



Ministry of Health and Sports Department of Public Health Central Epidemiology Unit Monthly Epidemiology BULLETIN

April, 2019

AFP surveillance Indicators by State and Region, 2019*

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	5	4	0.87	0.70	100
Bago	1,282,089	27	16	13	3.61	2.93	100
Chin	187,080	2	3	3	4.63	4.63	100
Kachin	442,109	8	2	2	1.31	1.31	100
Kayah	94,003	2	0	0	0.00	0.00	0
Kayin	521,924	11	5	3	2.77	1.66	100
Magway	985,189	19	8	7	2.35	2.05	100
Mandalay	1,442,973	28	10	7	2.00	1.40	90
Naypyitaw	288,213	5	0	0	0.00	0.00	0
Mon	591,424	11	3	3	1.47	1.47	100
Rakhine	833,457	17	2	2	0.69	0.69	100
Sagaing	1,413,760	33	13	11	2.66	2.25	85
Shan East	227,670	4	5	4	6.34	5.08	100
Shan North	722,544	12	4	2	1.60	0.80	100
Shan South	735,534	12	10	8	3.93	3.14	100
Taninthayi	454,875	11	4	3	2.54	1.91	75
Yangon	1,550,049	29	6	2	1.12	0.37	100
Total	13,425,911	264	96	74	2.07	1.59	96

Acute Flaccid Paralysis (AFP)

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

Annualized expected Non Polio AFP Cases (as of week.18) - 91

Reported AFP cases - 96

Discarded as non-polio AFP cases - 74

Annualized AFP rate - 2.07

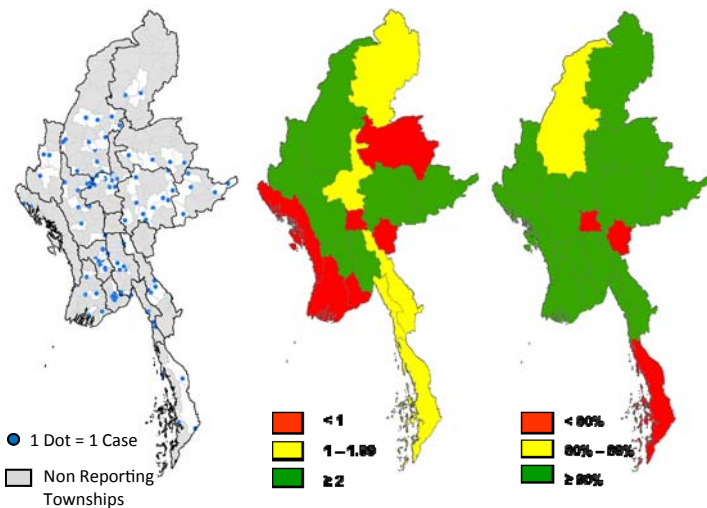
Annualized Non-polio AFP rate - 1.59

Percentage of adequate stool collection - 99%

Pending for classification - 22

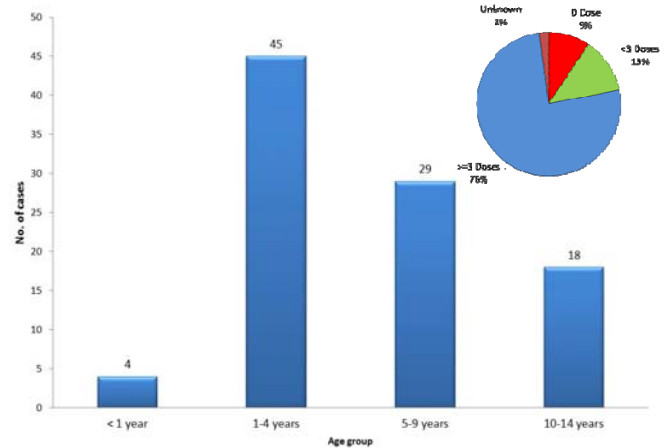
*Data as of 10 May 2019

(week no. 18)



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

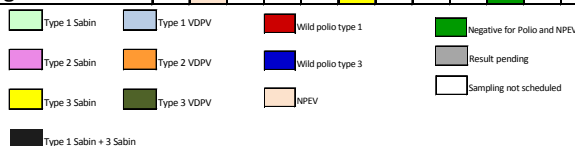
Age group and vaccination status of AFP cases, Jan-2019* (n=96)



Environmental Surveillance in Myanmar

Poliovirus and NPEV detected in Sewage samples in Myanmar, 2019*

Year	Sampling site	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
2019	Yangon		Green				Yellow				Green									
	Sitwe		Green				Green				Green				Green					
	Maung Taw		Orange				Yellow				Green				Green					



Percentage of NPEV detected in Sewage samples - 17%

Maungdaw - 25%

Sittwe - 0%

Yangon - 25%

* Data as of week no. 18, 30 April 2019

Fever with Rash Surveillance, 2019*

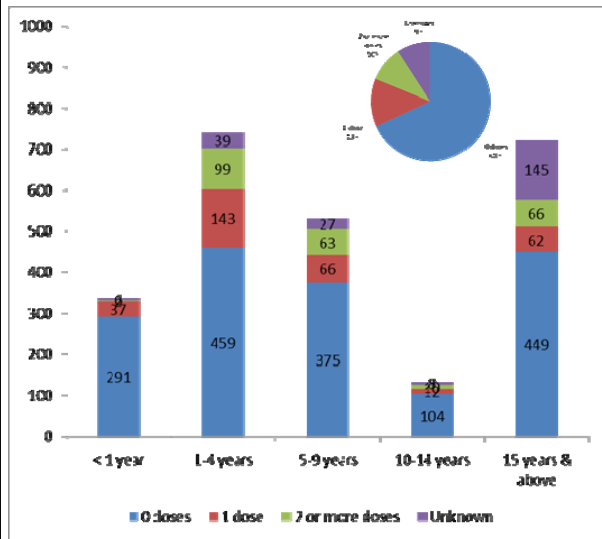
State/Region	Total Population	Expected Non-measles suspected measles Cases	Suspected cases reported	Confirmed Measles			Confirmed Rubella	Non Measles Non Rubella Cases	Pending	Annualized incidence of measles	Annualized incidence of non-measles/non-rubella suspected
				Lab-confirmed	Epi-confirmed	Clinically confirmed					
Ayeyarwady	6437373	129	269	113	0	9	0	17	130	18.95	0.26
Bago	5177071	104	552	245	51	12	0	37	207	59.49	0.71
Chin	532750	11	17	4	0	0	0	7	6	7.51	1.31
Kachin	1625316	33	26	13	0	0	0	10	3	8.00	0.62
Kayah	310330	6	50	22	1	0	1	3	23	74.11	0.97
Kayin	1664092	33	165	47	44	4	0	2	68	57.09	0.12
Magway	4327568	87	180	53	0	2	0	15	110	12.71	0.35
Mandalay	6206034	124	384	168	82	91	0	31	12	54.95	0.50
Mon	2321587	46	197	47	46	0	1	13	90	40.06	0.56
Nay Pyi Taw	1111897	22	77	23	3	4	0	7	40	26.98	0.63
Rakhine	2846882	57	124	53	0	1	1	13	56	18.97	0.46
Sagaing	5646315	113	274	35	10	0	0	77	152	7.97	1.36
Shan East	845364	17	151	32	94	0	0	3	22	149.05	0.35
Shan North	2507456	50	208	48	81	0	1	5	73	51.45	0.20
Shan South	2413792	48	209	44	119	4	0	11	31	69.19	0.46
Tanintharyi	1528308	31	61	7	0	0	0	12	42	4.58	0.79
Yangon	6848946	137	1378	782	25	44	3	101	423	124.25	1.47
National	52351081	1047	4322	1736	556	171	7	364	1488	47.05	0.70

Total suspected outbreaks— 54

Confirmed measles outbreaks— 52

Non Measles/Rubella outbreaks— 2

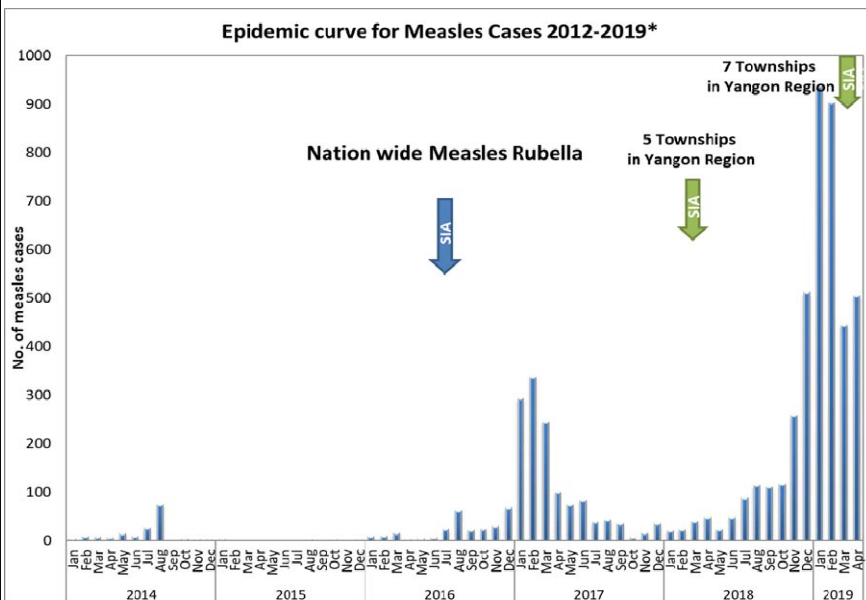
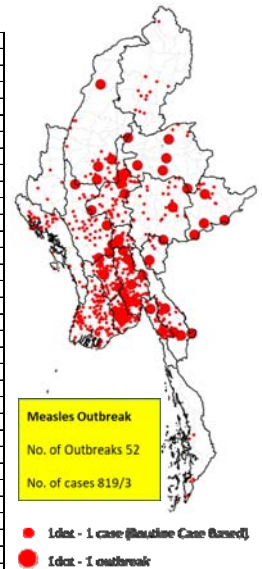
Age and Vaccination Status of confirmed Measles cases, 2019* (n=2463)



Spot Map of Measles cases 2019*

Occurrence of measles outbreak

State/Region	Township	State/Region	Township
Ayeyarwady Region	Mawlamyinegyun	Naypyitaw	Det Khi Na Thi Ri
	Pantanaw		Lewe
Bago Region	Bago	Sagaing Region	Budalin
	Kyaukkya		Chaung-U
	Kyauktaga		Hkamti
	Taungoo		Kani
	Waw		Khin-U
	Yedashe		Myinmu
	Letpadan		Sagaing
	Paungde		Tabayin
	Pyay	Shan State (East)	Kengtung
Kayah State	Hpasawng		Monghsat
Kayin State	Hlaingbwe		Mongping
	Kawkareik		Mongton
	Kyainseikgyi	Shan State (North)	Tachileik
	Myawaddy		Hsipaw
Magway Region	Aunglan		Kutkai
	Chauk		Kyaukme
	Myothit		Lashio
	Pauk	Shan State (South)	Pangsang
	Salin		Mawkmai
Mandalay Region	Amarapura		Monghsu
	Chanayethazan		Nansang
	Chanmyathazi	Tanintharyi Region	Launglon
	Kyaukse	Yangon Region	Dagon Myothit (North)
	Madaya		Dagon Myothit (Seikkan)
	Mahaaungmyay		Dagon Myothit (South)
	Thabeikkyin		Hlaingtharya
Mon State	Bilin		Insein
	Kyaikto		Mingaladon
	Mawlamyine		North Okkalapa
			Tamwe



CRS Surveillance

Total no. of serum sample received - None

Total no. of serum sample tested - None

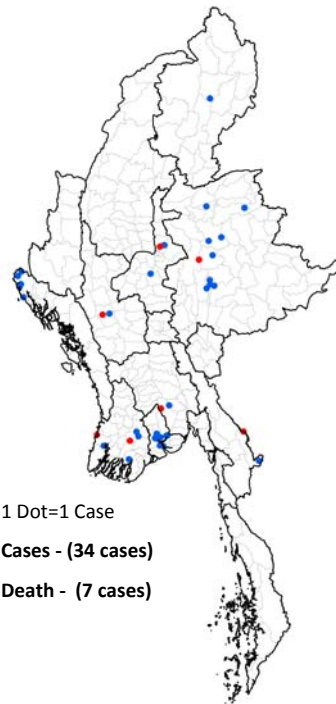
Data source: routine case based surveillance and outbreaks

* Data as of week no. 18, 30 April 2019

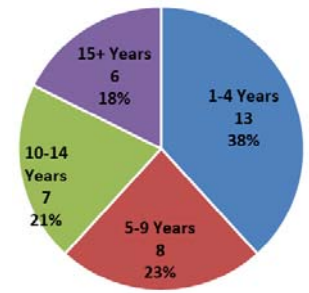
Diphtheria, 2019*

Reported Suspected Diphtheria cases and deaths in State and Region

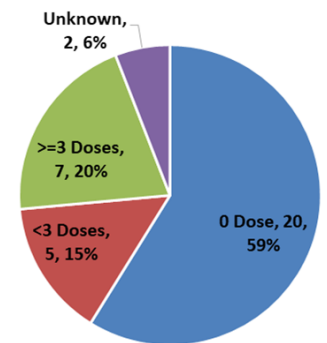
State/Region	Total no. of cases	Total no. of death
Ayeyarwady	4	2
Bago	1	1
Chin	0	0
Kachin	1	0
Kayah	0	0
Kayin	1	1
Magway	1	1
Mandalay	2	1
Mon	0	0
Nay Pyi Taw	0	0
Rakhine	5	0
Sagaing	0	0
Shan East	0	0
Shan North	4	0
Shan South	5	1
Tanintharyi	0	0
Yangon	10	0
Grand Total	34	7



Suspected Diphtheria Cases by Age group



Immunization Status of Suspected Diphtheria Cases



Pertussis (Whooping Cough), 2019*

Reported Pertussis cases and deaths in State and Region

State/Region	Township	Cases	Deaths
Shan East	Mongping	1	0

Age group	0 Dose	<3 Doses	>=3 Doses	Total
5-9 Years	1	0	0	1
Grand Total	1	0	0	1

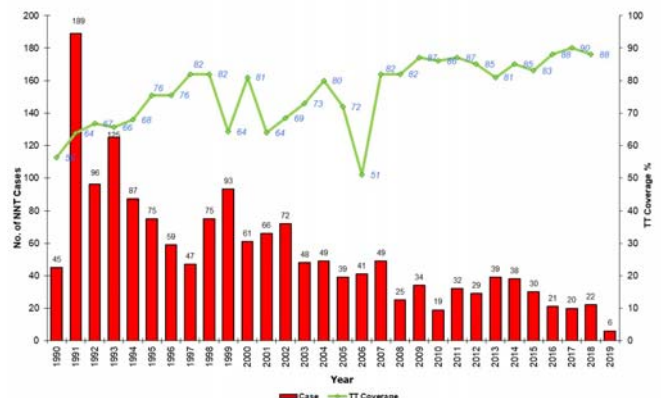
Neonatal Tetanus, 2019*

Reported NNT cases and deaths in State and Region

State/Region	Township	Cases	Deaths
Kachin	Tsawlaw	1	0
	Waingmaw	1	1
Rakhine	Sittwe	1	0
Shan (North)	Hopang	1	1
Shan (South)	Loilen	1	1
	Nansang	1	1
Total Reported		6	4

Place of birth among reported NNT cases	Reported NNT cases are delivered by	Vaccination status of mother during pregnancy	
Hospital	Doctor	0 Dose	5
Health Center	BHS		
Private Hospital	Trained TBA	1 Dose	1
Home	TBA		
Other	Other		
	Not Attended	>=2 Doses	
Unknown	Unknown		
Total	Total	Total	6

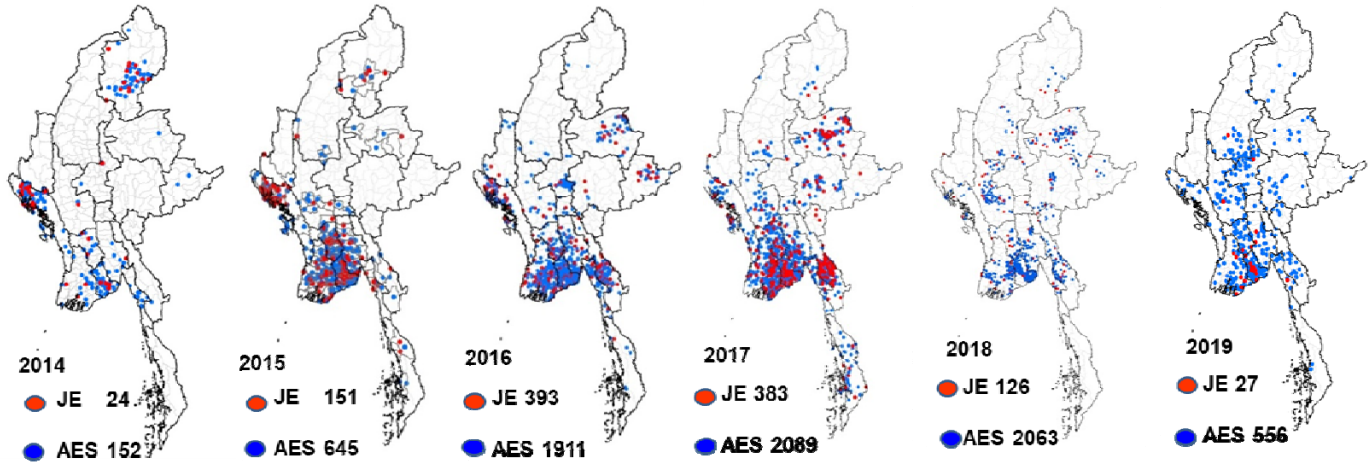
TT2 coverage and Neonatal tetanus cases (1990-2019*)



* Data as of week no. 18, 30 April 2019

Acute Encephalitis Syndrome

Reported AES cases & JE positive cases (2014-2019*), Myanmar

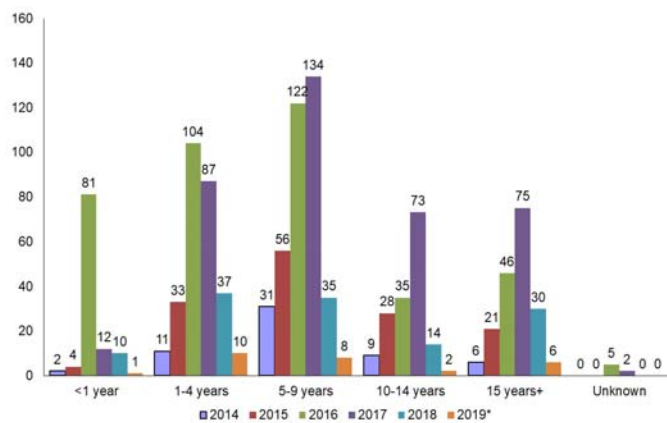


1 Dot = 1 Case

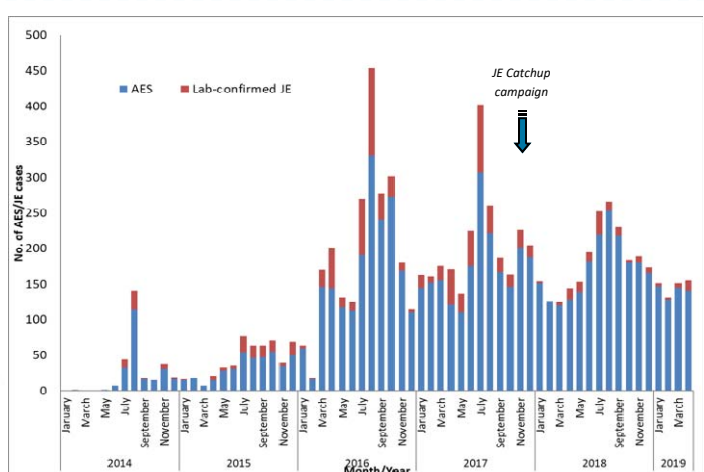
Region/State-wise Occurrences of JE 2014-2019*

Region/State	2014		2015		2016		2017		2018		2019	
	AES	JE Positive	AES	JE Positive	AES	JE Positive	AES	JE Positive	AES	JE Positive	AES	JE Positive
Ayeyawady	12	4	90	21	231	45	259	51	185	15	45	7
Bago	16	7	86	28	213	53	256	49	200	11	56	5
Chin	0	0	1	1	11	3	2	1	4	1	0	0
Kachin	10	1	12	5	8	1	7	2	14	3	6	0
Kayah	0	0	0	0	1	1	15	6	15	3	7	0
Kayah	0	0	6	1	136	37	165	65	63	10	16	0
Magway	1	1	10	4	30	4	58	6	122	17	38	1
Mandalay	5	3	2	0	122	19	6	1	155	2	46	0
Mon	5	0	29	5	60	8	61	13	50	4	12	1
Naypyitaw	0	0	1	0	5	2	12	1	15	1	1	0
Rakhine	47	2	126	46	120	26	88	17	60	4	15	0
Sagaing	0	0	6	1	52	9	18	2	83	5	25	1
Shan East	0	0	1	0	29	8	5	2	6	2	1	0
Shan North	0	0	4	0	90	16	88	42	83	19	11	0
Shan South	0	0	0	0	14	2	60	16	82	5	16	0
Tanintharyi	1	0	6	3	18	4	45	11	19	0	2	0
Yangon	55	6	265	36	771	155	889	92	881	24	244	12
Hospital Data							55	6	26	0	15	0
Total	152	24	645	151	1911	393	2089	383	2063	126	556	27

JE incidence: lab confirmed cases by age groups 2014-2019*



Lab confirmed and reported AES cases by months 2014-2019*



* Data as of week no. 18, 30 April 2019

Incidence of Vaccine preventable diseases (VPD)

	2014	2015	2016	2017	2018	2019*
Diphtheria	29	87	136	68	187	34
Measles	122	6	266	1729	1985	2463
Pertussis	5	5	2	4	28	1
Polio	0	0	0	0	0	0
Rubella	30	34	10	6	13	7
Neonatal tetanus	32	30	21	20	22	6
Japanese encephalitis	24	151	393	383	126	27

* Data as of week no. 18, 10 May 2019

Incidence of Vaccine Preventable Diseases (VPD) by State and Region, 2019*

State/Region	Diphtheria	Pertussis	Neonatal tetanus	Japanese encephalitis
Ayeyarwady	4	0	0	7
Bago	1	0	0	5
Chin	0	0	0	0
Kachin	1	0	2	0
Kayah	0	0	0	0
Kayin	1	0	0	0
Magway	1	0	0	1
Mandalay	2	0	0	0
Mon	0	0	0	1
Nay Pyi Taw	0	0	0	0
Rakhine	5	0	1	0
Sagaing	0	0	0	1
Shan East	0	1	0	0
Shan North	4	0	1	0
Shan South	5	0	2	0
Tanintharyi	0	0	0	0
Yangon	10	0	0	12
National	34	1	6	27

* Data as of week no. 18, 10 May 2019

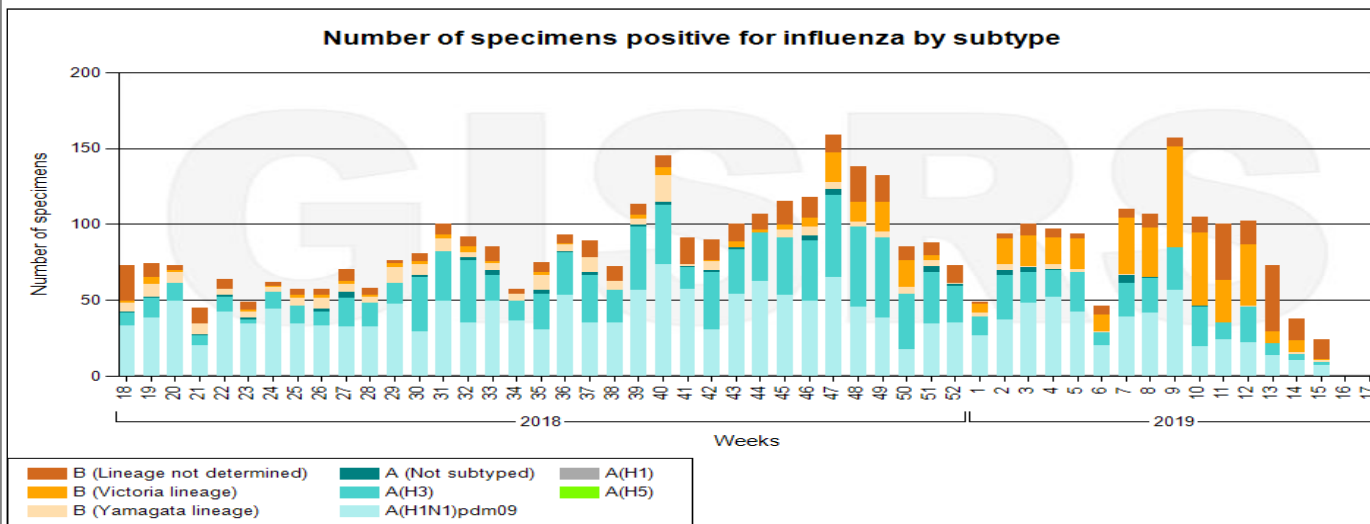
DISEASE OUTBREAK 2019*

No.	Disease	Jan-March			April		
		Events	Cases	Deaths	Events	Cases	Deaths
1.	Anthrax	1	2	0	0	0	0
2.	Chicken pox	11	311	1	0	0	0
3.	Diarrhoea	4	81	1	1	15	2
4.	Diphtheria	24	28	6	5	6	1
5.	Food Poisoning	14	568	0	2	210	0
6.	Measles	50	586	3	2	233	0
7.	Meningitis	5	5	1	1	1	1
8.	Mumps	0	0	0	0	0	0

* Data as of week no. 18, 30 April 2019

Myanmar influenza surveillance report

Number of specimens positive for influenza by Southern Hemisphere subtype

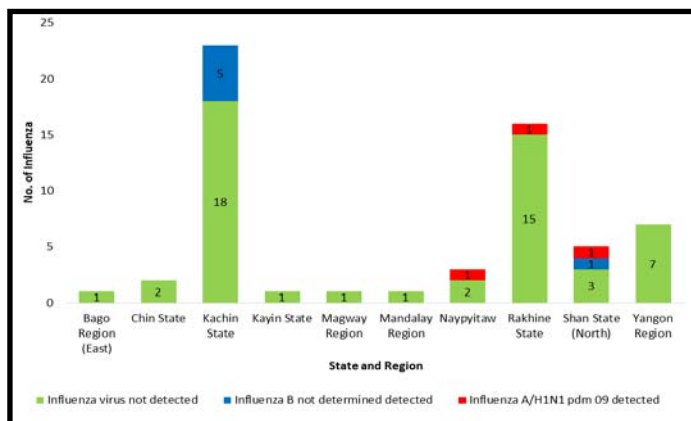


Myanmar Influenza Surveillance report, 2019* (Hospital Distribution)				
Name of Hospital	A/H1N1 pdm 09 detected	B not determined detected	virus not detected	Total
Sentinel Hospital				
1000 Bedded General Hospital, Nay Pyi Taw	0	0	0	0
Thingangyun Sanpya General Hospital (T.G.H)	1	0	3	4
Mandalay General Hospital	0	0	0	0
Muse Township Hospital	1	1	3	5
Myawaddy District Hospital	0	0	1	1
Myit Kyi Na General Hospital	0	5	18	23
Sittwa General Hospital	0	0	15	15
Yangon General Hospital (Y.G.H)	0	0	4	4
Other Hospital/Source	1	0	7	8
Total	3	6	51	60

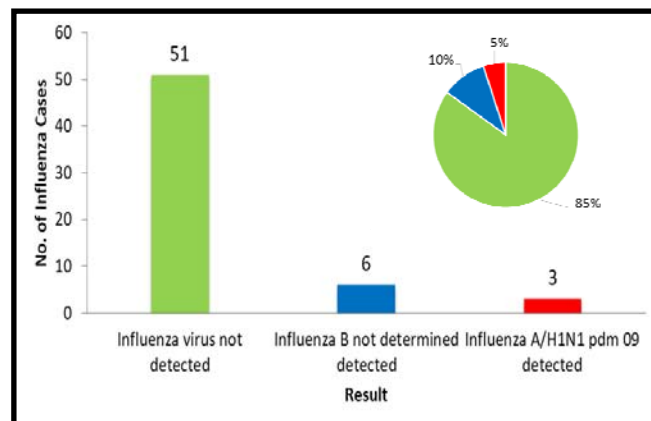
LI/SARI sentinel surveillance sites



Case Distribution by State/ Region, 2019*



Specimens Positives for Influenza by Subtypes 2018* (n=60)



* Data as of week no. 18, 30 April 2019

Field Epidemiology Training Programme (FETP)

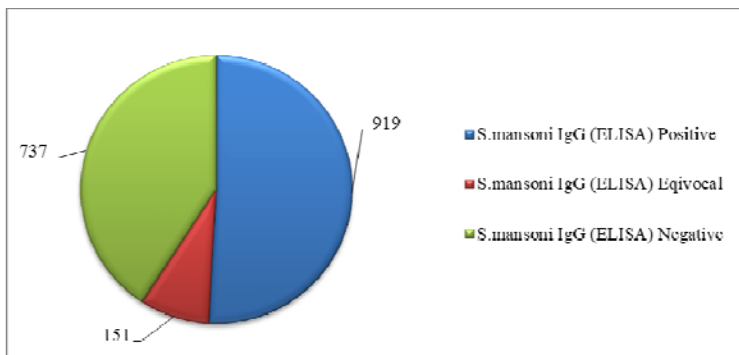
To strengthen capacity of human resource for preparedness, response to any kind of public health emergency events, the first cohort of Field Epidemiology Training Programme (Intermediate -9 months course) has been launched on 24 July 2018 in Nay Pyi Taw, Myanmar. In the development of epidemiological skills of health staff and on the job training on disease surveillance, outbreak investigation, disaster health management, there are five workshops and four field intervals in this course and course modules are adapted from US CDC guidelines. This course has been conducting from July 2018 to April 2019 and 15 medical officers from various states and regions under Department of Public Health participating in this course. The FETP fellows conducted a group field project on prevalence of schistosomiasis among rural community in Sittwe, Rakhine State in March 2019. On April 8, 2019, all 15 FETP fellows are awarded course completion certificate as witnessed by high level officials of MoHS and collaborating partners.



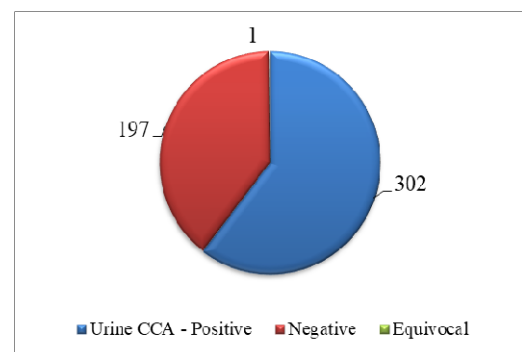
Myanmar FETP - Our Strength for the Country
Changing Mindset & Attitude
Do Good Job with Good Practices
“Save Lives”

Action Plan for Schistosomiasis

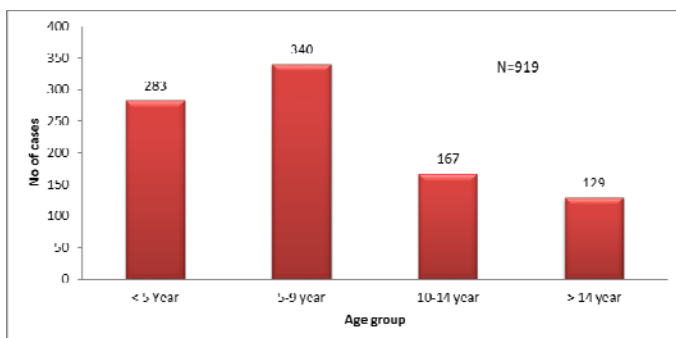
Schistosomiasis is a neglected tropical disease that occurs as an acute and chronic parasitic disease caused by trematodes (blood flukes) of the genus *Schistosoma* leading to public health burden and economic impact in developing countries that require attention for monitoring and surveillance as an input towards the policy framework. Since October 2016 suspected schistosomiasis cases from the Rakhine State were reported by a dedicated paediatrician, Dr. Hla Mu, a Consultant Paediatrician, Sittwe General Hospital. Suspected cases were confirmed by IgG ELISA test and urine cathodic antigen. As of April 2019, 2274 cases of suspected schistosomiasis were reported and 1774 cases were tested with ELISA test and 500 cases were tested by urine cathodic antigen. 919 out of 1774 suspected cases were IgG (ELISA) positive and 302 out of 500 suspected cases were positive by urine cathodic antigen. Field surveys will be carried out for endemicity mopping of schistosomiasis in collaborating with National Health Laboratory, State and Region Health Departments and other partners. Based on these findings, National Plan for Schistosomiasis prevention and control will be developed. Capacity building Irai— will be held for upgrading the skills of epidemiology, clinical and laboratory diagnosis of schistosomiasis in collaborating with international partners.



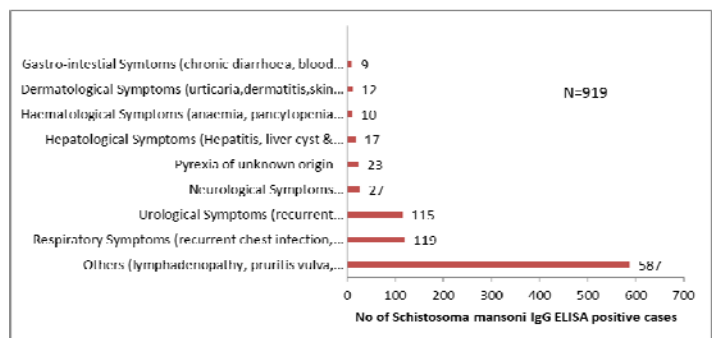
Detection of Schistosomiasis by *Schistosoma mansoni* IgG ELISA, Rakhine State (1-10-2016) to (30-4-2019) (n=1774)



Detection of Schistosomiasis by Urine CCA, Rakhine State (1-10-2016) to (30-4-2019) (n=500)



Age Distribution of Schistosomiasis detected by *Schistosoma mansoni* IgG ELISA, Rakhine State (1-10-2016) to (30-4-2019)



Townships Distribution of Schistosomiasis detected by *Schistosoma mansoni* IgG ELISA, Rakhine State (1-10-2016) to (30-4-2019)

* Data as of week no. 18, 30 April 2019

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-vesicular) 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.

Congenital Rubella Syndrome CRS Surveillance

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	$\frac{\text{No. of discarded non-polio AFP cases among 15 years of age group}}{\text{Total number of children < 15 years of age}} \times 100000$
2. Reported AFP cases with 2 specimens collected = 14 days since onset.	= 80%	$\frac{\text{No of AFP cases with 2 specimens collected within 14 days of paralysis onset}}{\text{Total number of children < 15 years of age}} \times 100$

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)

CEU produced this bulletin with the support of EPI Unit, WHO Country Office Myanmar