Ministry of Health and Sports
Department of Public Health
Central Epidemiology Unit
Monthly Epidemiology BULLETIN
February, 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	2	2	0.70	0.70	100
Bago	1,282,089	27	7	7	3.15	3.15	100
Chin	187,080	2	2	2	6.18	6.18	100
Kachin	442,109	8	0	0	0.00	0.00	100
Kayah	94,003	2	0	0	0.00	0.00	100
Kayin	521,924	11	2	2	2.21	2.21	100
Magway	985,189	19	5	5	2.93	2.93	100
Mandalay	1,442,973	28	6	6	2.40	2.40	100
Naypyitaw	288,213	5	0	0	0.00	0.00	100
Mon	591,424	11	2	2	1.95	1.95	100
Rakhine	833,457	17	1	1	0.69	0.69	100
Sagaing	1,413,760	33	7	7	2.86	2.86	71
Shan East	227,670	4	1	1	2.54	2.54	100
Shan North	722,544	12	1	1	0.80	0.80	100
Shan South	735,534	12	5	4	3.93	3.14	100
Taninthayi	454,875	11	3	3	3.81	3.81	100
Yangon	1,550,049	29	2	2	0.75	0.75	100
Total	**13,425,911**	**264**	**46**	**45**	**1.98**	**1.94**	**98**

Acute Flaccid Paralysis (AFP)

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

Annualized expected Non Polio AFP Cases (as of week.9) - 46

Reported AFP cases - 46

Discarded as non-polio AFP cases– 45

Annualized AFP rate - 1.98

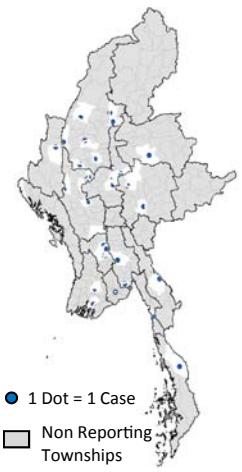
Annualized Non-polio AFP rate - 1.94

Percentage of adequate stool collection - 98%

Pending for classification - 1

**Data as of 28 February 2019*

(week no.9 2019)

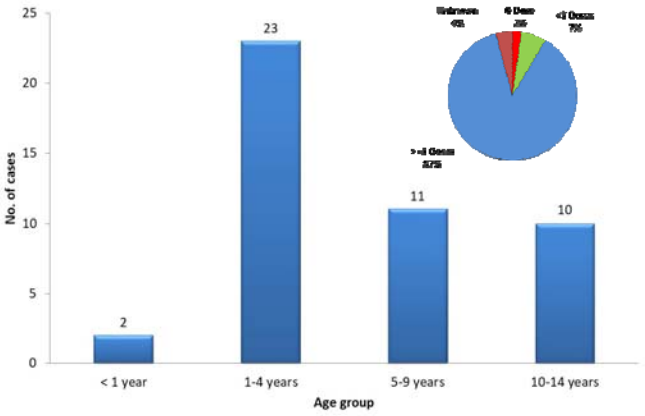


Spot Map of AFP Cases

Annualized Non polio AFP rate

% of Adequate stool collection

Age group and vaccination status of AFP cases, Feb-2019* (n=46)



Environmental Surveillance in Myanmar

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

Sampling site	1	2	3	4	5	6	7	8	9
Yangon									
Sitwe									
Maung Taw									

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

Percentage of NPEV detected in Sewage samples – 17%

Maungdaw - 50%

Sittwe - 0%

Yangon - 0%

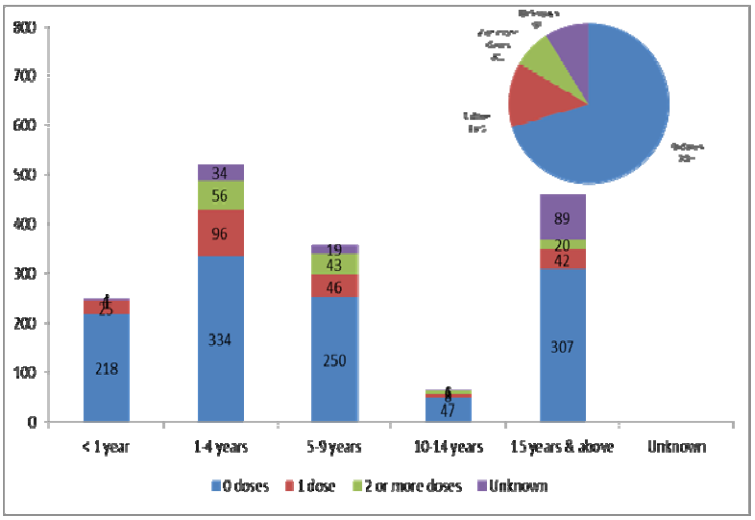
* Data as of week no. 9, 28 February 2019

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	154	104	0	9	0	13	28	17.55	0.20
Bago	5177071	104	338	160	37	4	0	22	115	38.83	0.42
Chin	532750	11	4	1	0	0	0	2	1	1.88	0.38
Kachin	1625316	33	4	3	0	0	0	1	0	1.85	0.06
Kayah	310330	6	9	3	0	0	0	0	6	9.67	0.00
Kayin	1664092	33	137	37	36	2	0	2	60	45.07	0.12
Magway	4327568	87	92	28	0	1	0	7	56	6.70	0.16
Mandalay	6206034	124	187	98	65	7	0	16	1	27.39	0.26
Mon	2321587	46	54	22	4	0	0	9	19	11.20	0.39
Nay Pyi Taw	1111897	22	34	12	3	2	0	5	12	15.29	0.45
Rakhine	2846882	57	78	36	0	1	1	13	27	13.00	0.46
Sagaing	5646315	113	238	19	12	0	0	72	135	5.49	1.28
Shan East	845364	17	45	7	27	0	0	1	10	40.22	0.12
Shan North	2507456	50	60	9	27	0	0	1	23	14.36	0.04
Shan South	2413792	48	79	17	45	2	0	7	8	26.51	0.29
Tanintharyi	1528308	31	35	5	0	0	0	5	25	3.27	0.33
Yangon	6848946	137	1114	768	10	23	2	91	220	116.95	1.33
National	**52351081**	**1047**	**2662**	**1329**	**266**	**51**	**3**	**267**	**746**	**31.44**	**0.51**

Total suspected outbreaks– 50 ***Confirmed measles outbreaks—48*** ***Non Measles/Rubella outbreaks—2***

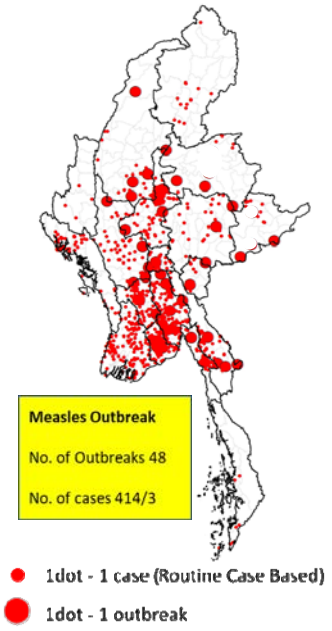
Age and Vaccination Status of Confirmed Measles cases, 2019* (n=1646)

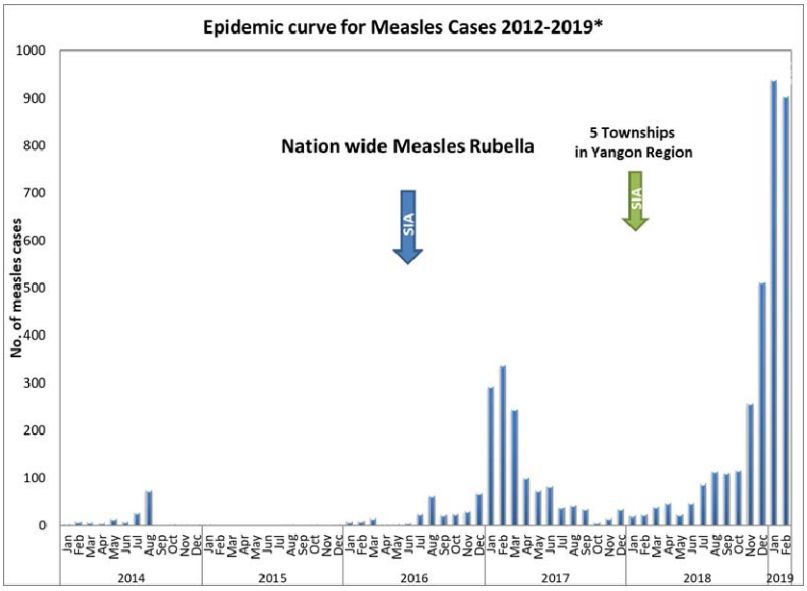


Occurrence of measles outbreak

State/Region	Township
Ayeyarwady Region	Mawlamyinegyun
Bago Region (East)	Bago
	Kyaukkyi
	Kyauktaga
	Taungoo
	Waw
	Yedashe
	Letpadan
	Paungde
Kayin State	Hlaingbwe
	Kawkareik
	Kyainseikgyi
Magway Region	Aunglan
	Chauk
	Myothit
Mandalay Region	Amarapura
	Chanayethazan
	Chanmyathazi
	Kyaukse
	Madaya
	Thabeikkyin
Mon State	Bilin
Naypyitaw	Det Khi Na Thi Ri
	Lewe
Sagaing Region	Chaung-U
	Hkamti
	Tabayin
Shan State (East)	Tachileik
Shan State (North)	Kyaukme
	Lashio
Shan State (South)	Monghsu
	Nansang
Yangon Region	Dagon Myothit (North)
	Dagon Myothit (Seikkan)
	Dagon Myothit (South)
	Insein
	Mingaladon
	North Okkalapa
	Tamwe

Spot Map of Measles cases 2019*





CRS Surveillance

Total no. of serum sample received - None

Total no. of serum sample tested - None

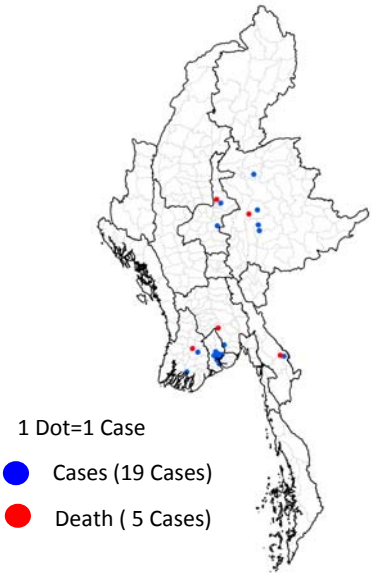
Data source: routine case based surveillance and outbreaks

* Data as of week no. 9, 28 February 2019

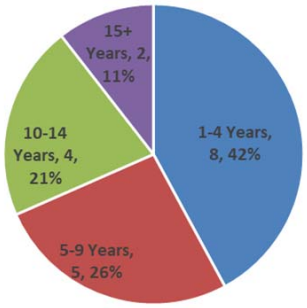
Diphtheria, 2019*

Reported Suspected Diphtheria Cases and Deaths in State and Region

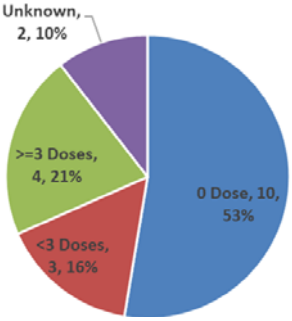
State/Region	Total no. of cases	Total no. of death
Ayeyarwady	2	1
Bago	1	1
Chin	0	0
Kachin	0	0
Kayah	0	0
Kayin	1	1
Magway	0	0
Mandalay	2	1
Mon	0	0
Nay Pyi Taw	0	0
Rakhine	0	0
Sagaing	0	0
Shan East	0	0
Shan North	1	0
Shan South	3	1
Tanintharyi	0	0
Yangon	9	0
Grand Total	19	5



Suspected Diphtheria Cases by Age group



Immunization Status of Suspected Diphtheria Cases



Pertussis (Whooping Cough), 2019*

No Reported whooping cough case in Feb, 2019

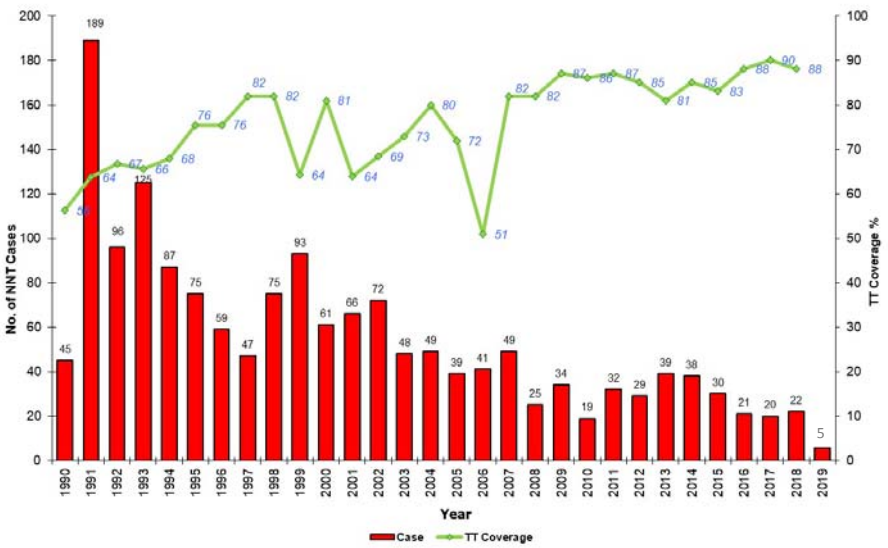
Neonatal Tetanus, 2019*

Reported NNT cases and deaths in State and Region

State/Region	Township	Cases	Deaths
Kachin State	Tsawlaw	1	0
	Waingmaw	1	1
Rakhine State	Sittwe	1	0
Shan State (South)	Loilen	1	1
	Nansang	1	1
Total Reported		**5**	**3**

Place of birth among reported NNT cases		Reported NNT cases are delivered by		Vaccination stauts of mother during	
Hospital	0	Doctor	0	0 Dose	4
Health Center	0	BHS	0		
Private Hospital	0	Trained TBA		1 Dose	1
Home	4	TBA	2		
Other	0	Other	1	>=2 Doses	0
Unknown	1	Not Attended	2		
		Unknown	0		
Total	**5**	**Total**	**5**	**Total**	**5**

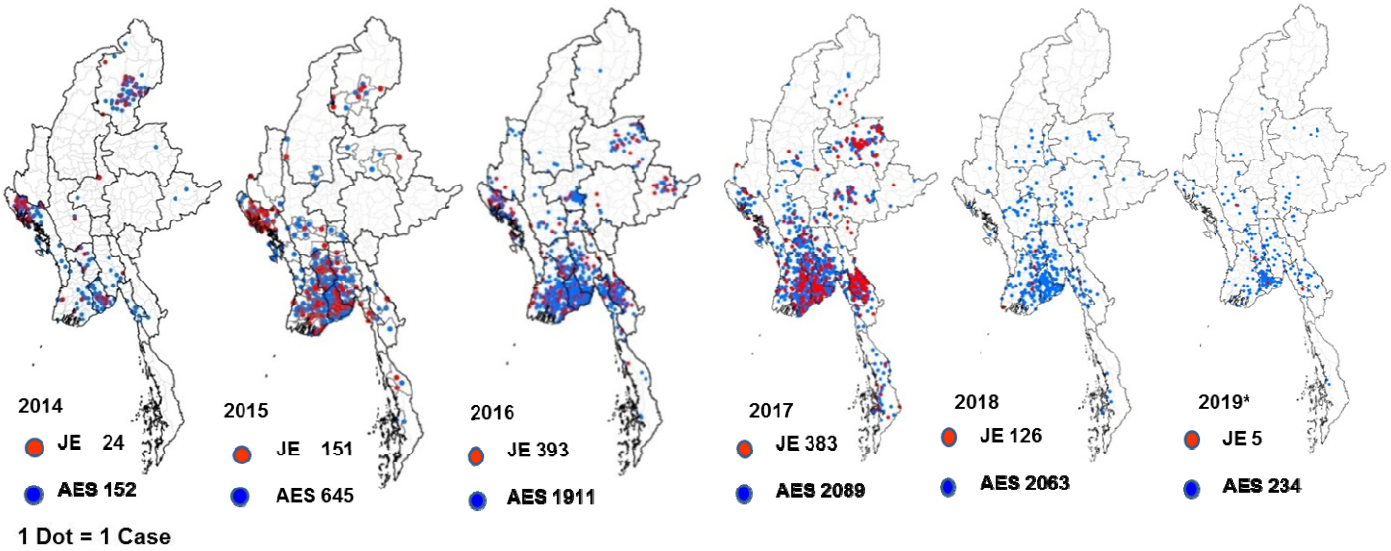
TT2 coverage and Neonatal tetanus cases (1990-2018)



* Data as of week no. 9, 28 February 2019

Acute Encephalitis Syndrome

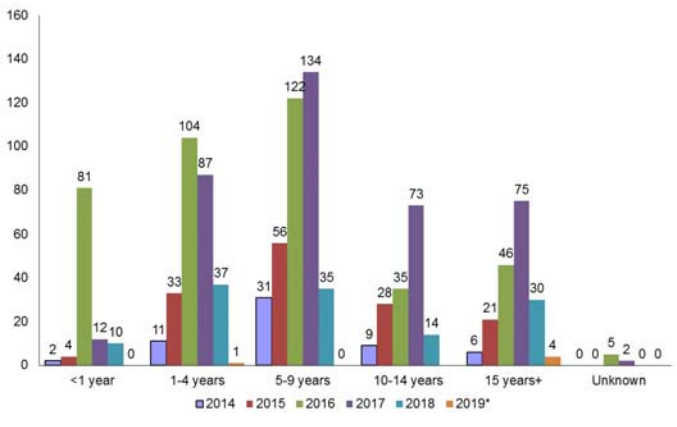
Reported AES cases & JE positive cases (2014-2019*), Myanmar



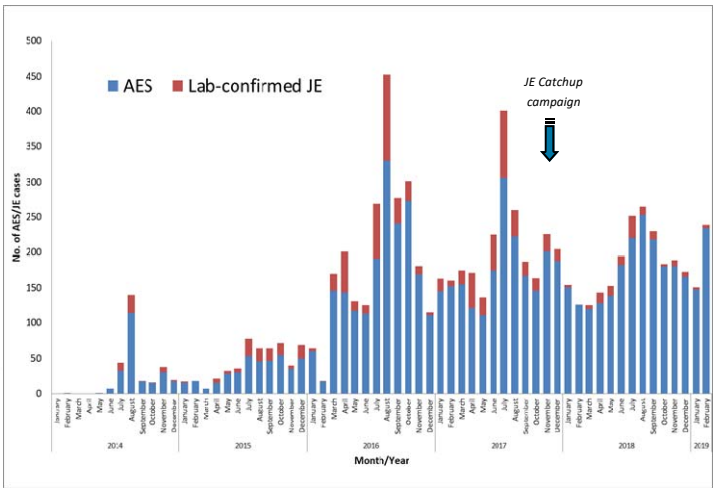
Region/State-wise Occurrences of JE 2014-2019*

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	13	0
Bago	16	7	86	28	218	58	296	40	200	11	26	0
Chin	0	0	1	1	11	3	2	1	4	1	0	0
Kachin	10	1	11	5	8	1	7	2	14	3	0	0
Kayah	0	0	0	0	1	1	15	6	15	3	3	0
Kayin	0	0	6	1	136	27	165	65	63	10	11	0
Magway	1	1	10	4	50	4	38	6	122	17	12	0
Mandalay	5	3	2	0	122	19	6	1	155	2	0	0
Mon	5	0	29	5	60	8	61	13	50	4	9	1
Naypyitaw	0	0	1	0	5	1	11	1	15	1	1	0
Rakhine	47	2	126	46	120	26	88	17	60	4	4	0
Sagaing	0	0	6	1	52	9	18	2	83	5	1	0
Shan East	0	0	1	0	29	8	5	2	6	2	0	0
Shan North	0	0	4	0	90	16	88	42	83	19	3	0
Shan South	0	0	0	0	14	1	60	16	91	5	6	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	143	4
Hospital Data							55	6	26	0	0	0
Total	152	24	645	151	1911	393	2089	383	2063	126	234	5

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. 9, 28 February 2019

Incidence of Vaccine preventable diseases (VPD)

	2013	2014	2015	2016	2017	2018	2019*
Diphtheria	**38**	**29**	**87**	**136**	**68**	**178**	**20**
Measles	**1010**	**122**	**6**	**266**	**1729**	**1389**	**1646**
Pertussis	**14**	**5**	**5**	**2**	**4**	**28**	**0**
Polio	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Rubella	**23**	**30**	**34**	**10**	**6**	**13**	**3**
Neonatal tetanus	**39**	**32**	**30**	**21**	**20**	**22**	**5**
Japanese encephalitis	**17**	**24**	151	**393**	**383**	**126**	**5**

* Data as of week no. 9, 28 February 2019

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

State/Region	Diphtheria	Pertussis	Neonatal tetanus	Japanese encephalitis
Ayeyarwady	2	0	0	0
Bago	1	0	0	0
Chin	0	0	0	0
Kachin	1	0	2	0
Kayah	0	0	0	0
Kayin	0	0	0	0
Magway	0	0	0	0
Mandalay	2	0	0	0
Mon	0	0	0	1
Nay Pyi Taw	0	0	0	0
Rakhine	0	0	1	0
Sagaing	0	0	0	0
Shan East	0	0	0	0
Shan North	2	0	0	0
Shan South	3	0	2	0
Tanintharyi	0	0	0	0
Yangon	9	0	0	4
National	**20**	**0**	**5**	**5**

* Data as of week no. 9, 28 February 2019

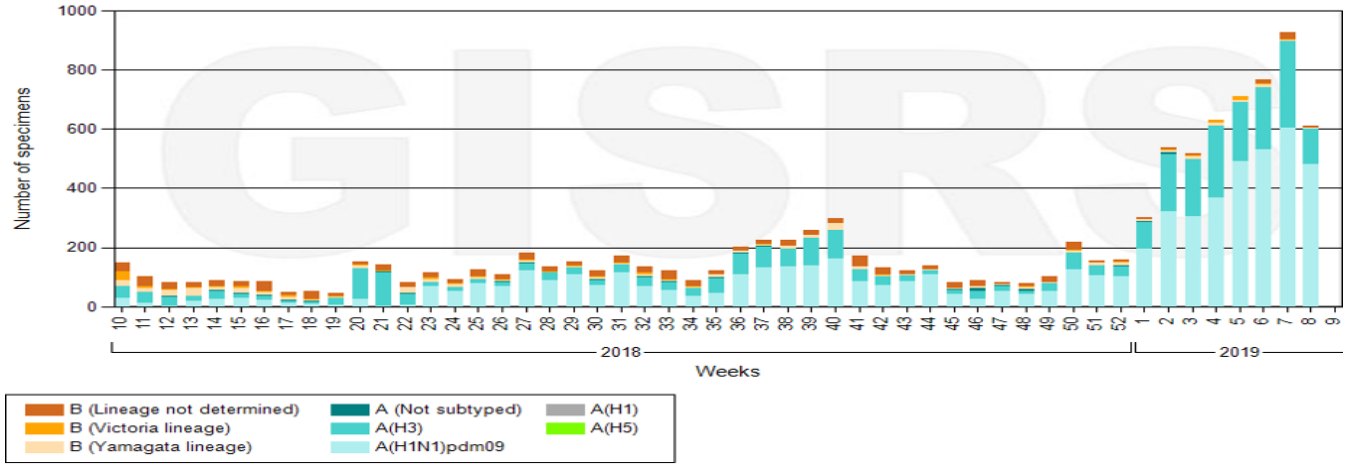
DISEASE OUTBREAK 2019*

No.	Disease	January			February		
		Events	Cases	Deaths	Events	Cases	Deaths
1.	Anthrax	1	2	0	0	0	0
2.	Chicken pox	5	201	0	3	75	0
3.	Diarrhoea	1	34	0	2	38	1
4.	Diphtheria	13	13	3	6	6	2
5.	Food Poisoning	4	77	0	8	438	0
6.	Measles	20	207	1	28	207	2
7.	Meningitis	3	3	0	2	2	1
8.	Mumps	0	0	0	0	0	0

* Data as of week no. 9, 28 February 2019

Myanmar influenza surveillance report

Number of specimens positive for influenza by Southern Hemisphere subtype

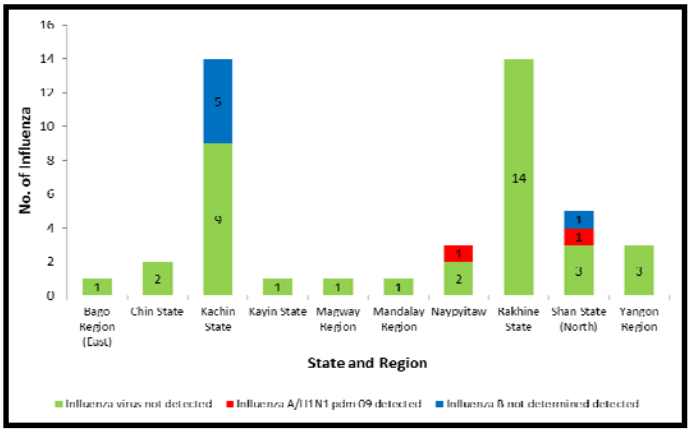


Myanmar Influenza Surveillance report, 2019* (Hospital Distribution)

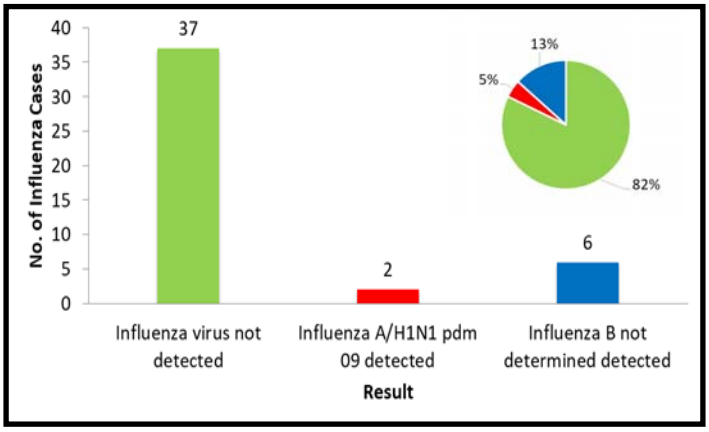
Name of Hospital	A/H1N1 pdm 09 detected	B not determined detected	virus not detected	Total
Sentinal Hospitel				
1000 Bedded General Hospital, Nay Pyi Taw	0	0	0	0
Thingangyun Sanpya General Hospital (T.G.H)	0	0	0	0
Mandalay General Hospital	0	0	0	0
Muse Township Hospital	1	1	3	5
Myawaddy District Hospital	0	0	1	1
Myit Kyi Na General Hospital	0	5	9	14
Sittwe General Hospital	0	0	14	14
Yangon General Hospital (Y.G.H)	0	0	3	3
Other Hospital/Source	**1**	**0**	**7**	**8**
Total	**2**	**6**	**37**	**45**

ILI/SARI sentinel surveillance sites

Case distribution by State/Region, 2019*



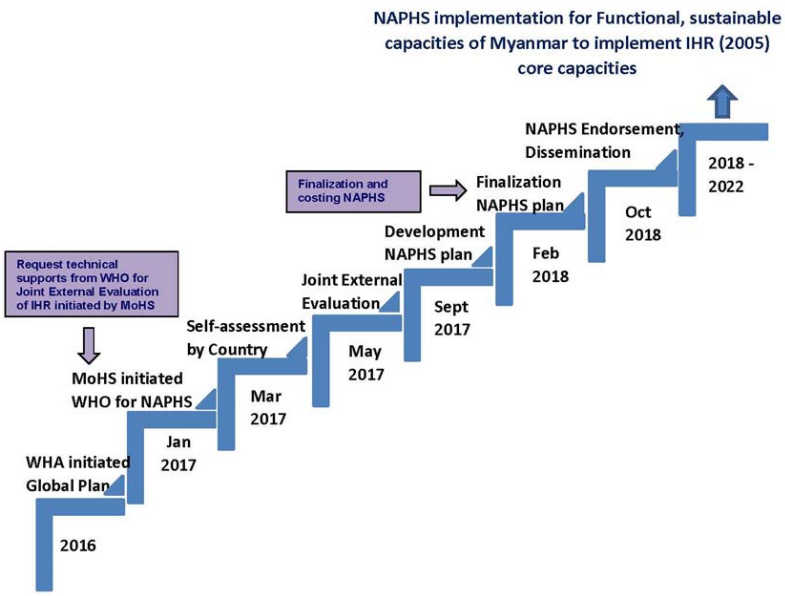
Specimens Positives for Influenza by Subtypes 2018* (n=45)



* Data as of week no. 9, 28 February 2019

National Action Plan for Health Security (NAPHS)

Under International Health Regulation (IHR 2005), Myanmar is implementing IHR to detect and response timely to Public Health Emergency of International Concern. The core capacities were assessed, monitored and strengthened through the Joint External Evaluation (JEE) with the tremendous effort of Ministry of Health and Sports and related government ministries, national and international NGOs. In cooperation with related ministries and partners, Department of Public Health successfully carried out Joint External Evaluation (JEE) to the assess on 19 technical areas on International Health Regulation and Global Health Security Agenda. According to the recommendations of JEE, the Myanmar National Action Plan for Health Security (NAPHS) has been finalized in late 2018 and disseminated to stakeholders from relevant ministries and partners. Annual Operation Plan for implementation will be crafted in pate 2019.



Greater Mekong Sub-region Health Security Project

GMS countries specifically Cambodia, Lao PDR, Myanmar and Vietnam (CLMVs) had loan for the health security project from ADB with total amount of $125 million. In these, Myanmar had received a $12 million loan and the project period is from July 2017 to March 2022. The Ministry of Health and Sports(MOHS) is the executing agency (EA) and the Implementation Egencies (IA) are Central Epidemiology Unit (CEU) under the Department of Public Health (DoPH), Department of Medical Services (DoMS), the National Health Laboratory (NHL) and 12 township health departments from five States and one Region namely Shan (N) State, Shan (E) State, Kayah State, Kayin State, Mon State and Thanintharyi Region.

The Project has three outputs:

Output 1: Regional cooperation and communicable disease control in border areas improved

Output 2: National disease surveillance and outbreak response systems strengthened

Output 3: Laboratory services and hospital infection prevention and control improved

In Year 2019, 2nd year implementation of GMS-Health Security Project, the project implemented and supported to Field Epidemiology Training Program – (9 months) Intermediate Course, Development of Core Capacity Assessment tools for Point of Entry (PoE), Central level Training on Communicable Disease Surveillance and Disease outbreak and response measure, workshop on laboratory quality and biosafety, workshop on development of Action Plan for IPC, Hosting Regional events "Regional Workshop on Surveillance and Research on AMR and APSED Monitoring.

The plans until the end of Year 2019 are Hosting Regional workshops on Hospital Acquired Infection and Simulation Exercise, Cross Border Meeting for Disease surveillance, State/Regional level Cascade Trainings on Communicable Disease Surveillance, FETP/RRT trainings, VBDC workshop and township level trainings, Township level implementation of community mobile clinic operation and sample referral, Capacity building on case management of Highly infectious patient, Training on Laboratory quality improvement and Biosafety

* Data as of week no. 9, 28 February 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	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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