National Verification Committee for elimination of Measles , Rubella and CRS Myanmar

NVC Secretariats

MEASLES & RUBELLA INITIATIVE

Presentation outline

- General information
- NVC report
- Updated data for 2017
- Lesson learned with sporadic OB
- Done in 2016
- Way forward

MEASLES & RUBELLA INITIATIVE

Background Information

- Total Population - 52,088,703
- live birth - 1,009,793
- under-1 - 945,877
- under-5 - 4,626,063
- Number of children <15 years – 14,493639
- Number of Districts(townships) - 330

MEASLES & RUBELLA INITIATIVE

Elimination of measles , and control of rubella and CRS in Myanmar

Vision:- Myanmar will be a country where there will be no cases of indigenous measles, rubella and congenital rubella syndrome

Mission:- Achieve elimination of measles and control of rubella and congenital rubella syndrome in Myanmar through appropriate strategies

Goal:- Eliminate measles, rubella and CRS by 2020

MEASLES & RUBELLA INITIATIVE

Elimination of measles and control of rubella and CRS

Immunization

- 1987- Routine immunization
- 2002, 2003 and 2004- Sub-national measles campaigns
- 2007 and 2012- National measles campaign targeting children 9 months to 5 years of age conducted in (>94% coverage)
- 2008- Measles 2nd dose introduced in RI
- 2015- National MR campaign targeting children 9 months to under 15 years of age conducted (94% coverage)
- April 2015- Rubella vaccine introduced as MR at MCV1

Surveillance

- 2010- Measles and Rubella case-based surveillance started
- 2016 December - CRS surveillance started.

MEASLES & RUBELLA INITIATIVE

Chair and Members of NVC

No	Name	Designation	Remark
1	Dr. Ye Hla	Director, Retd. DMR	Chairman
2	Professor Dr. Nay Win	Professor and Head (Retired), Department of Medicine, University of Medicine(1), Yangon	Member
3	Professor Dr. Ye Myint Kyaw	Professor and Head, Department of Paediatric , University of Medicine (1), Yangon	Member
4	Professor Dr Khin Nyo Thein	Professor and Head Department of Paediatric , University of Medicine (2), Yangon	Member
5	Dr Khin Ye Oo	Deputy Director (Retired), National Health Laboratory,	Member
6	Dr Than Htain Win	Deputy Director (Retired), Department of Public Health	Member
7	CEPI , CEU , NHL	CEPI , CEU , NHL	Secretary

NVC meetings

- First NVC meeting - 31st July 2016
  - Agreed on TOR and indicators to be monitored.
  - Endorsed draft NVC guideline
  - Gave some recommendations on National plan for Measles elimination and Rubella and CRS control
- Second NVC meeting- 11th Feb 2017
  - Endorsed the National strategic plan for Measles , Rubella and CRS elimination (2017-2020)
  - Reviewed the Measles , Rubella and CRS elimination status of Myanmar and prepared the NVC report

- Third NVC meeting- 2nd June 2017
  - Review the Measles , Rubella and CRS elimination status of Myanmar
  - Present the National strategic plan for Measles , Rubella and CRS elimination (2017-2020) to NVC members

MEASLES & RUBELLA INITIATIVE

Key Measles Rubella related activities-2016

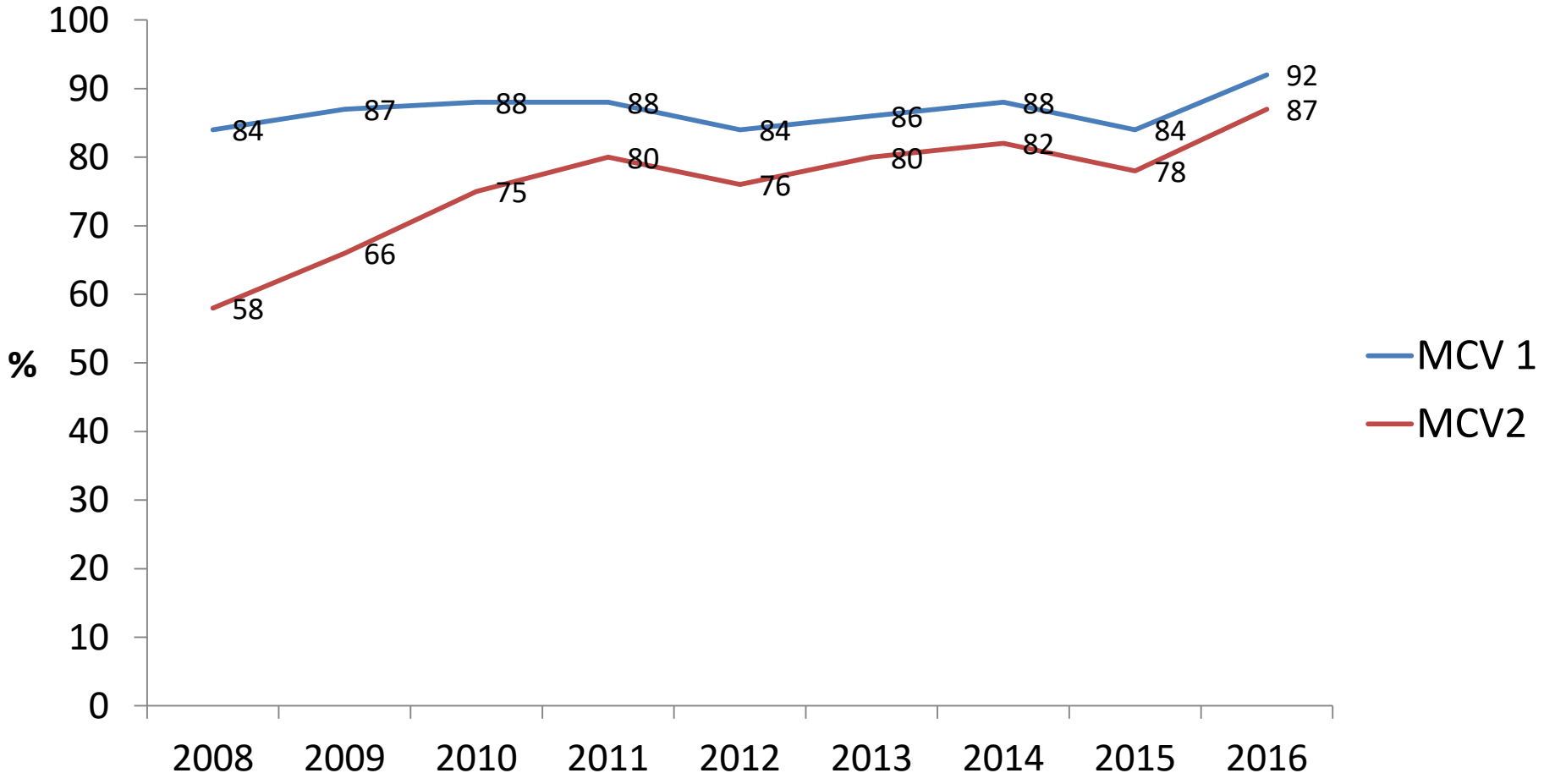
- Measles and Rubella surveillance guideline- revised
- Case definition for suspected Measles/Rubella case- changed from "Fever with rash and 1 of the 3 Cs (cough, conjunctivitis, coryza)" to "Fever with Rash (non-vesicular)"
- CRS surveillance in 5 sentinel hospitals- established in Dec 2016

MEASLES & RUBELLA INITIATIVE

Progress towards five line of evidences

MEASLES & RUBELLA INITIATIVE

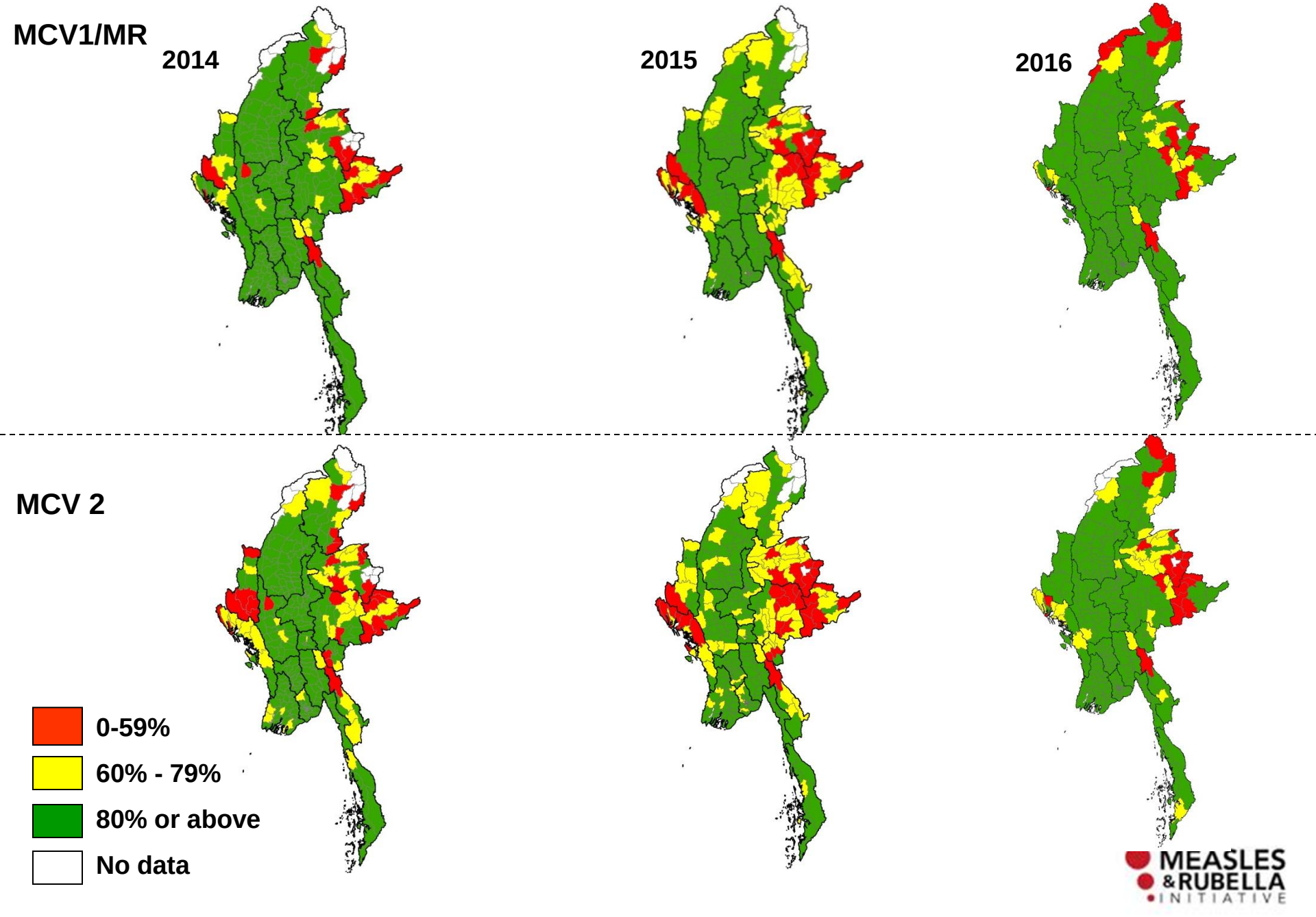
MCV 1 and MCV 2 coverage (2008 -2016) (administrative data)



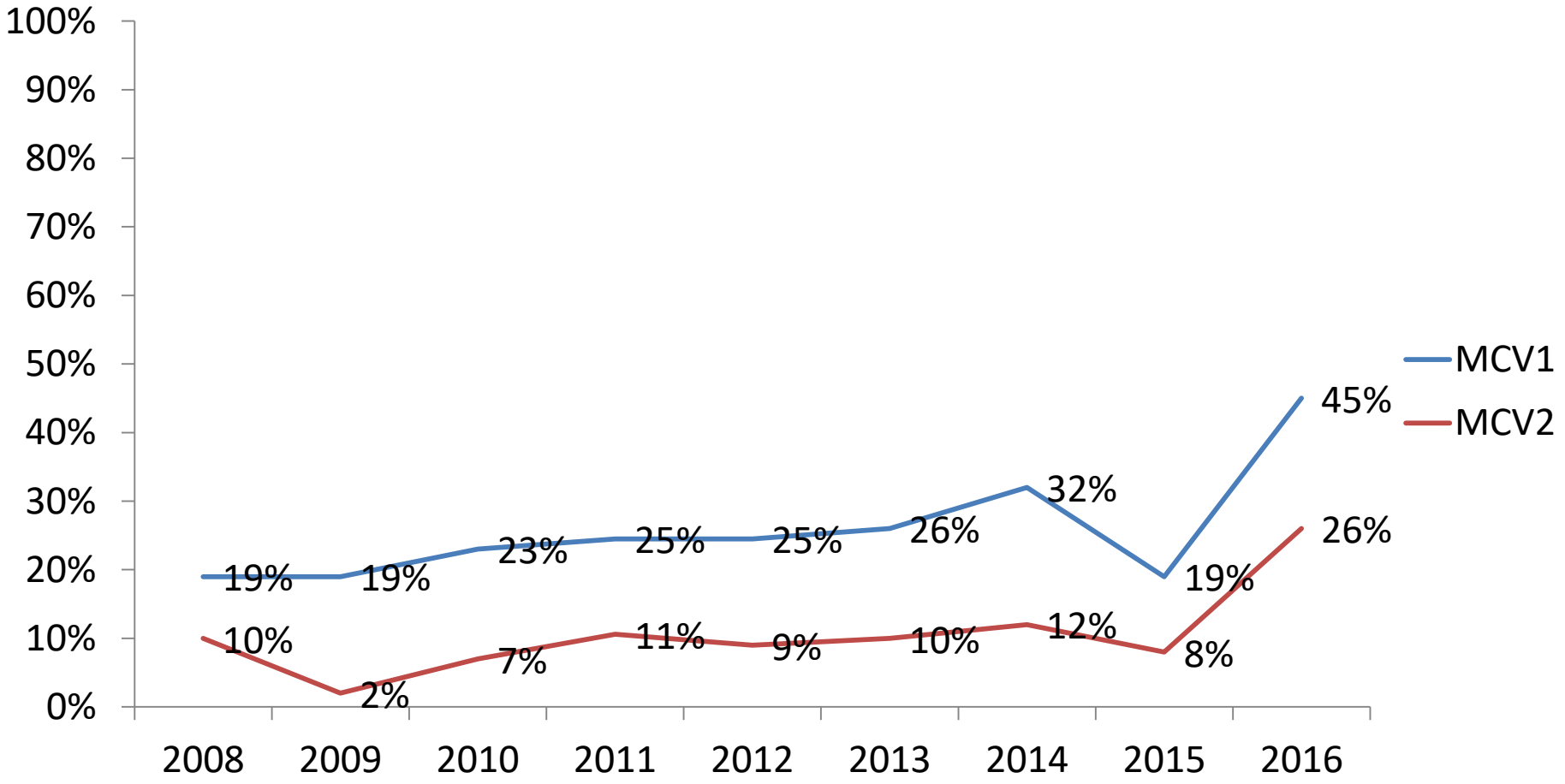
The second dose of Measles vaccine (MCV2) will be replaced by MR in June 2017. (NCIP meeting, Oct 2016)

MEASLES & RUBELLA INITIATIVE

Routine Measles Coverage by Township 2014-2016



Percentage of townships with > 95 % coverage of MCV1 , MCV2 (2008 -2016)



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MCV supplementary immunization activities

Year	Vaccine, geographic coverage, target group	Target	Coverage Achieved
2002 2003 2004	Subnational small scale measles campaign	1,792,980 2,502,969 1,374,648	89% 93% 84%
2007	Measles, nationwide, 9 months to 59 months	6,056,000	94%
2012	Measles, follow up campaign, 9 months to 59 months	6,432,064	97%
2015	MR campaign, 9 months to 15 years	13,958,963	94%

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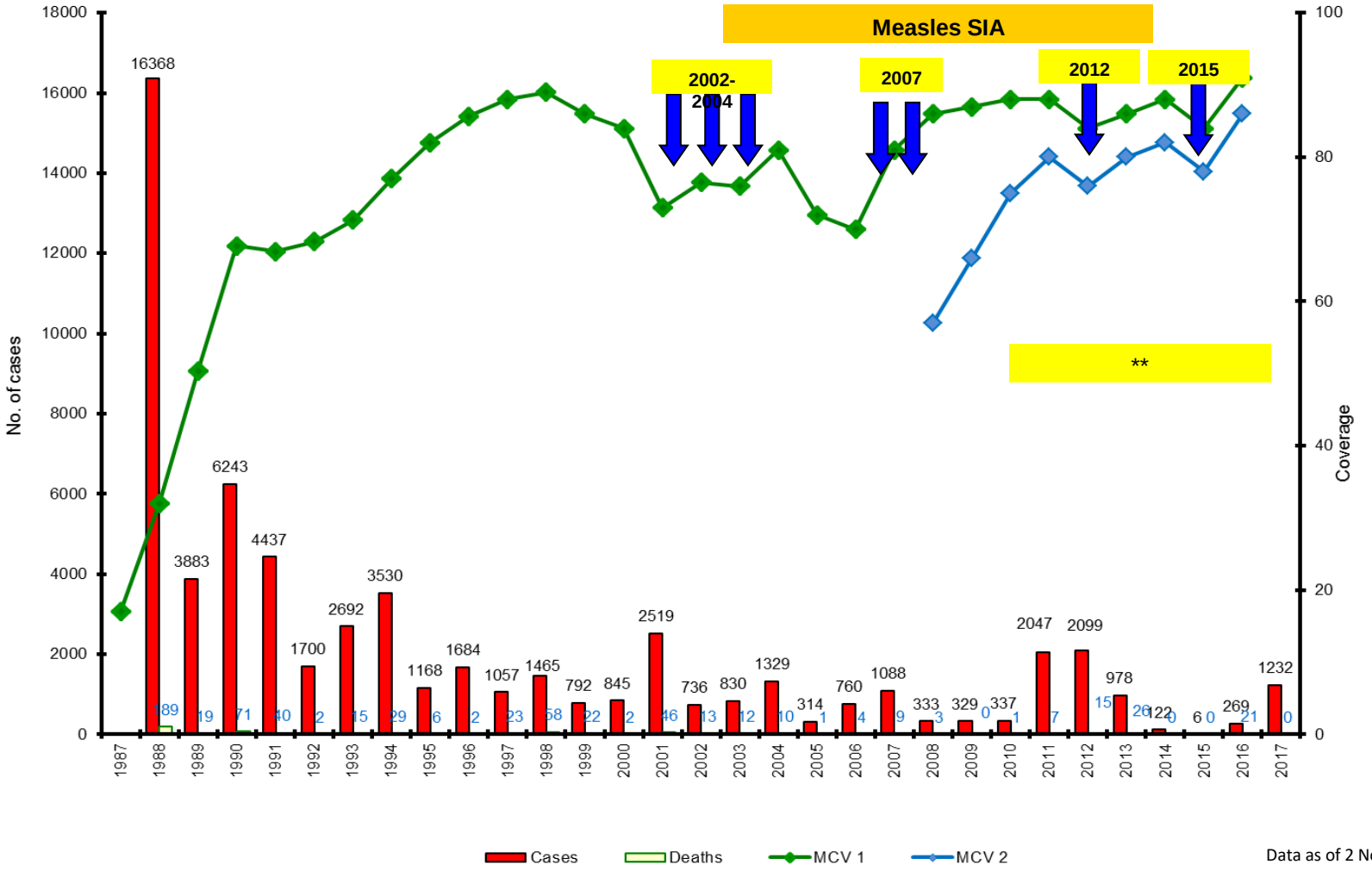
Coverage of measles rubella vaccine and cases load since introduction of the vaccine, including SIA

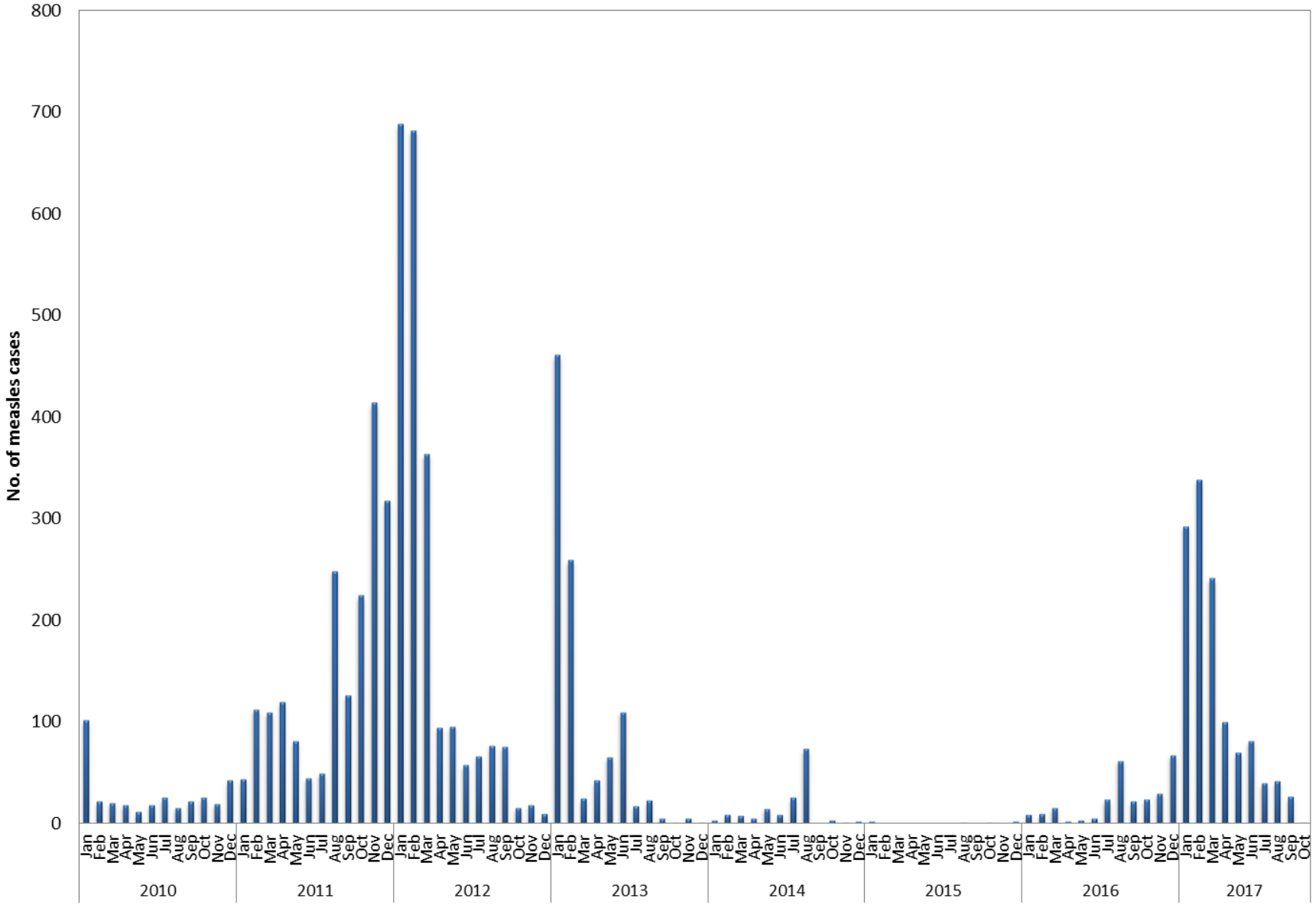


Data as of 2 Nov 2017

** Laboratory confirmed measles cases only from Measles case based surveillance

MEASLES & RUBELLA INITIATIVE

Epidemic curve for Measles Cases 2010-2017



Data as of 2 Nov 2017

MEASLES & RUBELLA INITIATIVE

Measles Cases by State and Region
Myanmar, 2014-2017*

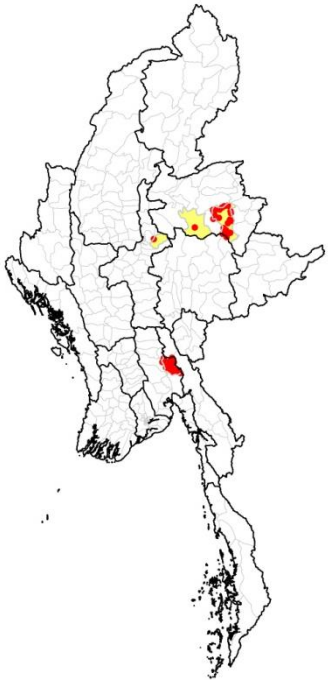
2014: 122 cases

Total no. of cases = 122

Total no. of outbreaks = 2

Measles/Rubella mixed outbreak = 1

Total no. of Deaths = 0



2015: 6 cases

Total no. of cases = 6

Total no. of outbreaks = 0

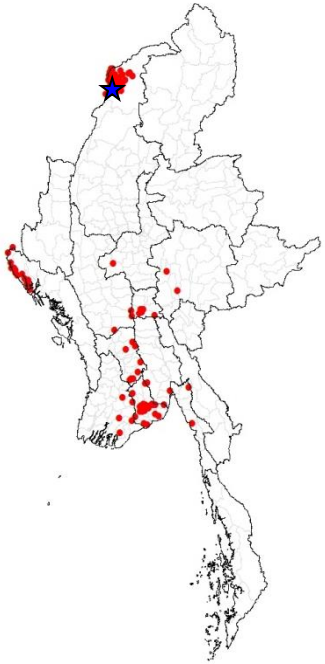
Total no. of Deaths = 0

2016: 266 cases

Total no. of cases = 266

Total no. of outbreaks = 8

Total no. of Deaths = 21

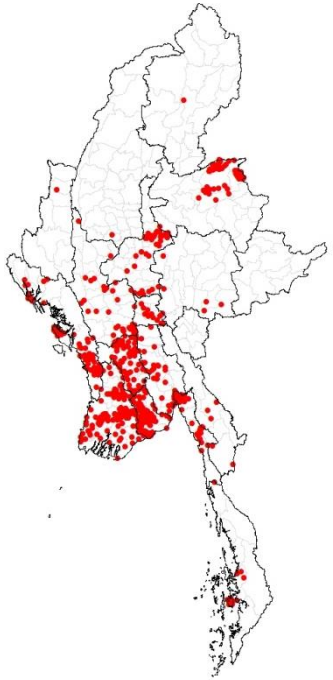


2017: 1232 cases

Total no. of cases = 1232

Total no. of outbreaks = 19

Total no. of Deaths = 0



1 Dot = 1 case (Routine case based)

1 Dot = 5 cases (Outbreak)

Deaths

Data as of 2 Nov 2017

MEASLES & RUBELLA

Data as of 2 Nov 2017*

Age distribution of Measles Outbreaks (2016)

State/ Region	No.	Township	Group1 0-11 Months	Group2 1-4 Years	Group3 5-9 Years	Group4 10-14 Years	Group5 15+ Years	Total
BAGO(EAST)	1	KYAUKTAGA		1	2	1	0	4
NAYPYITAW	2	LEWAY	5				0	5
RAKHINE	3	KYAUKPYU				1	1	2
	4	MAUNGDAW		6	1		1	8
	5	RATHEDAUNG		3	3	1	0	7
SAGAING	6	LAHE	1	15	6	4	12	38
YANGON	7	DAGON					23	23
	8	HLAINGTHAYAR	3	13	2	3	7	28
	9	NORTH OKKALAPA					7	7
Grand Total			9	38	14	10	51	122

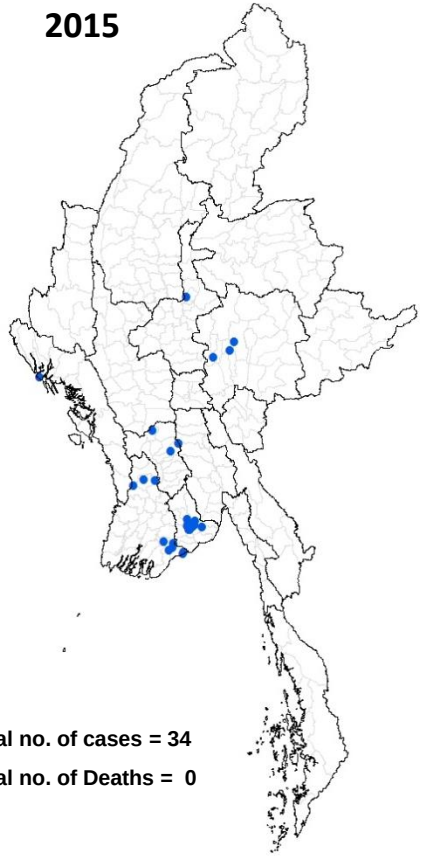
Age distribution of Measles Outbreaks (2017)

State/ Region	No.	Township	Group1 0-11 Months	Group2 1-4 Years	Group3 5-9 Years	Group4 10-14 Years	Group5 15+ Years	Total
AYEYARWADY	1	NGAPUTAW		4	1			5
BAGO(EAST)	2	KYAUKTAGA	1		6	1		8
BAGO(WEST)	3	PAUKKHAUNG			1		9	10
MAGWAY	4	AUNGLAN					12	12
MANDALAY	5	PYIGYI TAGON	5	7	1			13
MANDALAY	6	PYIN OO LWIN(MYAYMO)					20	20
MON	7	BILIN					2	2
MON	8	KYAIKHTO	3	2			20	25
NAYPYITAW	9	PYINMANA	2			2	4	8
RAKHINE	10	KYAUKPYU	2	1			12	15
RAKHINE	11	SITTWAY		1	1		5	7
RAKHINE	12	TAUNGUP					8	8
RAKHINE	13	THANDWE	4	14	6	3	6	33
SHAN(NORTH)	14	LAUKAING		14	14	3		31
SHAN(NORTH)	15	MUSE	2	16	7			25
SHAN(NORTH)	16	THEINNI	1	4	2	1	1	9
YANGON	17	HLAINGTHAYAR	41	73	17	5	38	174
YANGON	18	NORTH OKKALAPA		6	3	1	1	11
YANGON	19	TAIKKYI	4	3			2	9
Grand Total			**65**	**145**	**59**	**16**	**140**	**425**

Data as of 2 Nov 2017

MEASLES & RUBELLA INITIATIVE

Rubella Cases by State and Region
Myanmar, 2014-2016



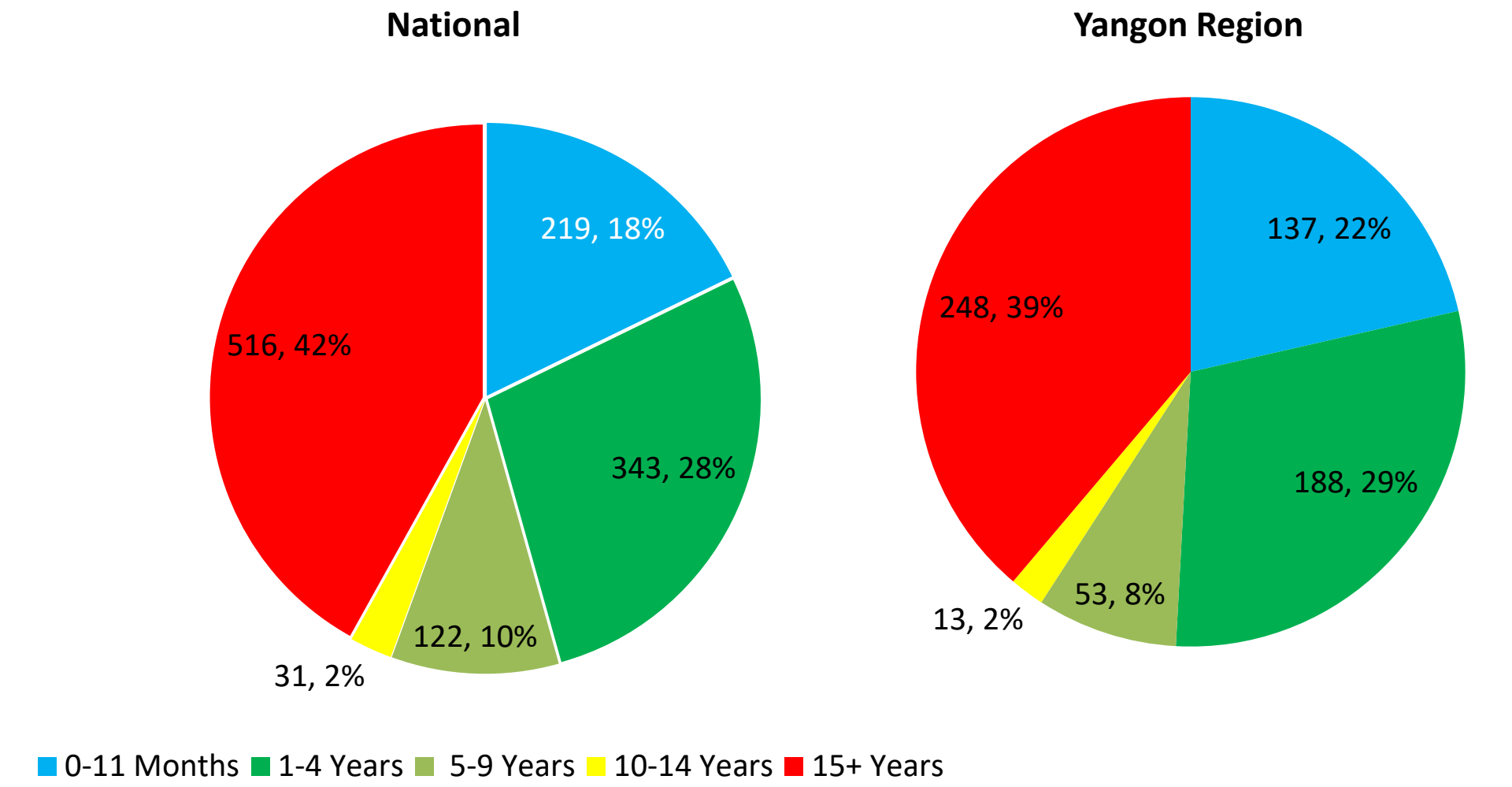
1 Dot = 1 case (Routine case based)

Data as of 2 Nov 2017

MEASLES & RUBELLA

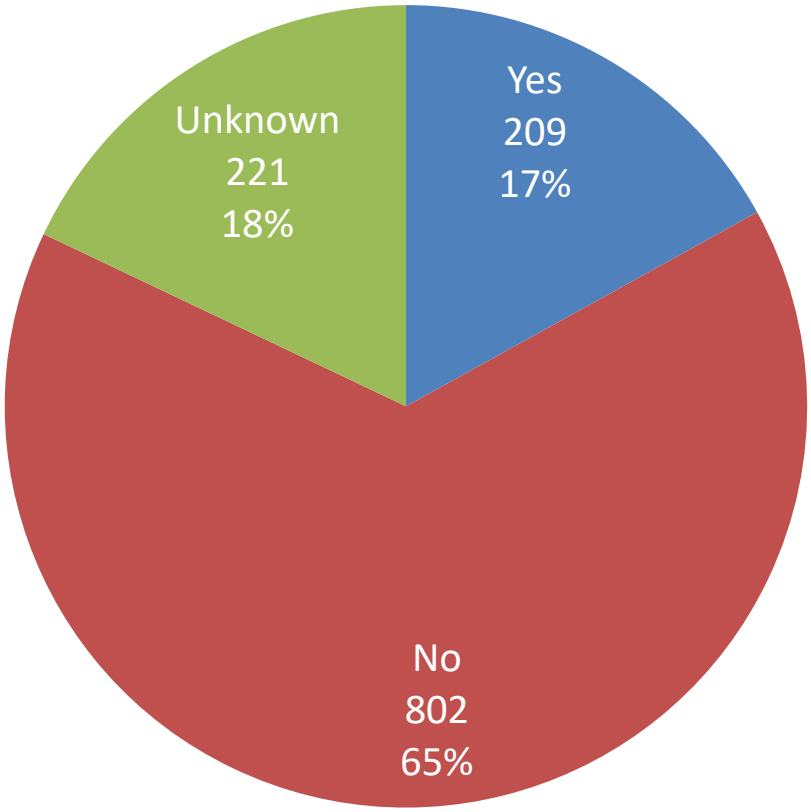
Data as of 23 July 2016

Age Distribution of Measles Cases in Myanmar, 2017



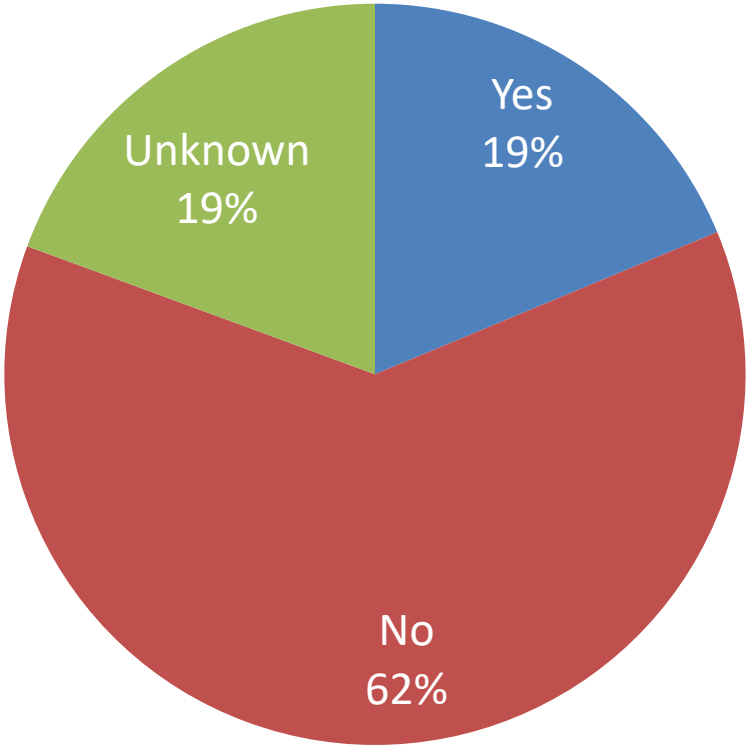
MEASLES & RUBELLA INITIATIVE

Immunization Status of Measles Cases , 2017(n=1232)



MEASLES & RUBELLA INITIATIVE

Immunization Status of Measles Cases , 2017 (exclude under 9 months) (n=1073)

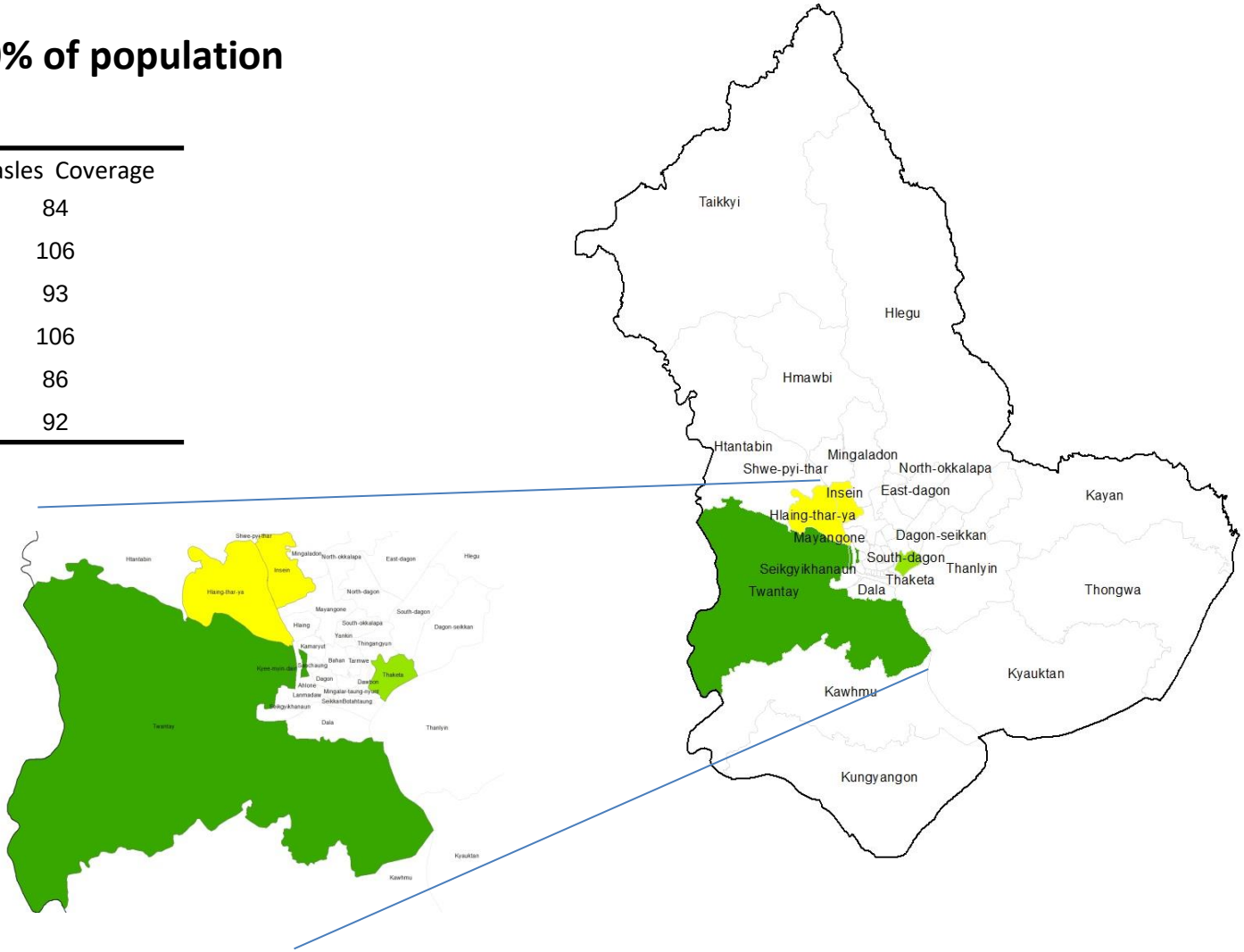


MEASLES & RUBELLA INITIATIVE

Measles Immunization Coverage, Yangon 2017 (6-20 Feb 2017)

Targeting PLUS 20% of population

Township	Measles Coverage
Insein	84
Twantay	106
Thaketa	93
Kyee-myin-dain	106
Hlaing-thar-ya	86
Total	92



- **< 80%**
- **80% - 90%**
- **91% - 94%**
- **95% or above**

MEASLES & RUBELLA INITIATIVE

1.Evidence of interruption of endemic measles or rubella virus transmission (as of 31 Dec 2016)

- Date of last case of measles infection
  - Endemic
  - Import/Import related
- Date of last case of indigenous rubella infection
  - Endemic
  - Import/Import related
- Date of last reported measles/rubella outbreak
  - Date
  - Number of cases
  - Imported/Import related
  - Outbreak response activities

MEASLES & RUBELLA INITIATIVE

2.Genetic and molecular evidence- Measles

Year→ Genotype	2009	2010	2011	2012	2013	2014	2015	2016	2017
D9	2	6	18	5					
D8								8	
H1								2	27

	Laboratory confirmed	Epidemiologic link	Clinical Compatible
Endemic			
Unknown			
Imported			
Import-related			

MEASLES & RUBELLA INITIATIVE

2.Genetic and molecular evidence- rubella

Year→ Genotype	>2010	2010	2011	2012	2013	2014	2015	2016
		NA	NA	NA	NA	NA	NA	NA

Measles Cases in 2017 (as of Nov 2)

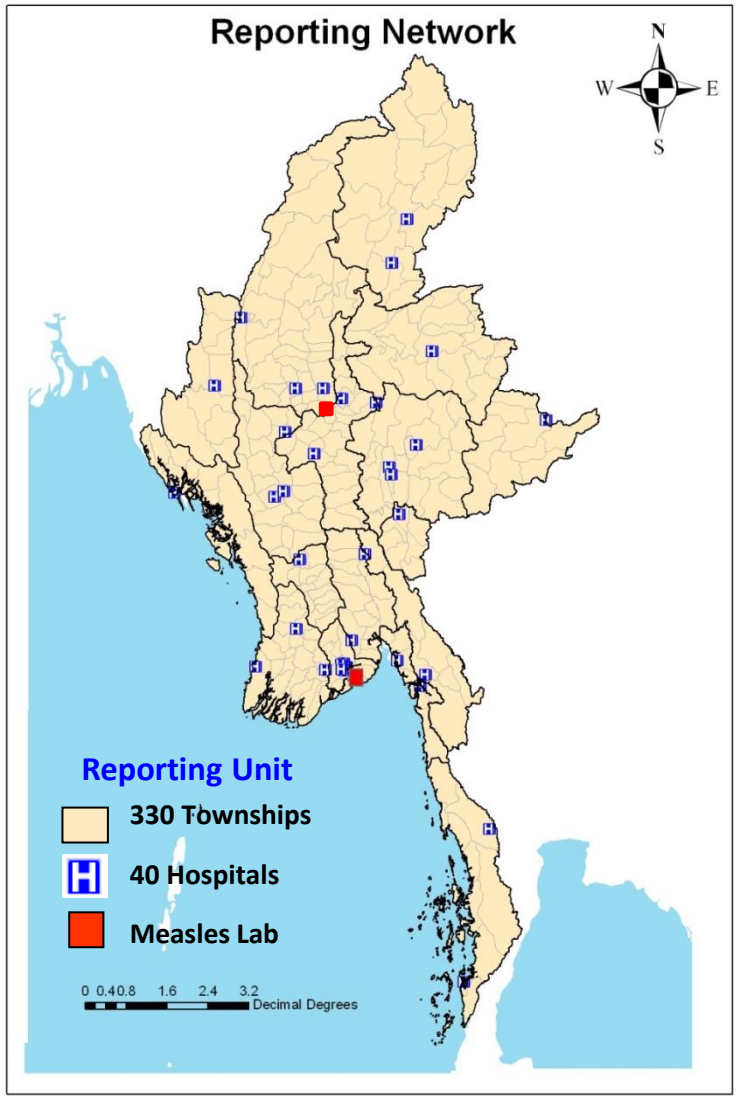
	Laboratory confirmed	Epidemiologic link	Clinical Compatible
Endemic	990	177	68
Unknown			
Imported			
Import-related			

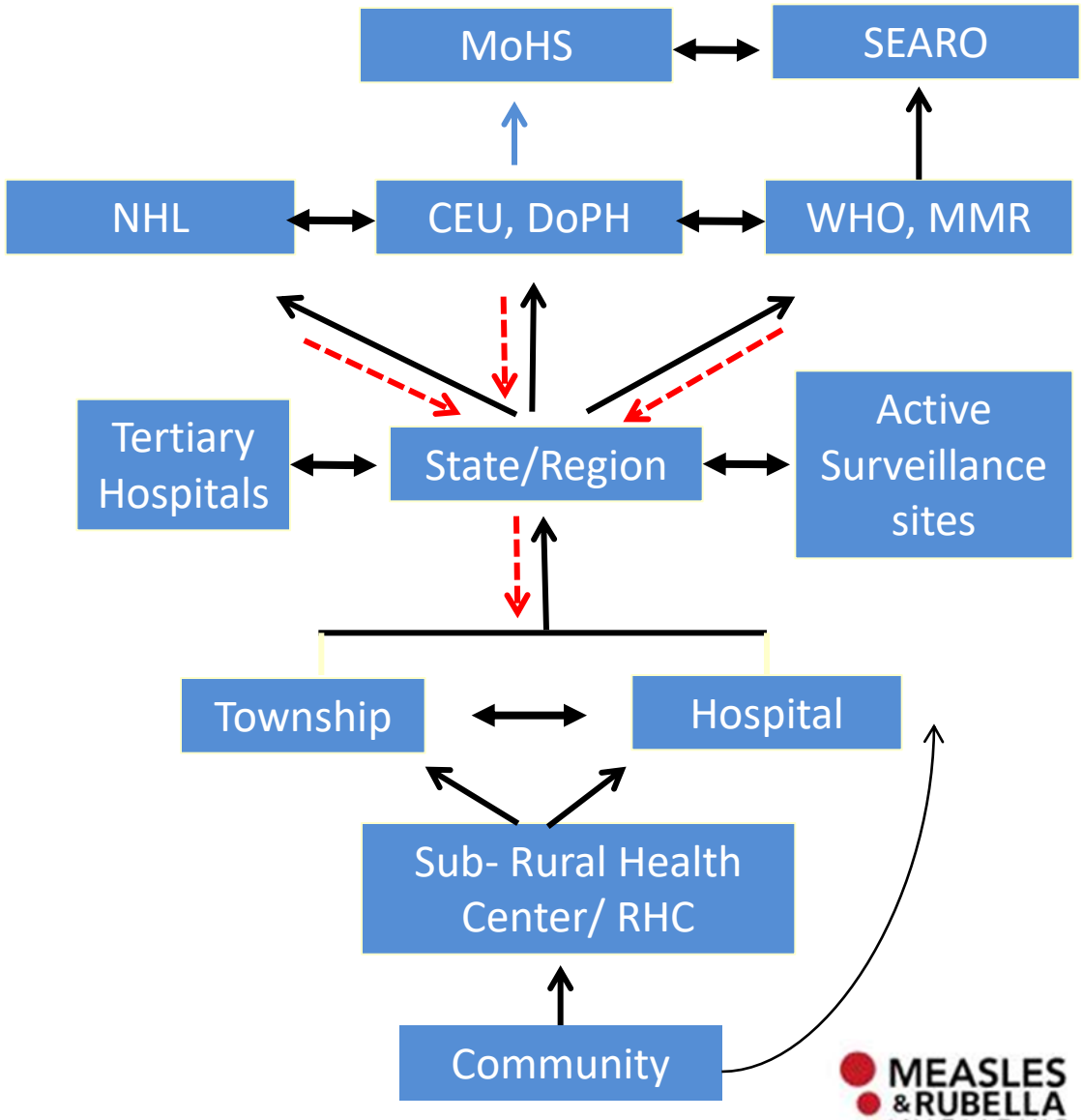
MEASLES & RUBELLA INITIATIVE

3. MR surveillance structure

MEASLES & RUBELLA INITIATIVE

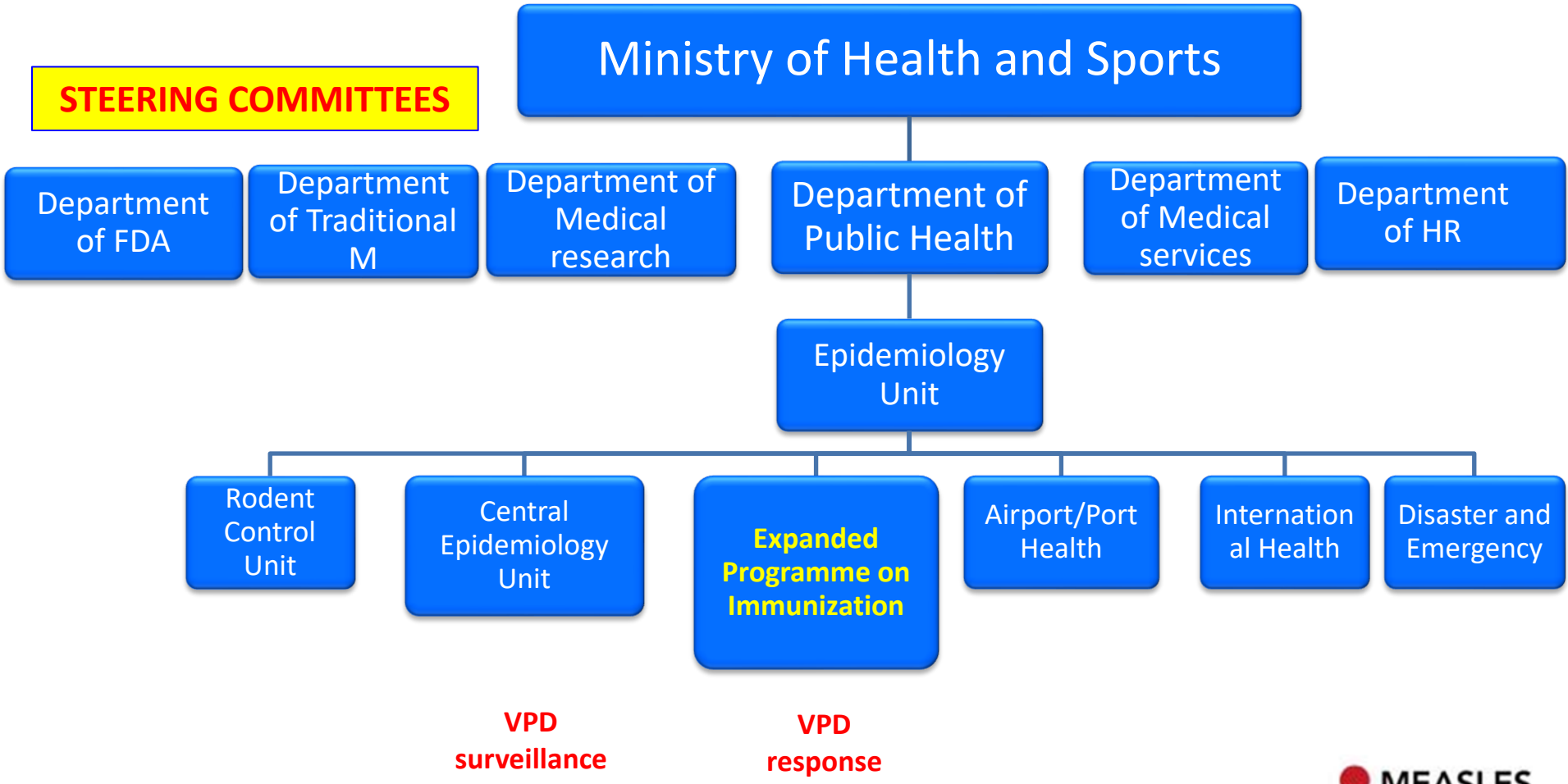
Measles Rubella surveillance reporting system and data flow mechanism





MEASLES & RUBELLA INITIATIVE

Organization Setup



MEASLES & RUBELLA INITIATIVE

3a. Epidemiologic Surveillance quality

Indicators	2010	2011	2012	2013	2014	2015	2016	2017*
Total no. of suspected measles cases	**337**	**2491**	**2366**	**1191**	**479**	**243**	**586**	**1626**
Total no. of confirmed measles cases	**190**	**2062**	**2099**	**978**	**122**	**3**	**269**	**1232**
Total no. of confirmed rubella cases	**10**	**105**	**21**	**23**	**30**	**34**	**10**	**3**
Annualized incidence of confirmed measles cases per million population	3.16	33.94	34.05	15.71	1.94	0.12	5.22	23.69
Annualized incidence of confirmed rubella cases per 100,000 population	0.01	1.45	0.34	0.37	0.48	0.68	0.19	0.06
Proportion of suspected cases with adequate investigation initiated within 48 hours of notification	NA	NA	NA	NA	NA	NA	NA	NA
Percentage of suspected outbreaks fully investigated	100%	100%	100%	100%	100%	100%	100%	100%
Immunization coverage MCV1 coverage nationally and by District administrative	88%	88%	84%	86%	88%	84%	91%	87%
Immunization coverage MCV2 coverage nationally and by District administrative	75%	80%	76%	80%	82%	78%	86%	85%
% Weekly zero reports received among expected (Completeness)	97%	98%	100%	99%	96%	99%	97%	96%
% Weekly zero reports received on time (Timeliness)	95%	96%	98%	96%	92%	96%	96%	94%
Reporting rate of discarded non-measles non-rubella cases per 100,000 population	0.25	0.79	0.31	0.30	0.57	0.42	0.63	0.79
Proportion of districts reporting at least 2 discarded non-measles non-rubella cases per 100,000 population (representativeness of reporting)	2%	18%	11%	12%	14%	12%	17%	25%
Proportion of specimens received at the laboratory within 5 days of collection	NA	NA	89%	72%	69%	76%	95%	99%
Proportion of serology results reported by the laboratory within 4 days of specimen receipt	NA	NA	15%	44%	53%	93%	100%	98%

Data as of 2 Nov 2017

MEASLES & RUBELLA INITIATIVE

3b. Laboratory Surveillance quality

Number of WHO accredited MR laboratories in 2017	2
Last Quality Assurance activity date and score	25.8.16, Measles(100%), Rubella(100%)
Proportion of laboratories in the country that conduct measles diagnostic testing that have adequate quality assurance mechanisms in place	NHL and PHL only
Proportion of serology results reported by the laboratory within 4 days of specimen receipt	100%
Proportion of virus detection and genotyping results (where appropriate) that are completed within 2 months of receipt of specimen	100%
Proportion of confirmed cases with adequate specimen tested for virus detection	100%

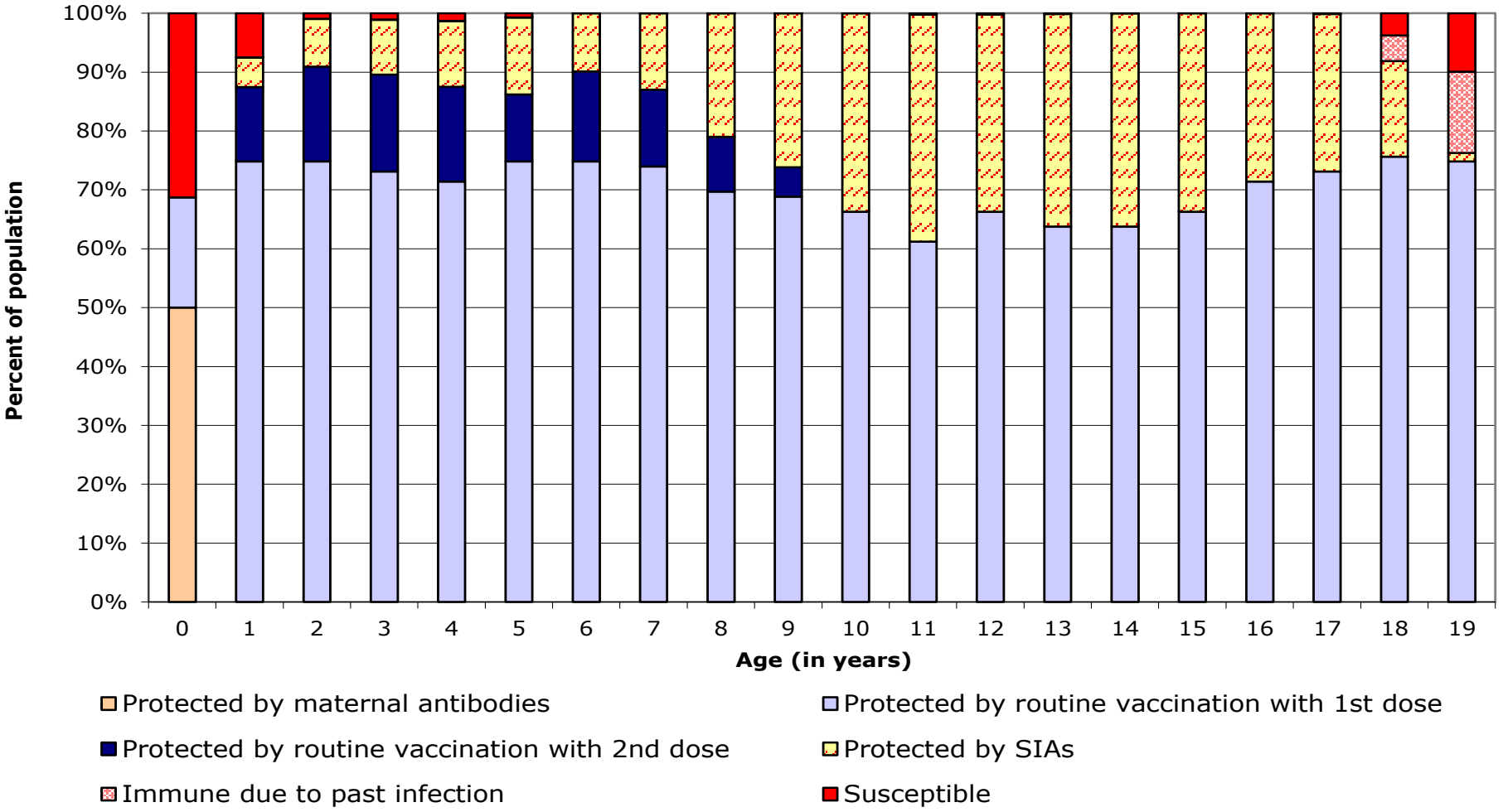
MEASLES & RUBELLA INITIATIVE

4a. Population Immunity –measles and rubella

- Pockets of unimmunized population in
  - Armed conflict area - Shan State
  - Social conflict area - Rakhine State
  - Migrant population and urban slum
- Sero- survey to assess the profile of population profile-
- Plan in 2018 1st Q

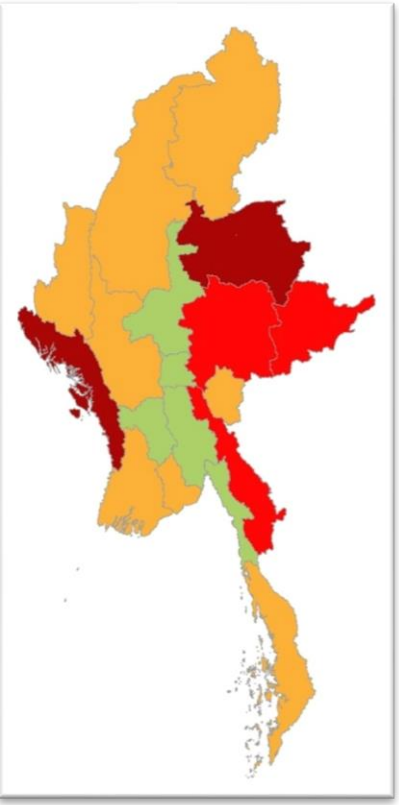
MEASLES & RUBELLA INITIATIVE

Immunity against measles: Immunity profile by age in 2016

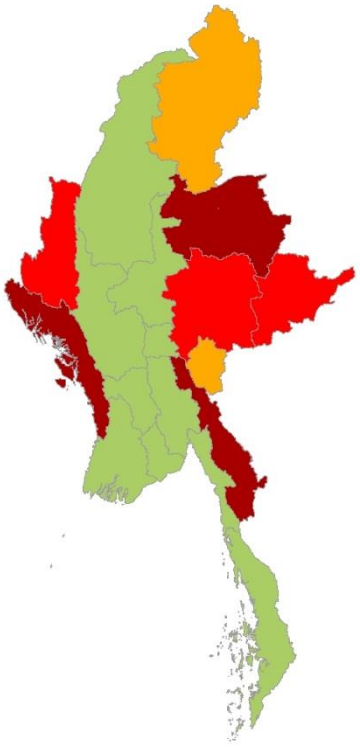


MEASLES & RUBELLA INITIATIVE

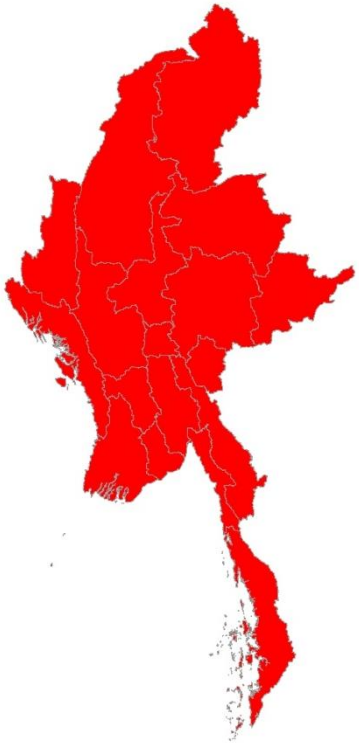
Measles Risk Assessment 2017-Myanmar



OVER ALL RISK STATUS

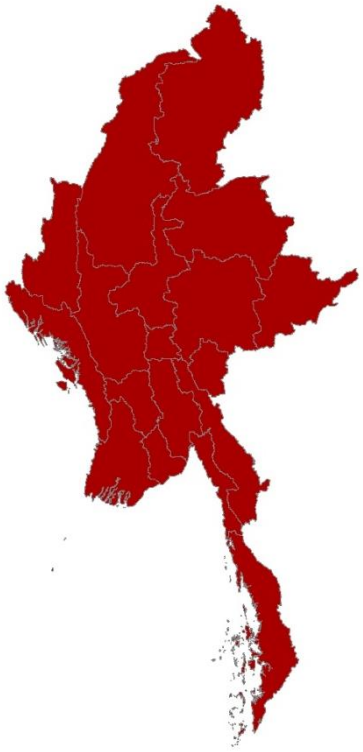


Population Immunity



Surveillance Quality

Program Delivery



Threat Assessment

- Very High Risk
- High Risk
- Medium Risk
- Low Risk

MEASLES & RUBELLA INITIATIVE

4b. Sub-national risk assessment

- Assessment based on the WHO Risk assessment tool- at least for the first sub-national level

	OVER ALL RISK STATUS (All categories)		Population Immunity	Surveillance Quality	Program Delivery	Threat Assessment
AREA	*Status*	*Points (100)*	*Status*	*Status*	*Status*	*Status*
Enter name of Provinces						
AYEYARWADY	MR	47	LR	HR	LR	VHR
BAGO	LR	45	LR	HR	LR	VHR
CHIN	MR	54	HR	HR	LR	VHR
KACHIN	MR	51	MR	HR	LR	VHR
KAYAH	MR	52	MR	HR	LR	VHR
KAYIN	HR	60	VHR	HR	LR	VHR
MAGWAY	MR	48	LR	HR	LR	VHR
MANDALAY	LR	46	LR	HR	LR	VHR
NAY PYI TAW	LR	45	LR	HR	LR	VHR
MON	LR	41	LR	HR	LR	VHR
RAKHINE	VHR	64	VHR	HR	LR	VHR
SAGAING	MR	48	LR	HR	LR	VHR
SHAN EAST	HR	55	HR	HR	LR	VHR
SHAN NORTH	VHR	65	VHR	HR	LR	VHR
SHAN SOUTH	HR	58	HR	HR	LR	VHR
TANINTHARYI	MR	47	LR	HR	LR	VHR
YANGON	MR	47	LR	HR	LR	VHR
TOTAL						
VHR (Very High Risk)	2	3.1%	3	0	0	17
HR (High Risk)	3	4.7%	3	17	0	0
MR (Medium Risk)	8	12.5%	2	0	0	0
LR (Low Risk)	4	6.3%	9	0	17	0

5.Sustanability

Indicators	Yes/No	Remarks
National measles elimination and rubella control strategic plan or equivalent available	Yes	
Evidence of monitoring and review of progress and corrective action taken	Yes	
Budgeted outbreak response plan	Yes	
Capacity for epidemiological investigations and analysis of outbreaks at the subnational level.	Yes	Limited capacities in some States and Regions but planned for training.
Secured funding for MR vaccine and ancillaries procurement	Yes	Gavi HSS2 not yet received
Written programmatic risk assessment or equivalent work plan at sub-national level	Yes	Part of National workplan

MEASLES & RUBELLA INITIATIVE

NVC comments

(Country Classification (based on WHO criteria) ,

Overall progress against the three criteria for verification for measles and rubella)

Myanmar is still **endemic country** with

- Immunity gap in at least two or more age groups
- Inadequate surveillance standard

MEASLES & RUBELLA INITIATIVE

Challenges in achieving measles elimination and rubella/CRS control- 2016

Challenges	Planned actions
Political commitment for RI and Surveillance	**-Advocacy to Regional Government** **-MMA advocacy** **-Grant for research on Measles and Rubella surveillance**
Maintaining high population immunity - achieving high routine MR coverage (95%) for both doses	**-Focused on microplanning** **-Special microplanning for H2R and self administrative regions**
High drop out rate and very low MCV2 coverage	**-MCV2 to MR**
Availability of vaccines	**-Secured Government budget** **-Vaccine Independent Initiative (VII)**

MEASLES & RUBELLA INITIATIVE

Challenges in achieving measles elimination and rubella/CRS control- 2016

Challenges	Planned actions
Surveillance is persistently low (non-measles non-rubella discarded rate is less than 1/ 100,000 population)	Expansion of case based surveillance - reporting, investigation, sample collection and transportation - Increased by private network Risk communication to public Raised funding
Expansion of laboratory support	Availability of laboratories
Funding support	HSS2 grant (1,160,000 USD) 2017-2019

MEASLES & RUBELLA INITIATIVE

Way forward- National Strategic Plan for Elimination of Measles and Rubella and CRS control (2016-2020)

- Catch-up vaccination up to 5 years (no cost)
  - Strengthening RI- Urban Immunization Project and
  - Hospital-based EPI clinics
  - School entry MR vaccination pilot in 2018
- Increasing Immunity in adults-
  - MR vaccination to HCW (Yangon)
  - New Job entry check (private)
- SIA in 2018- 9 months to under 5 years in High Risk Area and townships ?
- Measles Outbreak response-
  - SIA in affected Township age group-?
  - Lower Age- 6 -9 months ?

MEASLES & RUBELLA INITIATIVE

Way forward- National Strategic Plan for Elimination of Measles and Rubella and CRS control (2016-2020)

Expansion of case based surveillance - reporting, investigation, sample collection and transportation

- Increased by private network (outsourced to MMA-GP section)
- Risk communication to public
- Raised funding

MEASLES & RUBELLA INITIATIVE

Photo- Naga land

MEASLES & RUBELLA INITIATIVE

Age Distribution of Measles Cases in Myanmar, 2017

National

Age Group	Total
Group1 0-11 Months	219
Group2 1-4 Years	343
Group3 5-9 Years	122
Group4 10-14 Years	31
Group5 15+ Years	516
Group9 Unknown	1
Grand Total	**1232**

Yangon

Age Group	Total
Group1 0-11 Months	137
Group2 1-4 Years	188
Group3 5-9 Years	53
Group4 10-14 Years	13
Group5 15+ Years	248
Group9 Unknown	0
Grand Total	**639**

Hlaingtharyar

Age Group	Total
Group1 0-11 Months	48
Group2 1-4 Years	74
Group3 5-9 Years	17
Group4 10-14 Years	5
Group5 15+ Years	39
Group9 Unknown	**0**
Grand Total	**183**

Data as of 2 Nov 2017

MEASLES & RUBELLA INITIATIVE