



## 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 56 AMES suspected cases were reported from selected sentinel sites from January 1 to March 14, 2015 (Figure 1). All laboratory results from 5 sentinel sites are still pending (Table 1). Most (54%) of the cases were reported in January of this year.

### Geographic distribution

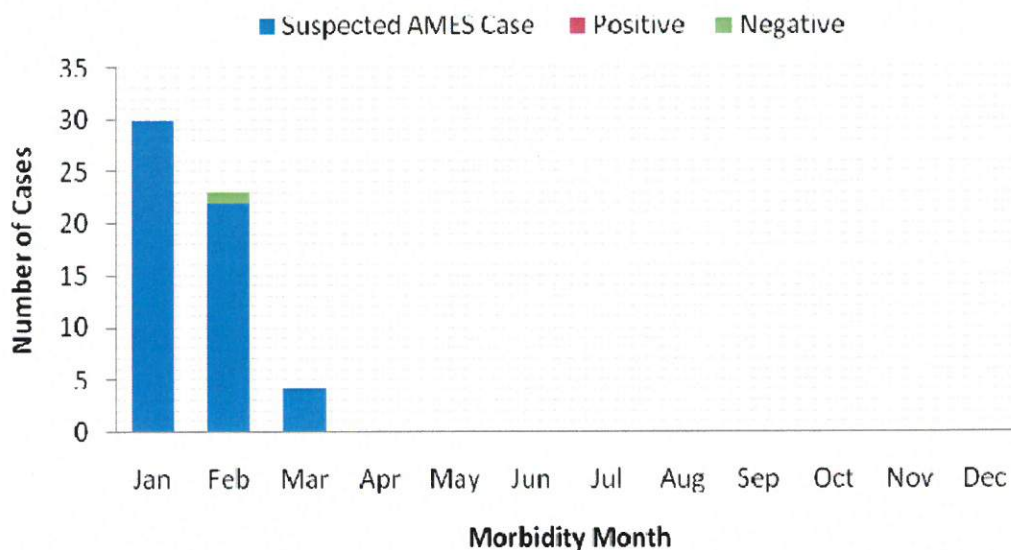
The distribution of suspected AMES cases varied considerably among the sentinel sites (Figure 2) and regions (Figure 5). Most of the reported cases were from Baguio General Hospital and Medical Center (54%) and Jose B. Lingad Memorial Hospital (21%) (Figure 2).

### Profile of cases

Fifty-seven percent of suspected AMES cases are less than 1 year old (Figure 3). Fifty-four percent of the suspected AMES cases were male (Figure 3). Among the suspected AMES cases, 29% received vaccinations which are measles vaccine, MMR, *Haemophilus Influenza* type b and meningococcal vaccine (Figure 4). One among the suspected AMES died (CFR=1.78).

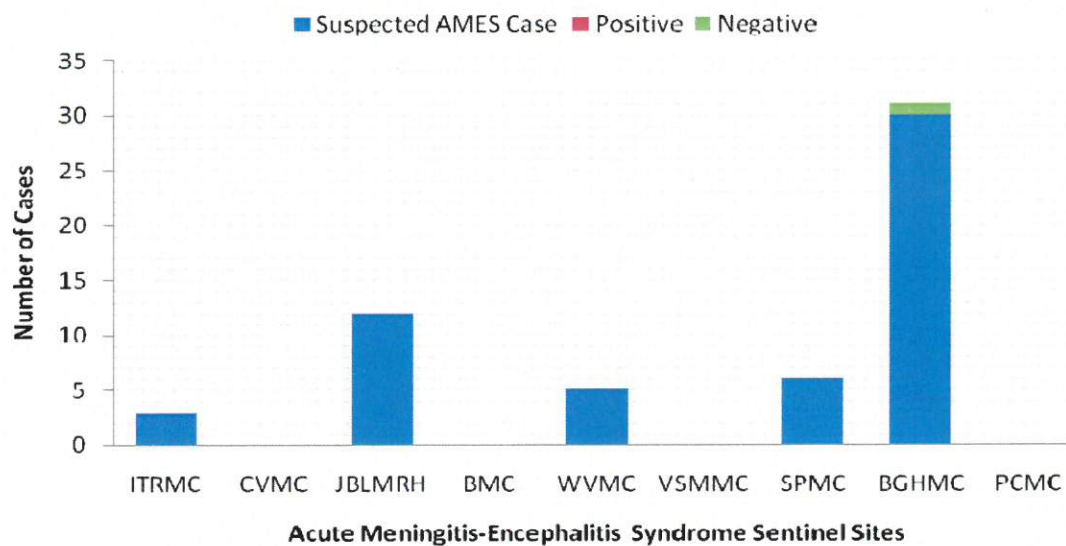


**Figure 1. SUSPECTED CASES AND LABORATORY RESULTS BY MORBIDITY MONTH, PHILIPPINES JANUARY 1 – MARCH 14, 2015 (N=56)**



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 – MARCH 14, 2015**



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





FIGURE 3. SUSPECTED AMES CASES BY AGE GROUP AND SEX

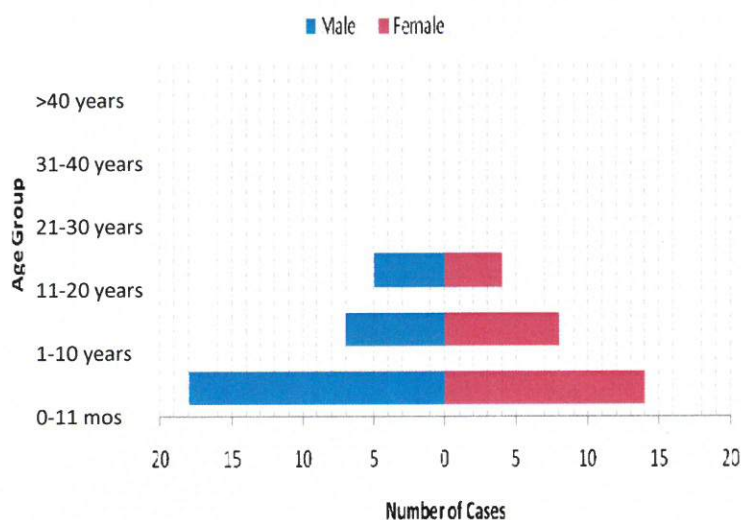


FIGURE 5. ACUTE MENINGITIS ENCEPHALITIS SYNDROME SUSPECTED CASES, JANUARY 1- MARCH 14, 2015

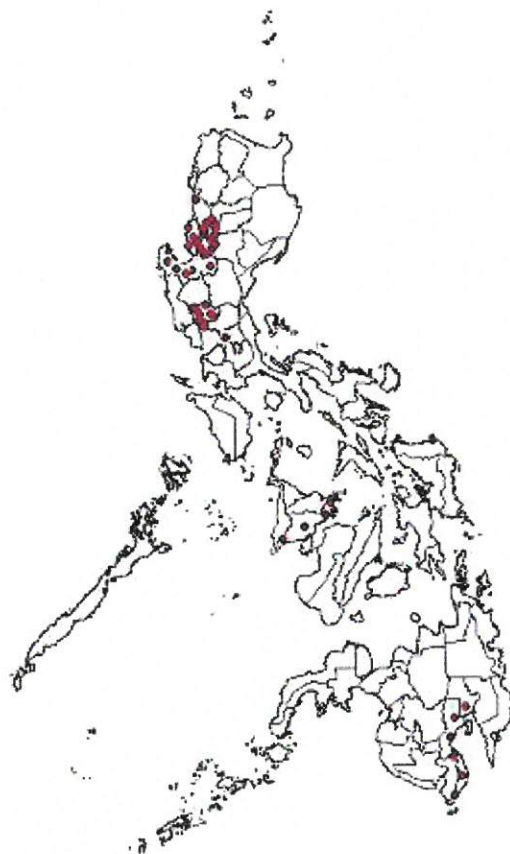
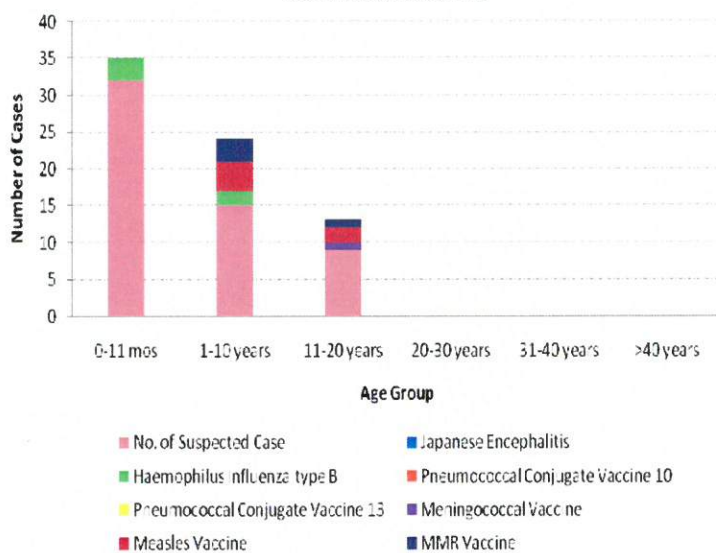


Figure 4. NUMBER OF IMMUNIZED AMONG SUSPECTED AMES CASES BY AGE GROUP PHILIPPINES, 2015





Morbidity Week 10 – March 8 – March 14, 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, March 7, 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	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3(100%)	3	0	0.00	
Cagayan Valley Medical Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Jose B. Lingad Memorial Regional Hospital	12	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	12 (100%)	12	0	0.00	
Bicol Medical Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Western Visayas Medical Center	5	1(100%)	1(100%)	1(100%)	0	0	0	0	0	1(100%)	1	0	0	0	0	0	1(100%)	0	0	0.00	
Vicente Sotto Memorial Medical Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Southern Philippines Medical Center	6	3(50%)	1(33%)	2(67%)	0	0	0	0	0	3(100%)	3	0	0	0	0	0	2(33%)	2	0	1.78	
Philippine Children's Medical Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Baguio General Hospital and Medical Center	30	30(100%)	9(30%)	24(80%)	0	1(3%)	29(97%)	0	0	0	30	0	0	0	0	0	30(100%)	30	0	0.00	
Grand Total	56	34(61%)	8(32%)	27(79%)	0	1(2%)	45(80%)	46	0	0	46	0	0	0	0	0	45(80%)	45	1	1.78	

\*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:

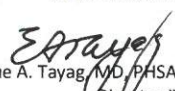
- change in mental status (including altered consciousness, confusion, or inability to talk)
- new onset of seizures
- neck stiffness
- other meningeal sign

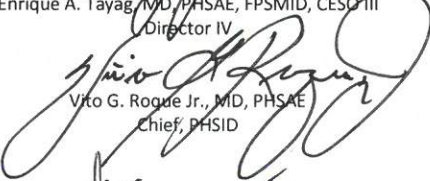
#### Selected Sentinel Sites of Acute Meningitis-Encephalitis Surveillance


**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


  
Enrique A. Tayag, MD, PHSAE, FPSMID, CESCO III  
Director IV

  
Vito G. Roque Jr., MD, PHSAE  
Chief, PHSID

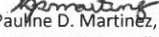
  
June Cantata B. Corpuz, RN  
National Coordinator, PIDSR


  
Lee Anne G. Mappatad-Esguerra, RN  
Nurse II – NT Surveillance

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

  
Jeza Leah D. Crucena, RN  
Nurse II – AEFI Surveillance

  
Jobelle M. Aquino, RN  
Nurse II- Measles Surveillance

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

  
Farrah S. Ibea, RN  
Nurse I- Rotavirus Surveillance