AFP surveillance Indicators by State and Region, 2018*

State/Region	<15 Population	Minimum Expected Non Polio AFP Cases (2/100,000 pop)	Total no. of reported AFP Case	Non-Polio AFP Case	Annualized AFP Rate	Annualized Non-Polio AFP Rates	% of Adequate Stool
Ayeyarwady	1,653,018	33	12	11	1.26	1.15	100
Bago	1,282,089	27	25	25	3.38	3.38	100
Chin	187,080	2	2	1	1.85	0.93	100
Kachin	442,109	8	3	3	1.18	1.18	100
Kayah	94,003	2	2	2	3.69	3.69	50
Kayin	521,924	11	6	5	1.99	1.66	100
Magway	985,189	19	15	12	2.64	2.11	93
Mandalay	1,442,973	28	22	21	2.64	2.52	100
Naypyitaw	288,213	5	6	5	1.76	1.47	100
Mon	591,424	11	2	1	1.20	0.60	100
Rakhine	833,457	17	15	13	3.12	2.70	93
Sagaing	1,413,760	33	10	10	1.23	1.23	100
Shan East	227,670	4	2	1	1.52	0.76	100
Shan North	722,544	12	11	6	2.64	1.44	100
Shan South	735,534	12	4	4	0.94	0.94	100
Taninthayi	454,875	11	4	3	1.52	1.14	75
Yangon	1,550,049	29	12	7	1.34	0.78	92
Total	**13,425,911**	**264**	**153**	**130**	**1.98**	**1.68**	**97**

Acute Flaccid Paralysis (AFP)

Total no. of expected non-polio AFP cases - 264

Annualized expected Non Polio AFP Cases (as of week.30) - 152

Reported AFP cases - 153

Discarded as non-polio AFP cases—130

Annualized AFP rate - 1.98

Annualized Non-polio AFP rate - 1.68

Percentage of adequate stool collection - 97%

Pending for classification - 23

*Data as of 31 July 2018

(week no. 30)

Age group and vaccination status of AFP cases, 2018*

Spot Map of AFP Cases   Annualized Non polio AFP rate   % of Adequate stool collection

Environmental Surveillance in Myanmar

Poliovirus and NPEV detected in Sewage samples in Myanmar, 2018*

	Sampling site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
2018	Yangon																														
	Sitwe																														
	Maung Taw																														

Legend: Type 1 Sabin, Type 2 Sabin, Type 3 Sabin, Type 1 Sabin + 3 Sabin, Type 1 VDPV, Type 2 VDPV, Type 3 VDPV, Wild polio type 1, Wild polio type 3, Negative for Polio and NPEV, Result pending, NPEV, Sampling not scheduled

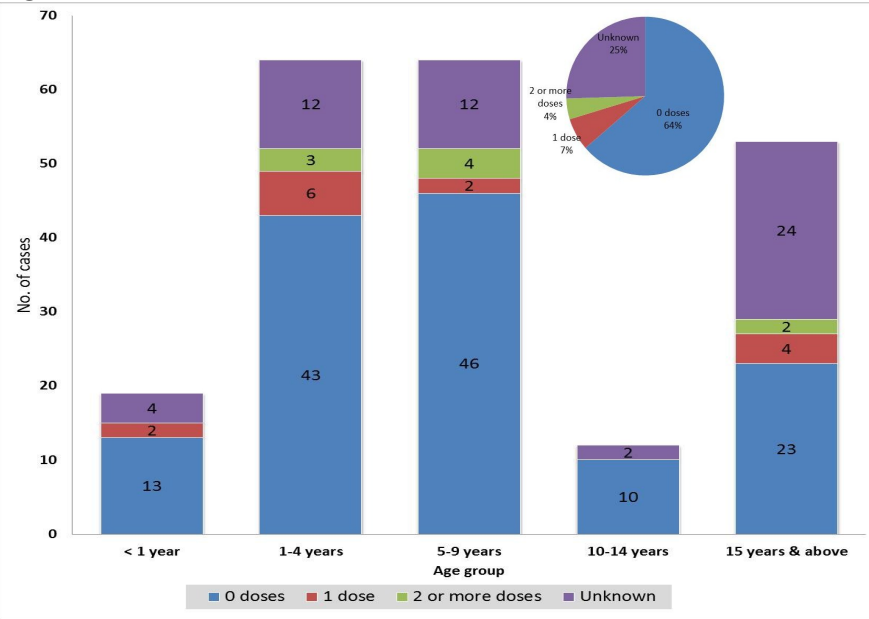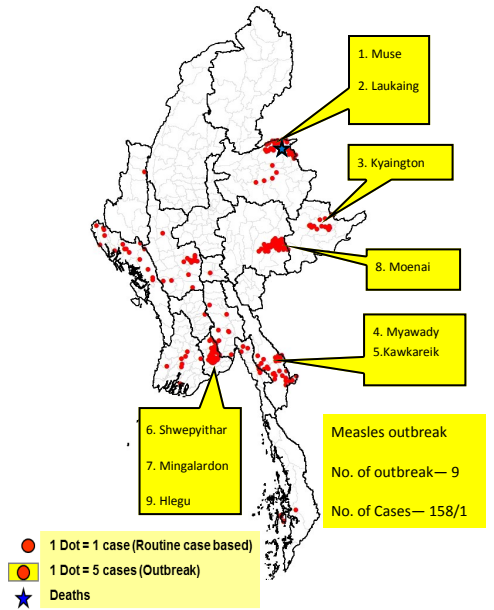* Data as of week no. 30, 31 July 2018

Fever with Rash Surveillance, 2018*

State/Region	Total Population	Expected Non-measles suspected measles Cases	Suspected cases reported	Total Serum Specimen tested in Laboratory	Confirmed Measles			Confirmed Rubella	Non Measles Non Rubella Cases	Pending	Annualized incidence of measles	Annualized incidence of non-measles/non-rubella suspected measles cases
					Lab-confirmed	Epi-confirmed	Clinically confirmed					
Ayeyarwady	6437373	129	24	24	8	0	0	0	16	0	1.24	0.25
Bago	5177071	104	37	37	8	0	0	0	29	0	1.55	0.56
Chin	532750	11	3	3	1	0	0	0	2	0	1.88	0.38
Kachin	1625316	33	4	4	0	0	0	1	3	0	0.00	0.18
Kayah	310330	6	0	0	0	0	0	0	0	0	0.00	0.00
Kayin	1664092	33	42	42	25	4	0	0	11	2	17.43	0.66
Magway	4327568	87	17	13	6	7	1	0	3	0	3.24	0.07
Mandalay	6206034	124	6	6	0	0	0	1	5	0	0.00	0.08
Mon	2321587	46	7	7	4	0	1	0	5	0	2.15	0.13
Nay Pyi Taw	1111897	22	6	5	0	0	1	0	2	0	0.90	0.45
Rakhine	2846882	57	27	27	16	0	0	0	11	0	5.62	0.39
Sagaing	5646315	113	4	4	0	0	0	0	2	2	0.00	0.04
Shan East	845364	17	15	8	6	9	0	0	0	0	17.74	0.00
Shan North	2507456	50	42	22	13	28	0	0	1	0	16.35	0.04
Shan South	2413792	48	54	18	6	38	0	0	9	1	18.23	0.37
Tanintharyi	1528308	31	6	6	5	0	0	0	0	1	3.27	0.00
Yangon	6848946	137	149	117	39	33	1	4	72	0	10.66	1.07
National	52351081	1047	443	343	137	119	4	6	171	6	4.97	0.33

Age and Vaccination Status of confirmed Measles cases, 2018*

Spot map of measles cases, 2018*

1. Muse
2. Laukaing
3. Kyaington
8. Moenai
4. Myawady
5. Kawkareik
6. Shwepyithar
7. Mingalardon
9. Hlegu

Measles outbreak
No. of outbreak— 9
No. of Cases— 158/1

1 Dot = 1 case (Routine case based)
1 Dot = 5 cases (Outbreak)
Deaths

Epidemic curve for Measles Cases 2012-2018*

Nation wide Measles Rubella Campaign
SIA

5 Townships in Yangon Region
SIA
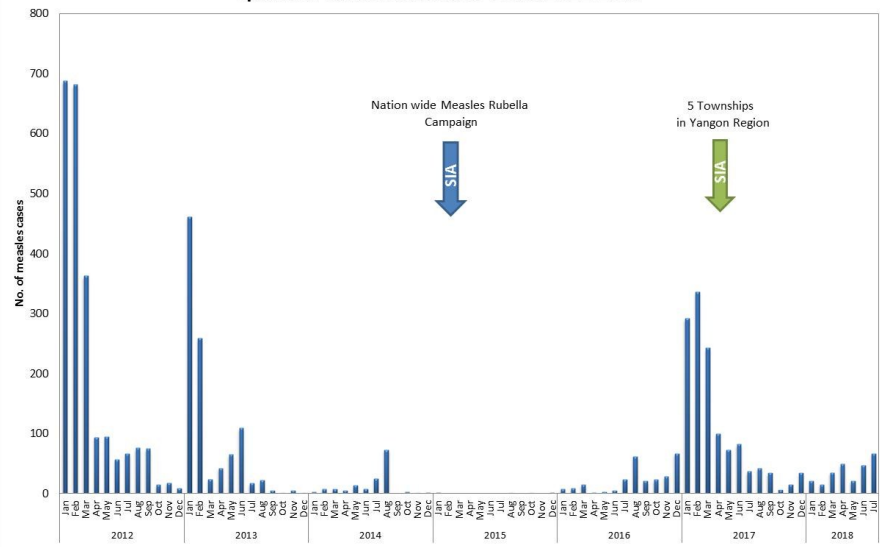
CRS Surveillance

Total no. of serum sample received - 6

Total no. of serum sample tested— 6

Laboratory Results - Negative

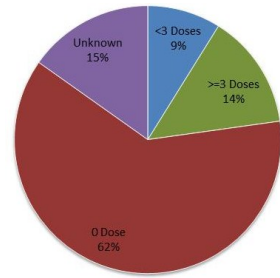* Data as of week no. 30, 31 July 2018

Diphtheria, 2018*

Reported Diphtheria cases and deaths in State and Region

State/Region	Total
Yangon	24
Shan State (South)	18
Ayeyarwady	15
Shan State (North)	8
Bago (East)	4
Mandalay	3
Kachin	2
Naypyitaw	2
Rakhine	2
Magway	1
Grand Total	**79**
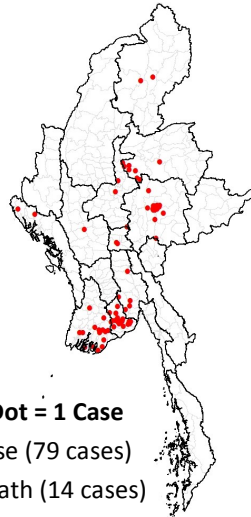
● **1 Dot = 1 Case**

Case (79 cases)

Death (14 cases)

Immunization Status of Diphtheria Cases

(Pie chart: <3 Doses 9%, >=3 Doses 14%, 0 Dose 62%, Unknown 15%)
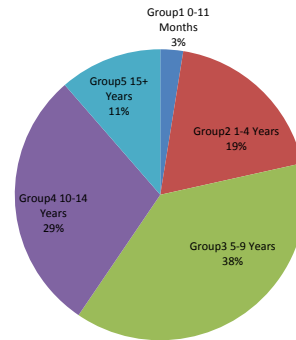
Diphtheria Cases by Age group

(Pie chart: Group1 0-11 Months 3%, Group2 1-4 Years 19%, Group3 5-9 Years 38%, Group4 10-14 Years 29%, Group5 15+ Years 11%)

Pertussis (Whooping Cough), 2018*

Cases distribution of whooping cough cases in State and Region

(Bar chart: No. of Cases by State/Region)
- Thayarwady (Bago West): 2
- Hlaingbwe (Kayin): 2
- Myawaddy (Kayin): 5
- Kyunsu (Tanintharyi): 1
- Dagon Myothit (East) (Yangon): 1
- Hlaingtharya (Yangon): 1
- Htantabin (Yangon): 1
- Mayangone (Yangon): 1
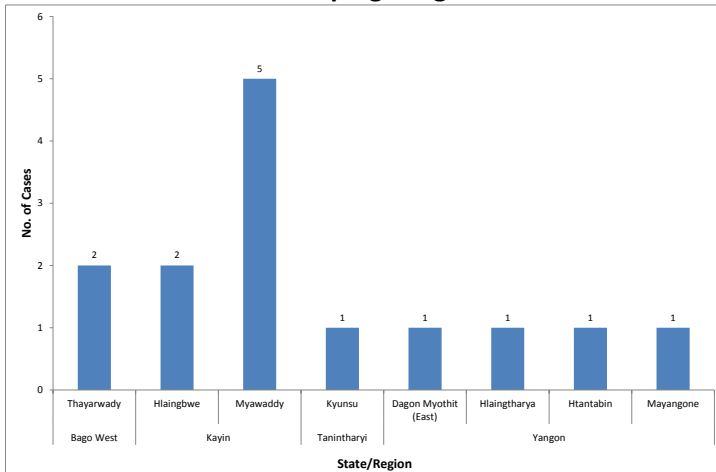
Age group	0 Dose	1 Dose	2 Doses	3 Doses	Total
0-11 Months	4	1	1		6
1-4 Years	1				1
5-9 Years	3			1	4
10-14 Years	3				3
Grand Total	**11**	**1**	**1**	**1**	**14**

Neonatal Tetanus, 2018*

Reported NNT cases and deaths in State and Region

State/Region	Township	Cases	Deaths
Ayeyarwady	Pyapon	1	1
Bago	Bago	1	1
Kachin	Waingmaw	1	0
Magway	Taungdwingyi	1	0
Mandalay	Meiktila	1	1
Rakhine	Sittwe	1	0
Sagaing	Shwebo	1	1
Tanintharyi	Myeik	1	0
Yangon	Dagon Myothit (South)	1	1
	Hlaingtharya	2	1
Total Reported		**11**	**6**

Place of birth among reported NNT cases		Reported NNT Case are delivered by		Vaccination stauts of mother during pregnancy	
Hospital	1	Doctor	0		
Health Center	0	BHS	2	0 Dose	7
Private Hospital	0	Trained TBA	0		
Home	9	TBA	3	1 Dose	2
Other	0	Other	4		
Unknown	1	Not Attended	1	>=2 Doses	2
Total	**11**	**Total**	**11**	**Total**	**11**

TT2 coverage and Neonatal tetanus cases (1990-2018*)

(Bar and line chart: No. of NNT Cases and TT Coverage % by Year)
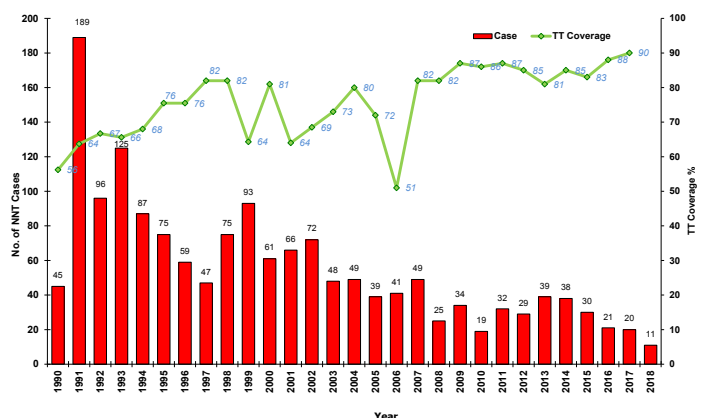
* Data as of week no. 30, 31 July 2018

Acute Encephalitis Syndrome

## Reported AES cases & JE positive cases (2012-2018*), Myanmar
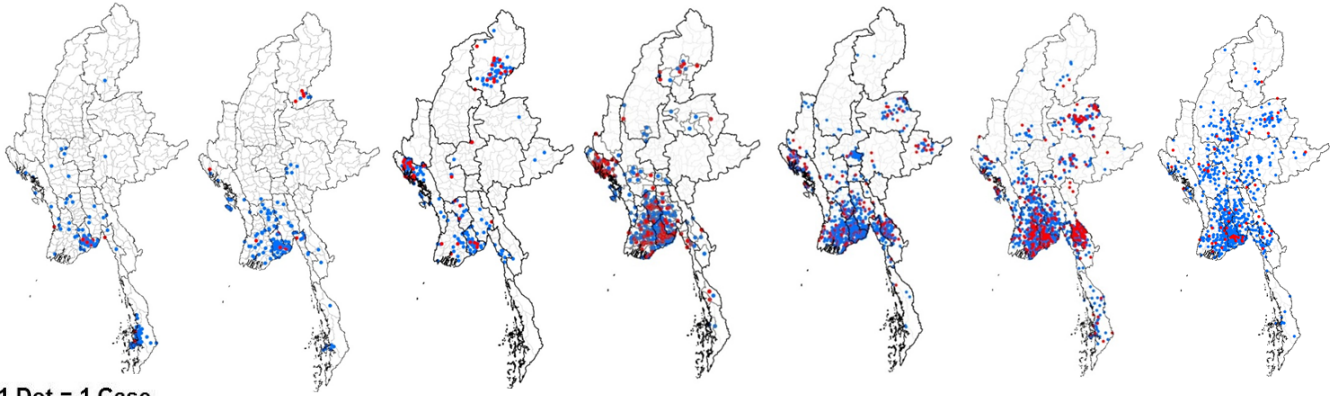
1 Dot = 1 Case

2012	2013	2014	2015	2016	2017	2018
JE 14	JE 17	JE 24	JE 151	JE 393	JE 383	JE 66
AES 176	AES 226	AES 152	AES 645	AES 1911	AES 2089	AES 1045

Region/State-wise Occurrences of JE 2012-2018*

Region/State	2012		2013		2014		2015		2016		2017		2018*	
	AES	Lab+ive JE	AES	Lab +ive JE	AES	Lab +ive JE	AES	Lab +ive JE	AES	Lab +ive JE	AES	Lab +ive JE	AES	Lab +ive JE
Ayeyawady	7	0	21	1	12	4	90	21	231	45	259	51	114	11
Bogo	9	0	23	0	16	7	86	28	213	53	256	49	116	6
Chin	0	0	0	0	0	0	1	1	11	3	2	1	3	1
Kachin	1	0	4	4	10	1	12	5	8	1	7	2	7	2
Kayah	0	0	0	0	0	0	0	0	1	1	15	6	8	1
Kayin	0	0	2	0	0	0	6	1	136	37	165	65	26	5
Magway	4	0	1	0	1	1	10	4	30	4	58	6	54	7
Mandalay	1	0	0	0	5	3	2	0	122	19	6	1	51	1
Mon	2	1	10	2	5	0	29	5	60	8	61	13	30	1
Naypyitaw	0	0	0	0	0	0	1	0	5	2	12	1	10	1
Rakhine	6	1	9	1	47	2	126	46	120	26	88	17	27	2
Sagaing	0	0	0	0	0	0	6	1	52	9	18	2	38	4
Shan East	1	0	3	0	0	0	1	0	29	8	5	2	5	1
Shan North	0	0	0	0	0	0	4	0	90	16	88	42	41	7
Shan South	0	0	0	0	0	0	0	0	14	2	60	16	44	1
Tanintharyi	61	5	8	0	1	0	6	3	18	4	45	11	9	0
Yangon	84	7	145	9	55	6	265	36	771	155	889	92	450	15
Unknown State/Region											55	6	12	0
Total	**176**	**14**	**226**	**17**	**152**	**24**	**645**	**151**	**1911**	**393**	**2089**	**383**	**1045**	**66**

JE incidence: lab confirmed cases by age groups 2012-2018*
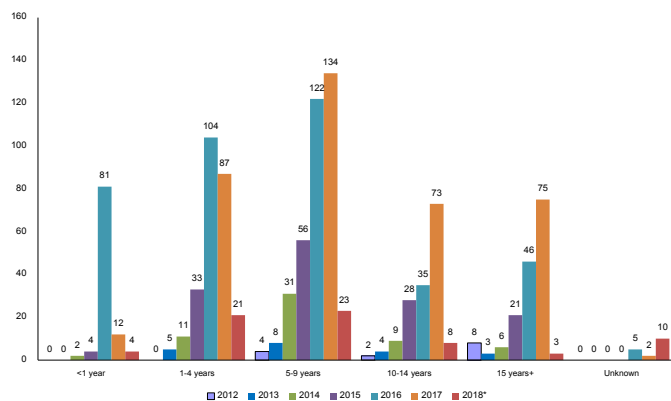
Lab confirmed and reported AES cases by months 2012-2018*

* Data as of week no. 30, 31 July 2018

4

Incidence of Vaccine preventable diseases (VPD)

	2013	2014	2015	2016	2017	2018*
Diphtheria	38	29	87	136	68	79
Measles	1010	122	6	266	1293	260
Pertussis	14	5	5	2	4	14
Polio*	0	0	0	0	0	0
Rubella	23	30	34	10	6	6
Neonatal tetanus	39	32	30	21	20	11
Japanese encephalitis	3	50	113	393	442	66
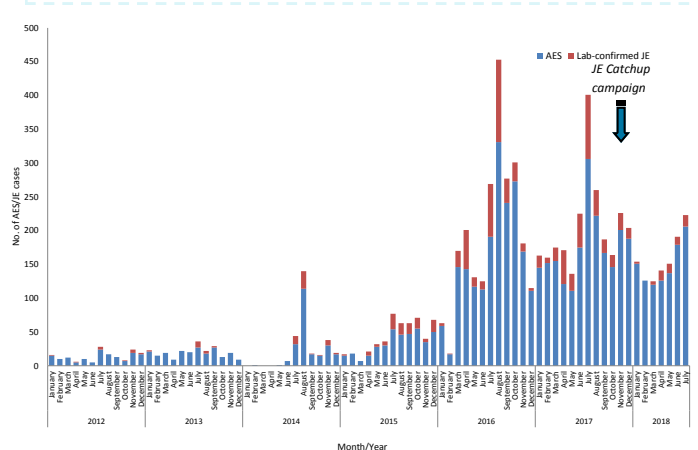
* Data as of week no. 30, 31 July 2018

Incidence of Vaccine preventable diseases (VPD) by State and Region, 2018*

State/Region	Diphtheria	Pertussis	Neonatal tetanus	Japanese encephalitis
Ayeyarwady	15	0	1	11
Bago	4	2	1	6
Chin	0	0	0	1
Kachin	2	0	1	2
Kayah	0	0	0	1
Kayin	0	7	0	5
Magway	1	0	1	7
Mandalay	3	0	1	1
Mon	0	0	0	1
Nay Pyi Taw	2	0	0	1
Rakhine	2	0	1	2
Sagaing	0	0	1	4
Shan East	0	0	0	1
Shan North	8	0	0	7
Shan South	18	0	0	1
Tanintharyi	0	1	1	0
Yangon	24	4	3	15
National	79	14	11	66

* Data as of week no. 30, 31 July 2018

Myanmar influenza surveillance report

Influenza Data 2018*(Hospital Distribution)

Name of hospital	No. of samples receipt	No.of Samples positive	Type of Influenza
Santinal Hospital			
Yangon General Hospital	18	2	Influenza B
1000 Bedded General Hospital, Nay Pyi Taw	1	0	
Thingangyun San Pya Hospital	10	1	Influenza B
Myit Kyi Na General Hospital	42	0	
Sittwe General Hospital	1	0	
Muse Township Hospital	10	1	Influenza B
Myawaddy District Hospital	20	0	
Mandalay General Hospital	1	0	
Others			
North Okkalapa General Hospital	1	0	
Minbu General Hospital	2	0	
Taunggyi SPHD	5	3	Influenza A(H3N2)
Kayin SPHD	2	1	Influenza A(H3N2)
Private Hospital	1	0	

ILI/SARI sentinel surveillance sites

- ♦ **Naypyidaw 1000 bedded hospital**
- ♦ **Yangon general hospital**
- ♦ **Yangon Thingyangyun hospital**
- ♦ **Mandalay general hospital**
- ♦ **Myitkyina general hospital**
- ♦ **Sittwe general hospital**
- ♦ **Myawaddy township hospital**
- ♦ **Muse township hospital**

Number of specimens positive for influenza by subtype
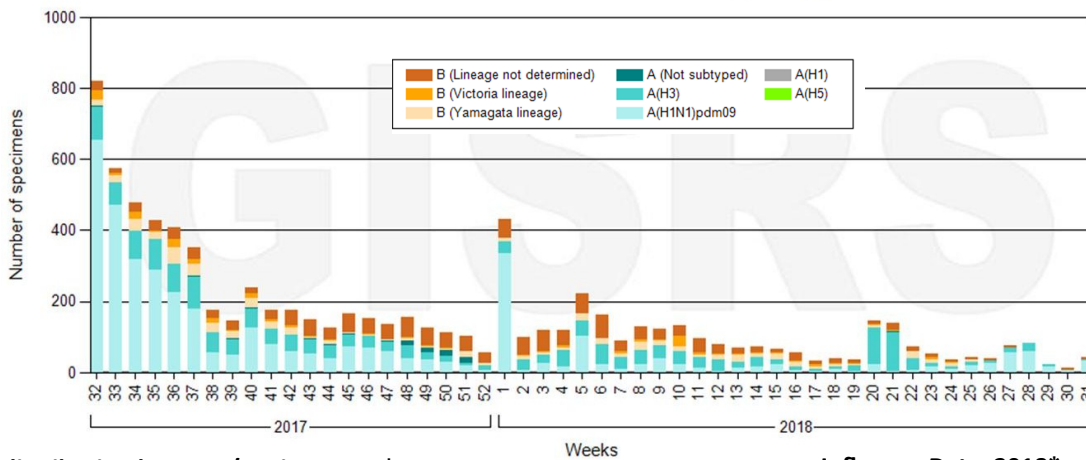
Case distribution by State/Region, 2018*
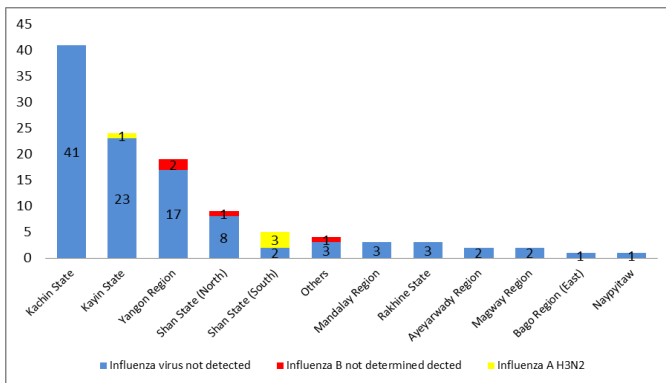
Influenza Data, 2018*
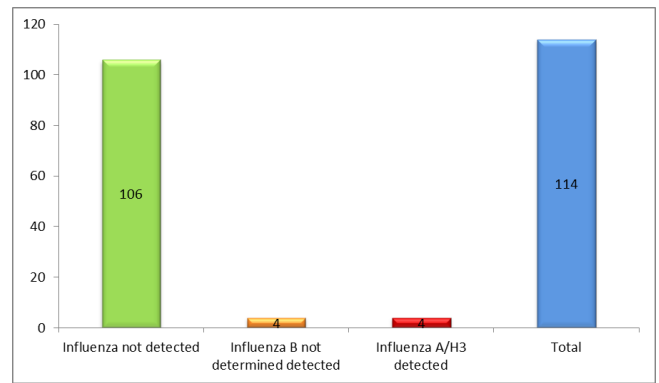
DISEASE OUTBREAK 2018*

No.	Disease	Events	Cases	Death
1.	Measles	9	158	1
2.	Diphtheria	51	79	14
3.	Food Poisoning	37	1320	1
4.	Diarrhoea	13	567	11
5.	Meningitis	9	9	5
6.	Chicken pox	5	48	0
7.	Anthrax	3	19	0
8.	Mumps	3	329	1

* Data as of week no. 30, 31 July 2018

Schistosomiasis

Schistosomiasis is an acute and chronic parasitic disease caused by blood flukes (trematode worms) of the genus *Schistosoma.*

Also referred to as bilharziasis, or snail fever, schistosomiasis was discovered by Theodore Bilharz, a German surgeon working in Cairo, who first identified the etiological agent *Schistosoma hematobium* in 1851. People are infected during routine agricultural, domestic, occupational and recreational activities, which expose them to infested water. Lock of hygiene and certain play habits of school-aged children such as summary or fishing in infested water make them especially vulnerable to infection.

Global Situation

Total number of people in need of preventive chemotherapy globally in 2016 was about 207.7 million of which 111.8 million were school-aged children and out of which 86 million people received preventive chemotherapy. In 2000, WHO estimated the annual death rate at 200,000 globally.

Occurrence of Schistosomiasis in Rakhine State

A consultant pediatrician from Sittwe General Hospital detected 574 suspected cases in Rakhine State, Myanmar from 1st October 2016 to 4th July 2018 and 302 of which were *Schistosoma mansoni* IgG (ELISA) tested positive.

Rapid Response Team was deployed to the villages in Maruk U Township, Rakhine State for preliminary assessment, disease control and prevention. A series of technical meetings were held through June, 2018 to August, 2018 for developing plans. Union Minister, Ministry of Health and Sports led Schistosomiasis technical meeting on 21 July 2018 and WHO representative to Myanmar together with WHO team joined the meeting. Based on the recommendations of that meeting, Ministry of Health and Sports has been planning to enhance awareness raising among community, doctors and health staff and develop short-term and long-term plans to control Schistosomiasis.
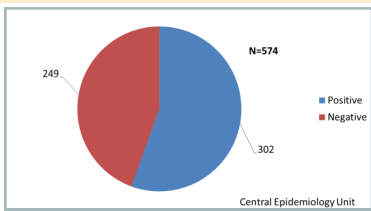
Schistosomiasis cases in Rakhine State, Myanmar
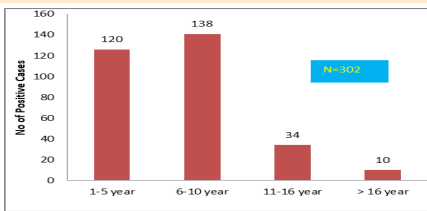
Age Groups Analysis among Positive cases
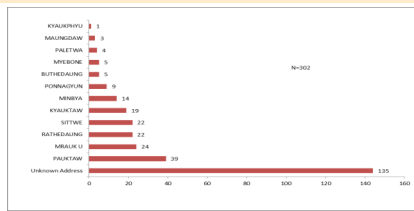
Townships Analysis of Positive Cases

RSO Network in overall diseases surveillance and response

⟹ Regional Surveillance Officer Network, RSO network which was established since 1999 greatly contributed attaining polio eradication status in SEAR region in March 2014. More importantly, it plays an important role in maintaining the polio-free status in Myanmar.

⟹ The core of the RSO network consists of one National Surveillance Coordinator (NSC) and 17 RSOs, one at each state and region, working in close collaboration with States and Regional Public Health Departments and Central Epidemiology Unit.

⟹ All RSOs are government-employed medical doctors and health assistants selected by MOHS annually. Each RSO works within a functional unit which includes an administrative assistant who is responsible for data management, finance and admin and a driver for a 4WD vehicle supported by WHO.

⟹ Induction training of recruited NSC and RSOs for 2018 was held on 13-18 July 2018 at Tangapuri Hotel, Nay Pyi Taw. During the training, His Excellency, Union Minister for Health and Sports, Dr. Myint Htwe met them and guided them putting efforts on data management, referring to the MOHS websites for information on disease surveillance and control and enhancing application ICT for continuous learning.

⟹ RSO network maintains the qualified certification standard of non-polio AFP rate of more than 2 per 100,000 population and more than 90% of adequate stool collection rate at all states and region.

⟹ Moreover, all the RSOs, in the past or current, actively participate in surveillance and response to vaccine preventable disease, epidemic prone communicable diseases or response to disaster. Newly recruited RSOs also went to the field for flood response in July and August 2018 during the localized flood in Myanmar.

Field Epidemiology Training Programme in Myanmar

Myanmar FETP - Our Strength for the Country

Changing Mindset & Attitude

Do Good Job with Good Practices

"Save Lives"

Being a National Focal Point for FETP, Central Epidemiology Unit (CEU), Department of Public Health has been running the FETP short courses since 2008. With the stewardship of the Ministry of Health and Sports and the technical assistance of USCDC and WHO, the first 9-month intermediate FETP course in Myanmar was started in 11 July, 2018 in Training Center, Lewe Township, Nay Pyi Taw. It was officially launched on 24 July, 2018 at Hotel Max, Nay Pyi Taw. Union Minister for Health and Sports delivered an opening remark at launching and also the Deputy Representative to US Embassy, Mr. William Flens and WHO representatives to Myanmar, Dr. Stephen Jost delivered remarks. Together with trainees and mentors, Deputy Union Minister for Health and Sports, Director General, Deputy Director General, Head of State and Region Department of Public Health, Partners and special guests attended the launching.

This training aims to train Field Epidemiology to 15 medical officers working for public health or disease control at central, states and regions. Facilitators are from CEU, Department of Public Health, Department of Human Resources for Health, University of Public Health, Universities of Medicine, graduates from International Field Epidemiology Training Programme (IFETP), retired health professionals and trainers from partner institutions.

AFP Case Definition:

Any case of AFP in a child aged <15 years, or any case of paralytic illness in a person of any age when polio is suspected.

Acute: rapid progression of paralysis from onset to maximum paralysis

Flaccid: loss of muscle tone, "floppy" – as opposed to spastic or rigid

Paralysis: weakness, loss of voluntary movement

Any case meeting this definition undergoes a thorough investigation to determine if the paralysis is caused by polio.

Measles Case Definition:

Suspected case of measles:

A patient in whom a health- care worker suspects measles infection, **OR** a patient with fever and maculo-papular (non-vesicular) rash.

Laboratory confirmed measles: A suspected case of measles, that has been confirmed by a proficient laboratory

Epidemiologically linked confirmed case of measles: A suspected case of measles, that has not been confirmed by a laboratory but was geographically and temporally related, with dates of rash onset occurring 7 - 21 days apart to a laboratory confirmed case, or, in the event of a chain of transmission to another epidemiologically confirmed measles case.

Clinically compatible measles case: A case with fever and maculo-papular (non-ve-sicular) rash and one of cough, coryza or conjunctivitis for which no adequate clinical specimen was taken and which has not been linked epidemiologically to a laboratory confirmed case of measles or another laboratory-confirmed communicable diseases.

CRS Surveillance

Congenital Rubella Syndrome (CRS) Standard Case Definitions

Classification of cases for CRS surveillance purposes is based on clinical, epidemiological and laboratory data. The case definitions for CRS surveillance include the following categories: suspected, laboratory confirmed, clinically compatible, epidemiologically linked and discarded.

Case definition for Diphtheria surveillance

Clinical description

An upper respiratory tract illness characterized by sore throat, low-grade fever, and an adherent membrane of the tonsil(s), pharynx, and/or nose.

Laboratory criteria: Isolation of C. diphtheriae from a clinical specimen, OR Histopathologic diagnosis of diphtheria.

Whooping Cough Case Definitions

Clinical case definition

In the absence of a more likely diagnosis a cough illness lasting ≥2 weeks with one of the following symptoms: Paroxysms of coughing, OR Inspiratory "whoop," OR Post tussive vomiting, OR Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY)

Confirmed Case definition of Neonatal Tetanus:

Any neonate with normal ability to suck and cry during first two days and who during 3 to 28 days cannot suck or cry and has convulsion or spasms, by triggered by minimal stimuli such as light, noise or touch or who has signs of stiffness and rigidity, which include any of the following: trismus, clenched fists or fits, continuously pursed lips, curved back (opisthotonus).

Surveillance of AES

All cases of acute encephalitis syndrome should be reported

Clinical case definition: A person of any age, in any geographical region, at any time of year with acute onset of fever and a change in mental status (including symptoms such as confusion, disorientation, coma, or inability to talk) AND/OR new onset of seizures (excluding simple febrile seizures).

AFP Surveillance Indicators (core indicators)

Indicator	Target	Calculation		
1. Non-polio AFP rate	= 2/100,000	No. of discarded non-polio AFP cases among 15 years of age group / Total number of children < 15 years of age	x	100000
2. Reported AFP cases with 2 specimens collected = 14 days since onset.	= 80%)	No of AFP cases with 2 specimens collected within 14 days of paralysis onset / Total number of children < 15 years of age	x	100

Measles Surveillance Indicators (core indicators)

Indicator	Target	Definition
Disease incidence Annual incidence of confirmed measles cases Annual incidence of confirmed rubella cases	Absence of indigenous measles transmission	The numerator is the confirmed number of measles or rubella cases of the year denominator is the population in which the cases occurred multiplied by 1,000,000. When numerator is zero, the target incidence would be zero.
Proportion of sub-national administrative units reporting at least 2 discarded non measles, non rubella cases per 100,000 population	>80%	The numerator is the number of sub-national units reporting at least 2 discarded non-measles non rubella cases per 100,000 and the denominator is the total number of sub-national units multiplied by 100

Data source:

- Central Epidemiology Unit,

- National Health Laboratory,

- National Surveillance Coordinator Office (WHO)

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