



ACUTE MENINGITIS-ENCEPHALITIS SYNDROME SURVEILLANCE CASES IN THE PHILIPPINES

Introduction

The Epidemiology Bureau (EB) mandated to oversee disease surveillance functions. It established the Philippine Integrated Disease Surveillance and Response (PIDSR) system in 2007 under which the Bacterial Meningitis and Acute Encephalitis Syndrome (AES) surveillance falls. An integrated surveillance for Acute Meningitis-Encephalitis Syndrome (AMES) Surveillance was initiated because both AES and bacterial meningitis present as acute Central Nervous System (CNS) infections. With such overlap in the case presentations, this may result in difficulties in distinguishing the two syndromes. Moreover, cerebrospinal fluid (CSF) is important in the diagnosis and laboratory confirmation of both disorders.

Acute Encephalitis Syndrome (AES) is an illness clinically characterized by fever, change in mental status and/or new onset of seizures (excluding simple febrile seizures in children). AES is used as a surrogate syndrome for Japanese Encephalitis (JE) cases in surveillance. In the Philippines, JE has been detected in swine and mosquitoes, respectively. JE is believed to be endemic in the whole country with laboratory confirmed infections from various parts of the country.

Majority of the bacterial meningitis affecting young children are caused by three vaccine-preventable organisms: *Haemophilus influenza* type b (Hib), *Streptococcus pneumoniae* and *Neisseria meningitidis*. In the Philippines, the surveillance system targets bacterial meningitis of all age groups. These organisms cause severe invasive disease affecting the central nervous system (CNS) (meningitis), lungs (pneumonia) and blood (sepsis).

Trend

A total of 370 AMES suspected cases were reported from selected sentinel sites from January 1 to July 4, 2015 (Figure 1). Of these, 238 specimens (CSF) were collected (Table 1). There were 16 (7%) laboratory confirmed AMES cases as follows: 11 cases of *Japanese Encephalitis*, 4 cases of *Streptococcus Pneumoniae* and 1 case of *Haemophilus Influenzae type b* (Figure 2). One remaining sentinel site is still pending (Table 1). Most (23%) of the cases were reported in May of this year.

Geographic distribution

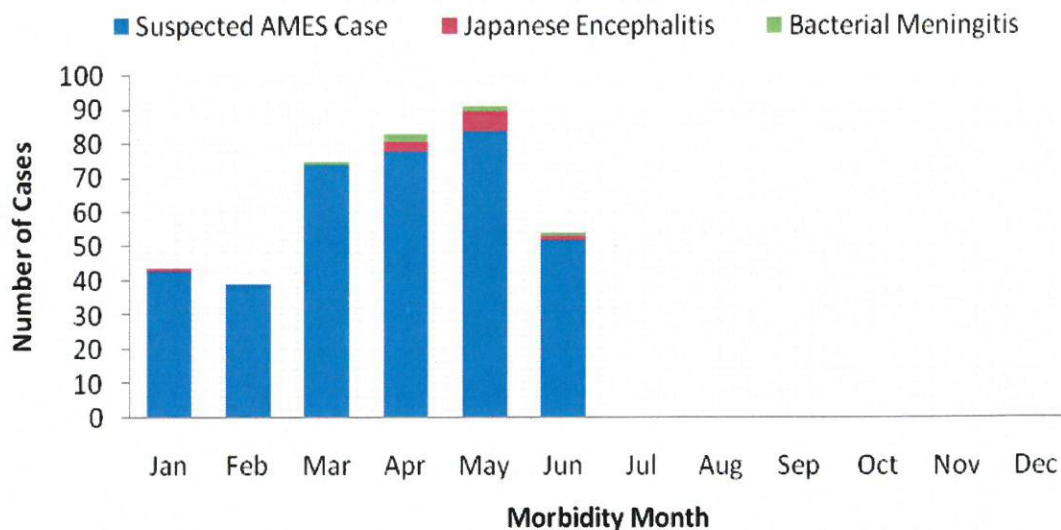
The distribution of suspected AMES cases varied considerably among the sentinel sites (Figure 2) and regions (Figure 5). Most of the reported cases were from Jose B. Lingad Memorial Hospital (23%) and Vicente Sotto Memorial Medical Center (17%) (Figure 2).

Profile of cases

Fourty-two percent of suspected AMES cases are 1 to 10 years old (Figure 3). Fifty-six percent of the suspected AMES cases were male (Figure 3). Among the suspected AMES cases, 39% received vaccinations which are measles vaccine, MMR, *Haemophilus Influenza* type b, meningococcal vaccine, Pneumococcal Conjugated Vaccine 10 and Pneumococcal Conjugated Vaccine 13 (Figure 4). Thirty-two among the suspected AMES died (CFR=8.65).

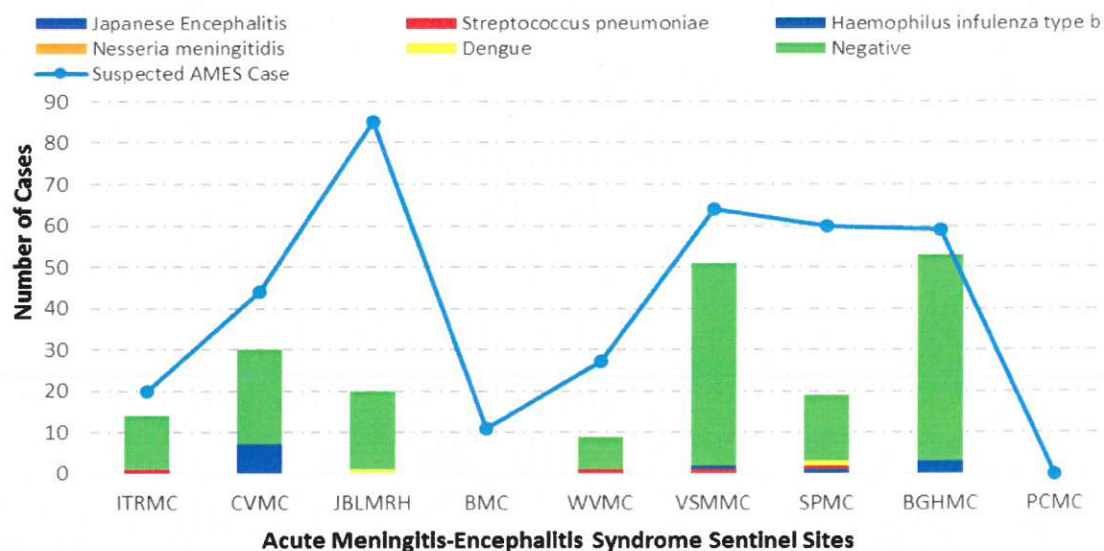


Figure 1. SUSPECTED CASES AND LABORATORY RESULTS BY MORBIDITY MONTH, PHILIPPINES JANUARY 1 – JULY 4, 2015 (N=370)



Note: Cerebrospinal Fluid (CSF) and serum (acute and convalescent phase) are collected and tested in RITM to confirm the diagnosis.

Figure 2. SUSPECTED CASES AND LABORATORY RESULTS PER SENTINEL SITE, JANUARY 1 – JULY 4, 2015



(see list of AMES sentinel sites in the last page)

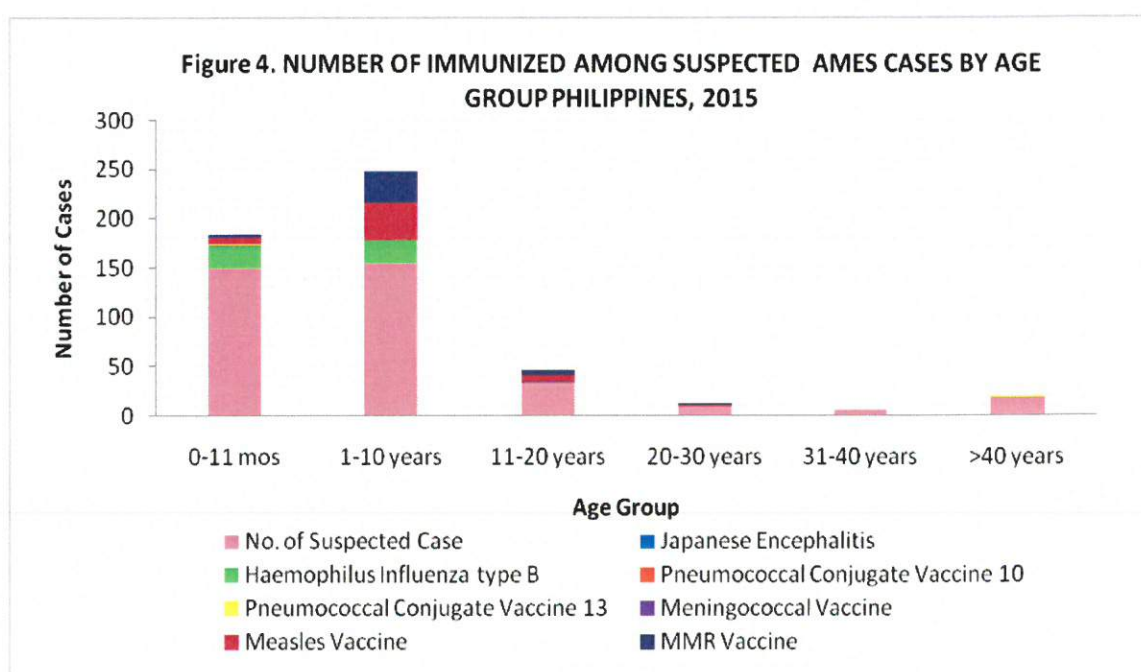
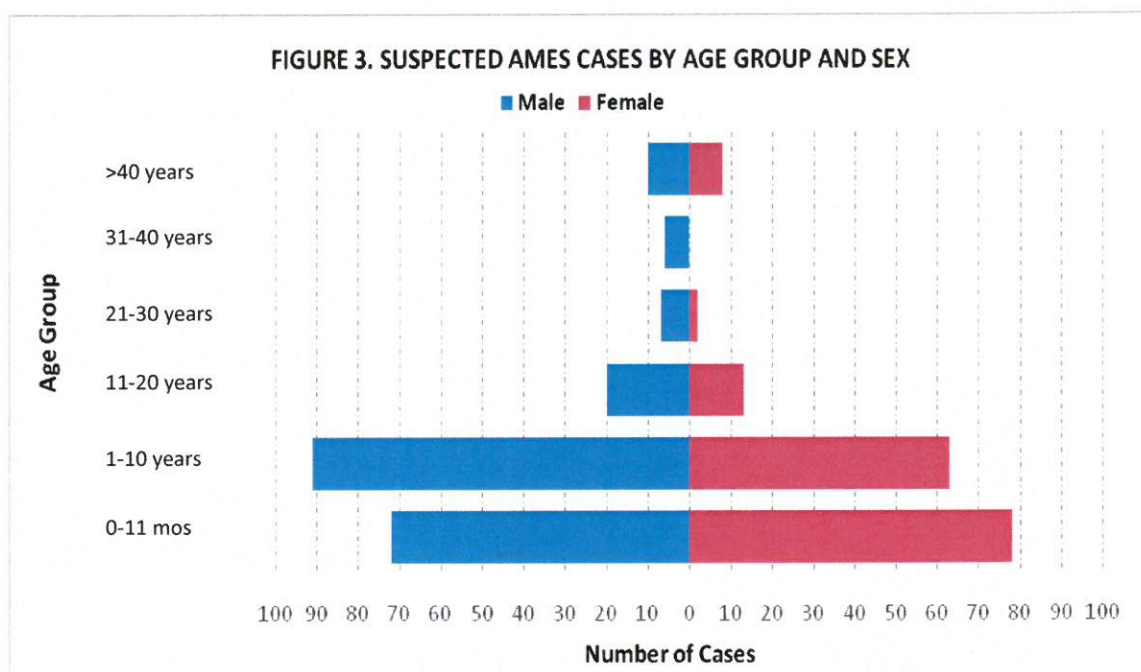




FIGURE 5. SUSPECTED ACUTE MENINGITIS ENCEPHALITIS SYNDROME CASES, JANUARY 1- JULY 4, 2015

REGION	CASES
Region 1	= 32
Region 2	= 40
Region 3	= 85
Region 4A	= 0
Region 4B	= 0
Region 5	= 11
Region 6	= 26
Region 7	= 64
Region 8	= 0
Region 9	= 0
Region 10	= 0
Region 11	= 55
Region 12	= 5
ARMM	= 0
CAR	= 51
CARAGA	= 0
NCR	= 1
TOTAL	= 370

LEGEND
1 Dot = 1 Case

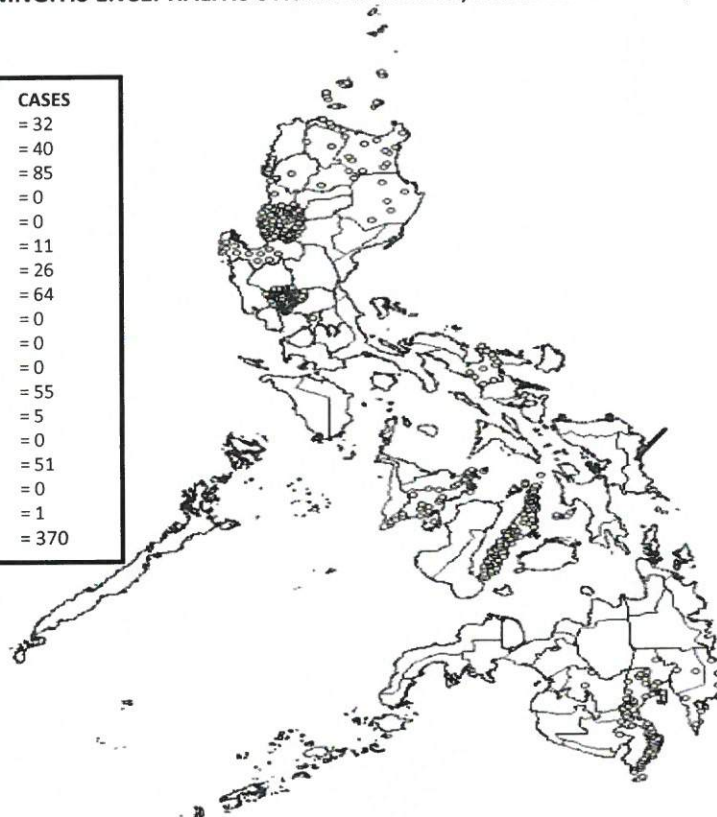
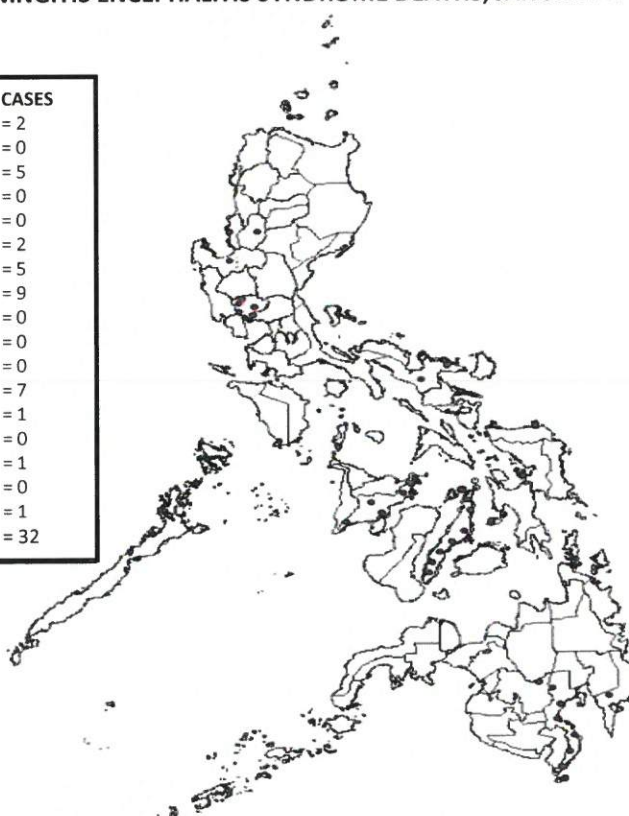


FIGURE 6. SUSPECTED ACUTE MENINGITIS ENCEPHALITIS SYNDROME DEATHS, JANUARY 1- JULY 4, 2015

REGION	CASES
Region 1	= 2
Region 2	= 0
Region 3	= 5
Region 4A	= 0
Region 4B	= 0
Region 5	= 2
Region 6	= 5
Region 7	= 9
Region 8	= 0
Region 9	= 0
Region 10	= 0
Region 11	= 7
Region 12	= 1
ARMM	= 0
CAR	= 1
CARAGA	= 0
NCR	= 1
TOTAL	= 32

LEGEND
1 Dot = 1 Case





Morbidity Week 26 – June 28 – July 4, 2015

Epidemiology Bureau
Public Health Surveillance and Informatics Division

TABLE 1. TOTAL NUMBER OF CEREBROSPINAL FLUID (CSF), SERUM 1 & 2 COLLECTED FROM SUSPECTED AMES CASES
AND NUMBER OF DEATHS PER SENTINEL SITE, July 4, 2015

AMES Sentinel Site	Number of Suspected AMES Cases	Cerebrospinal Fluid							# Serum 1 specimen collected (Acute)				# Serum 2 specimen collected (Convalescent)				Number of Deaths	CFR (%)				
		# Lumbar Puncture (LP) specimen collected	Samples received <1 hour	Samples with culture results	Result			Total	Result			Total	Result			Total						
					*P	*N	*Pn		*P	*N	*Pn		*P	*N	*Pn							
Ilocos Training Regional Medical Center	20	14(70%)	11(79%)	11(79%)	1(7%)	13(93%)	0	14	0	3(100%)	0	3	0	3(100%)	0	3	0	3(100%)	0	3	1	5.00
Cagayan Valley Medical Center	44	44(100%)	34(77%)	38(86%)	7(16%)	23(52%)	14(32%)	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Jose B. Lingad Memorial Regional Hospital	85	21(25%)	1(5%)	5(24%)	0	19(90%)	0	19 ¹	1(5%)	20(91%)	1(5%)	22	0	0	0	0	0	0	0	0	5	5.88
Bicol Medical Center	11	1(9%)	0	0	0	0	1(100%)	1 ¹	0	0	0	0	0	0	0	0	0	0	0	0	2	18.88
Western Visayas Medical Center	27	10(37%)	7(70%)	2(20%)	1(10%)	8(80%)	1(10%)	10	0	14(86%)	2(13%)	16	0	2(100%)	0	2	0	2(100%)	0	2	5	18.52
Vicente Sotto Memorial Medical Center	64	64(100%)	44(69%)	22(34%)	2(3%)	49(77%)	13(20%)	64	0	0	0	0	0	0	0	0	0	0	0	0	9	14.06
Southern Philippines Medical Center	60	26(43%)	11(42%)	9(35%)	2(8%)	16(62%)	7(27%)	25 ¹	1(4%)	17(71%)	5(21%)	23 ²	1(9%)	7(64%)	2(18%)	10 ³	1(9%)	7(64%)	2(18%)	8	13.33	
Philippine Children's Medical Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Baguio General Hospital and Medical Center	59	58(98%)	29(50%)	46(79%)	3(5%)	50(86%)	4(7%)	57 ¹	3(20%)	11(73%)	1(7%)	15	0	1(100%)	0	1	0	1(100%)	0	1	2	3.39
Grand Total	370	238(64%)	137(58%)	133(56%)	16(7%)	178(75%)	40(17%)	234	5(6%)	65(81%)	9(11%)	79	1(6%)	13(76%)	2(12%)	16	13(76%)	2(12%)	32	8.65		

Note: All cases with dengue result, samples not tested and with no sample are not included in the classification as positive, negative or pending n¹, n², n³

¹JBLMRH: 1 Dengue and 1 sample not tested; BMC: 10 cases with no sample; SPMC: 1 sample not tested, ²SPMC: 1 Dengue case; ³1 Dengue case

*P-Positive, N-Negative and Pn- Pending



CASE DEFINITION of Acute Meningitis-Encephalitis Surveillance

A combined case definition for AES and BM surveillance shall be used. Suspected cases will be captured through the standard case definition of **Acute Meningitis-Encephalitis Surveillance** System (includes meningitis, encephalitis, and overlapping cases)

A case of suspected Acute Meningitis-Encephalitis is a person of any age, WITH a sudden onset of fever, plus one of:

- change in mental status (including altered consciousness, confusion, or inability to talk)
- new onset of seizures
- neck stiffness
- other meningeal sign

Selected Sentinel Sites of Acute Meningitis-Encephalitis Surveillance

Region 1- Ilocos Training Regional Medical Center

Region 2- Cagayan Valley Medical Center

Region 3- Jose B. Lingad Memorial Regional Hospital

Region 5- Bicol Medical Center

Region 6- Western Visayas Medical Center

Region 7- Vicente Sotto Memorial Medical Center


Region 11- Southern Philippines Medical Center

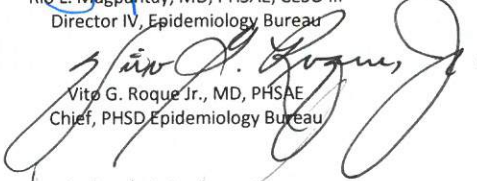
Region NCR- Philippine Children's Medical Center


Region CAR- Baguio General Hospital and Medical Center

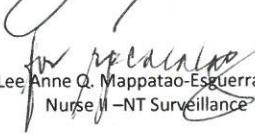
NOTE: Disease counts reported here do NOT represent the final number and are subject to change after inclusion of delayed reports and review of cases.


EDITORIAL BOARD

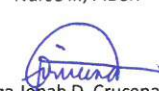

Rio L. Magpantay, MD, PHSAE, CESO III
Director IV, Epidemiology Bureau



Vito G. Roque Jr., MD, PHSAE
Chief, PHSD Epidemiology Bureau



June Cantata B. Corpuz, RN
Nurse III, PIDSR



Lee Anne Q. Mappatao-Esquerro, RN
Nurse II – NT Surveillance


Ma. Romina P. Calalang, RN
Nurse II – AFP Surveillance


Jezza Jonah D. Crucena, RN
Nurse II – AEFI Surveillance


Jobelle M. Aquino, RN
Nurse II – Measles Surveillance


Kris Pauline D. Martine, RN
Nurse II – AMES Surveillance


Farrah S. Ibea, RN
Nurse I – Rotavirus Surveillance