
2008	OPV	SNID	<5 years	1,825,117		99	-
2009	OPV	NID	<5 years	7,394,415		98	100
2010	OPV	SNID	<5 years	2,229,394		98	100
2011	OPV	SNID	<5 years	2,925,709		98	99
2012	OPV	SNID	<5 years	281,026		99	101
2013	OPV	SNID	<5 years	335,860		97	97
2015	OPV	SNID	<5 years	367,972		97	-
2016	OPV	Mop-up SNID	<5 years	3,017,377		96	99
2016	OPV	Mop-up NID	<5 years	4,908,837		99	99

Source: WHO/UNICEF JRF, (multiple years)

Adequate stool specimen collection % by province

Figure 8: **2015**

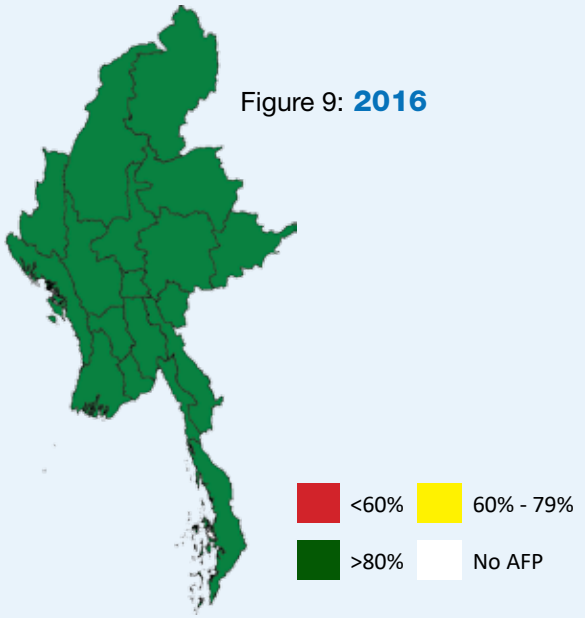
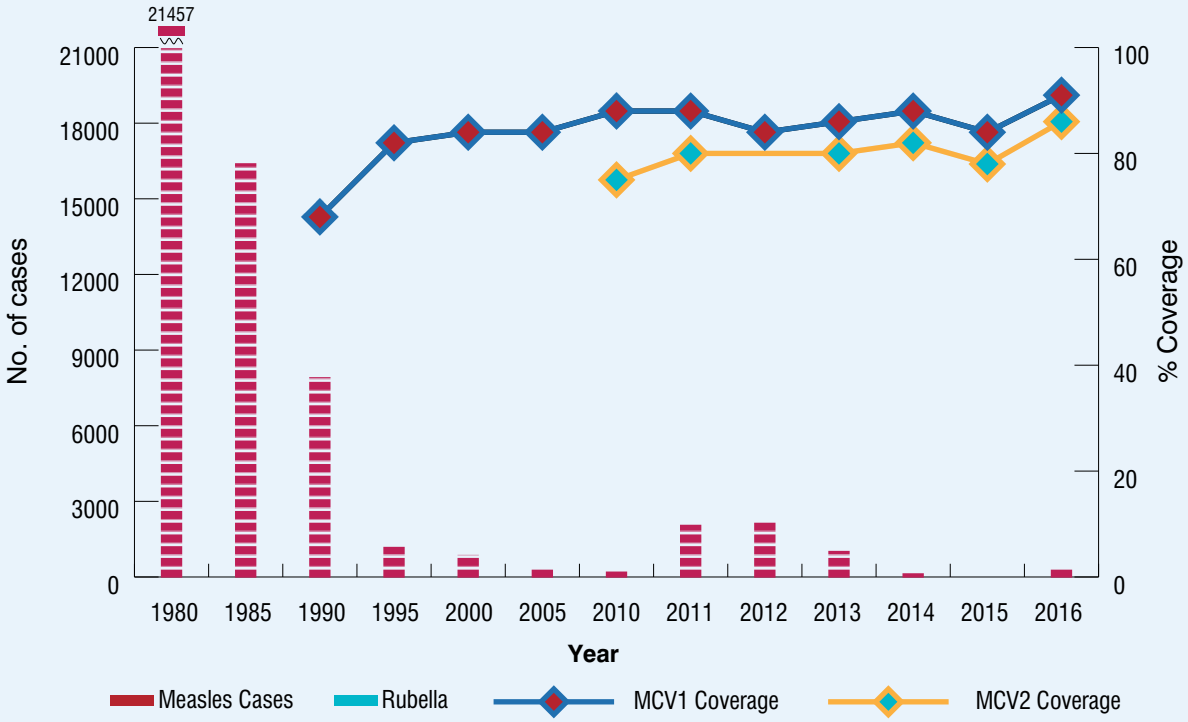


Figure 9: **2016**

Towards measles elimination and rubella/CRS control

Figure 10: **MCV1 and MCV2 coverage[1], measles and rubella cases[2], 1980-2016**



[1]*WHO/UNICEF estimates of national immunization coverage, July 2017 revision*
[2]*WHO vaccine-preventable diseases: monitoring system 2016*

Table 7: **MCV SIAs**

Year	Antigen	Geographic Coverage	Target group	Target	Coverage %
2007	M	Nationwide	9 to 59 months	6,056,000	94
2012	M	Follow-up	9 to 59 months	6,432,064	97
2015	MR	Nationwide	9 months to 15 years	13,958,963	94

Source: JRF (multiple years)

MCV1 coverage by province

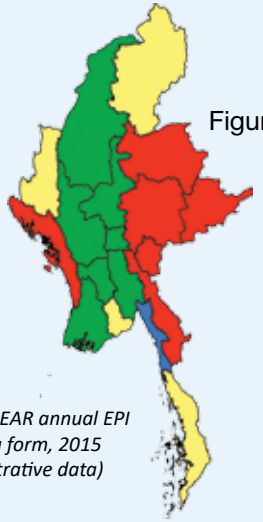


Figure 11: **2015**

Source: SEAR annual EPI reporting form, 2015 (administrative data)

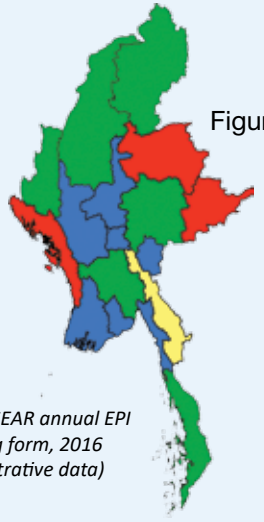


Figure 12: **2016**

Source: SEAR annual EPI reporting form, 2016 (administrative data)

MCV2 coverage by province

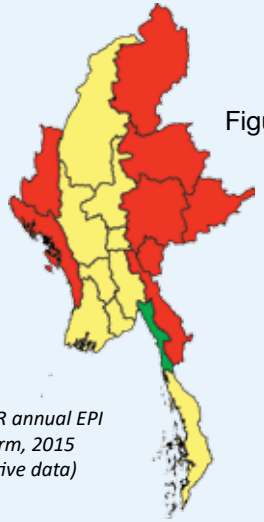


Figure 13: **2015**

Source: SEAR annual EPI reporting form, 2015 (administrative data)

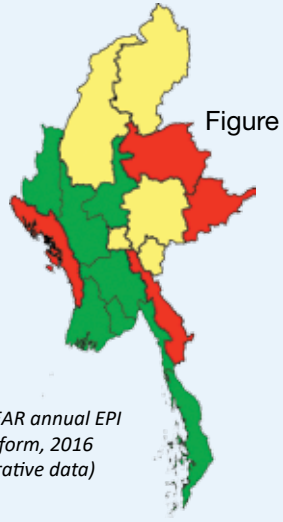
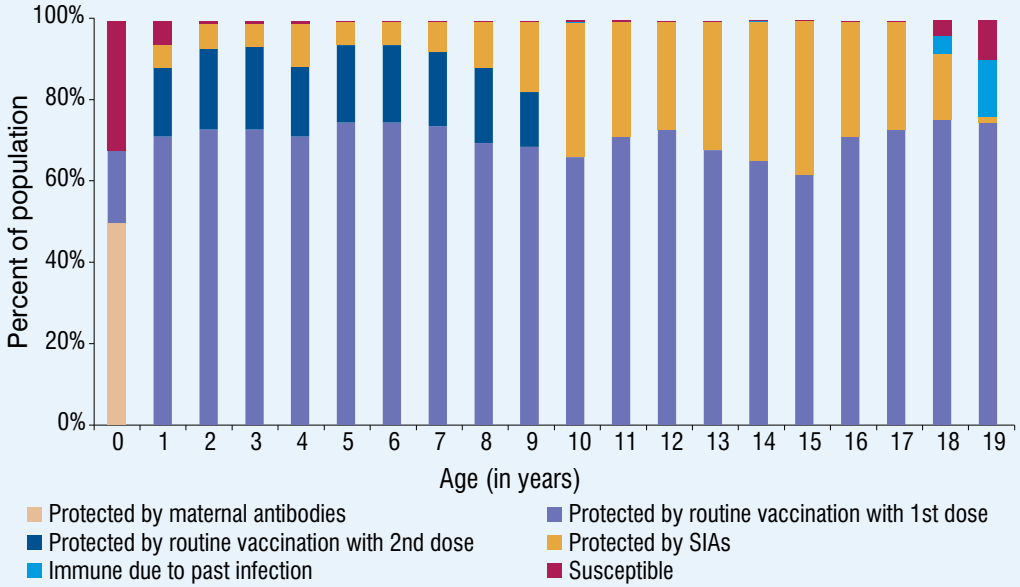


Figure 14 : **2016**

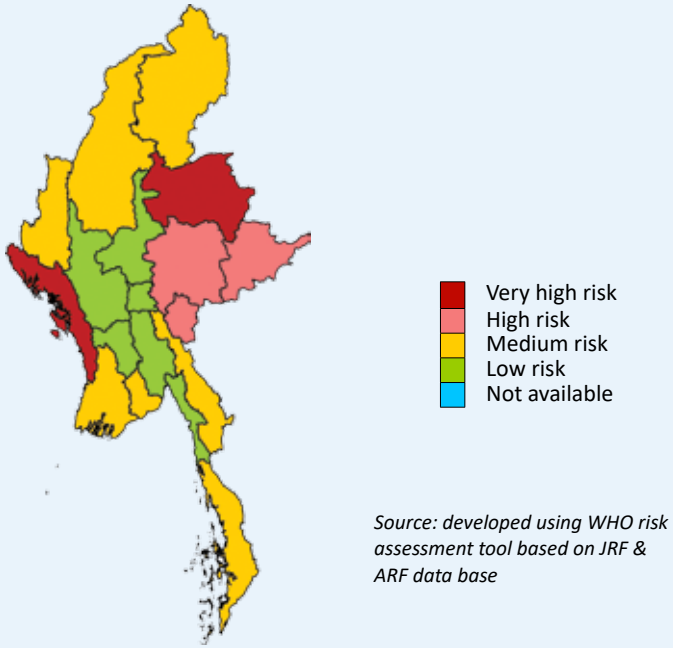
Source: SEAR annual EPI reporting form, 2016 (administrative data)

Figure 15: **Immunity against measles - immunity profile by age in 2016***



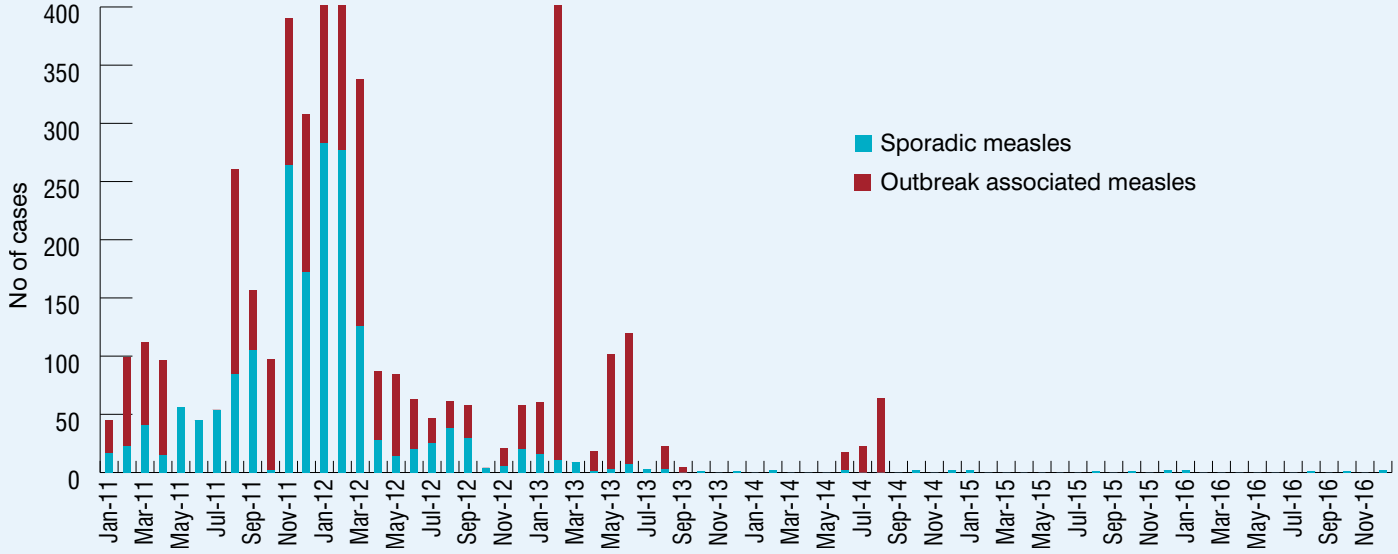
**Modeled using MSP tool ver 2 assuming the schedule and MCV coverage remain unchanged and no SIAs in 2016*

Figure 16: **Sub-national risk assessment - measles and rubella**



Source: developed using WHO risk assessment tool based on JRF & ARF data base

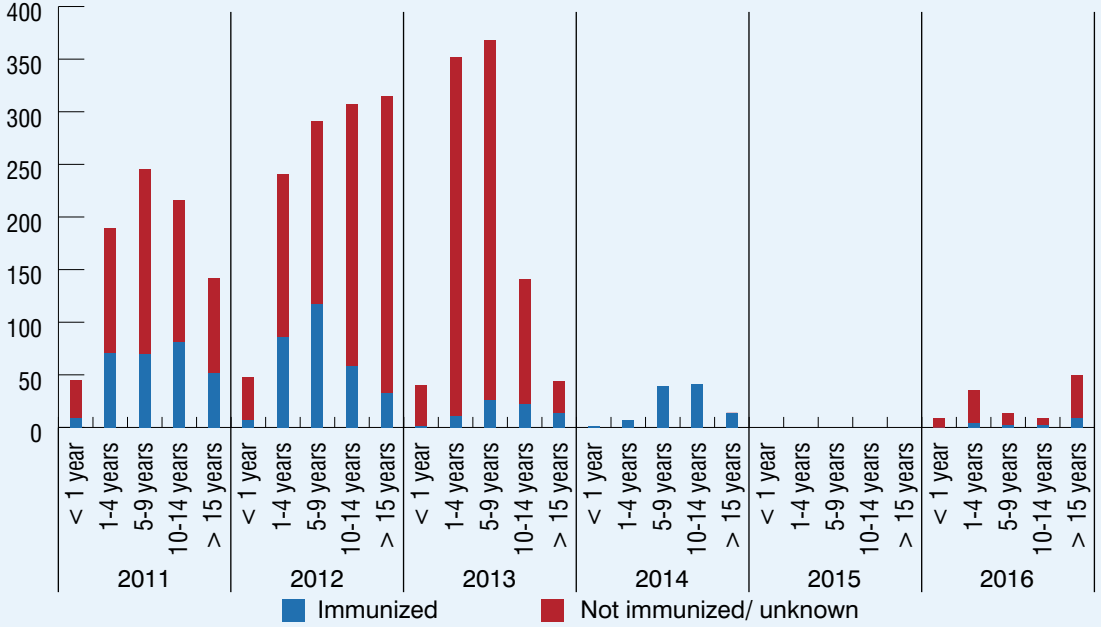
Figure 17: **Sporadic and outbreak associated measles cases* by month 2011-2016**



**Includes laboratory confirmed and epidemiologically linked cases*

Source: SEAR Monthly VPD reports

Figure 18: **Immunization status of confirmed (laboratory and EPI linked) measles outbreak associated cases, by age, 2011-2016**



Source: SEAR annual EPI reporting form (2011-2016)

Table 8: **Surveillance performance indicators for measles and rubella, 2012-2016**

Year	No. of suspected measles	Case classification (number)						Indicators					
		Measles			Rubella								
		Lab-confirmed	EPI-linked	Clinically-confirmed	Lab-confirmed	EPI-linked	Discarded non-measles non-rubella cases	Annual incidence of confirmed measles cases per million total population	Annual incidence of confirmed rubella cases per million total population	Proportion of all suspected measles and rubella cases that have had an adequate investigation initiated within 48 hours of notification	Discarded non-measles non-rubella incidence per 100,000 total population	Proportion of provinces reporting at least two discarded non-measles non-rubella cases per 100,000 total population	Proportion of sub-national surveillance units reporting to the national level on time
Target ➔								-	-	*80%*	*2*	*80%*	*80%*
2012	2,349	1,125	908	24	20	0	170	33.37	0.34	ND	0.34	15	97
2013	1,217	111	2	8	20	3	183	16.24	0.37	ND	0.34	16	96
2014	479	25	96	0	28	3	327	1.94	0.48	46	0.57	19	92
2015	243	6	0	0	33	1	203	0.12	0.68	ND	0.42	ND	ND
2016	586	191	61	13	10	0	311	5.14	0.19	ND	0.63	0	96

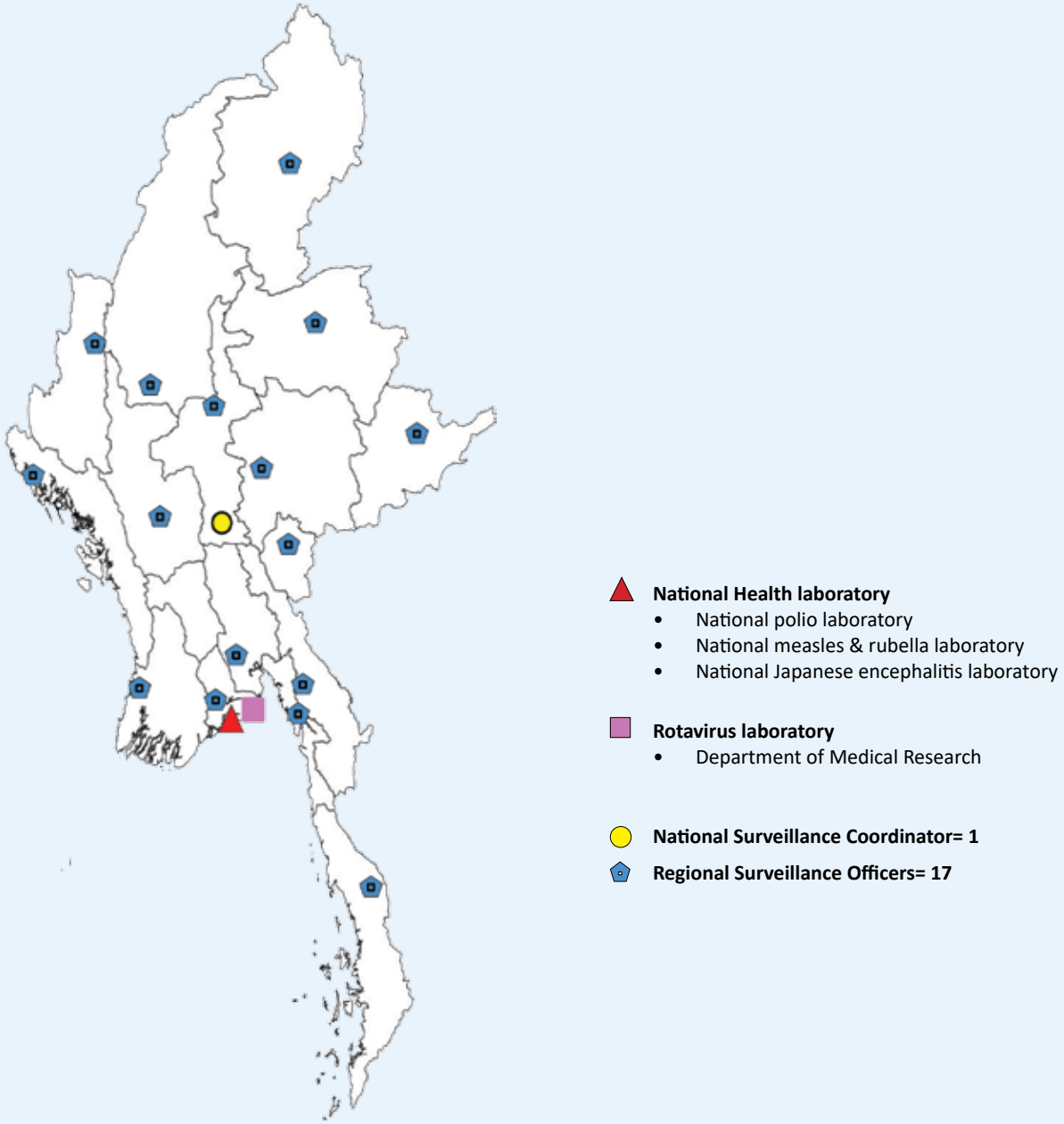
Source: SEAR annual EPI reporting form (2012-2016) *ND=No data*

Table 9: **Performance of laboratory surveillance, 2012-2016**

Year	Serum specimen collected from suspected measles cases	Serum specimen received in laboratory within 5 days of collection	Specimen positive for measles IgM		Specimen positive for rubella IgM		% Results within 4 days of receipt	% Confirmed cases tested for viral detection	Genotypes detected	
	No (%)	No (%)	No.	%	No.	%			Measles	Rubella
2012	1,080 (92%)	1,145 (79%)	1,182	83	20	10	NA	100	D9	ND
2013	253 (100%)	219 (65%)	110	33	23	11	NA	100	ND	ND
2014	282 (100%)	195 (69%)	24	9	29	11	52	100	ND	ND
2015	244 (100%)	186 (76%)	6	3	34	14	93	100	ND	ND
2016	553 (94%)	530 (96%)	196	35	12	2	100	8	D8, H1	

Source: SEAR annual EPI reporting form (2012-2016) *ND=No data*

Figure 19: **Network of WHO supported surveillance medical officers and laboratories for VPD surveillance**



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