



**Background:**

Japanese encephalitis (JE) is a mosquito-borne flavivirus, and belongs to the same genus as dengue, yellow fever and West Nile viruses. JE is the main cause of viral encephalitis in many countries of Asia. In the Philippines, JE was found to be endemic with an extensive geographic range. JE virus was the causative agent in 7% to 18% of cases of clinical meningitis-encephalitis, and 16% to 40% of clinical encephalitis cases. In addition, JE predominantly affects children under 15 years of age and 6% to 7% of cases resulted in deaths.<sup>1</sup> In 2015, Acute Meningitis Encephalitis Surveillance (AMES) was initiated in nine sentinel hospitals.

**PIDSR Case Definition:**

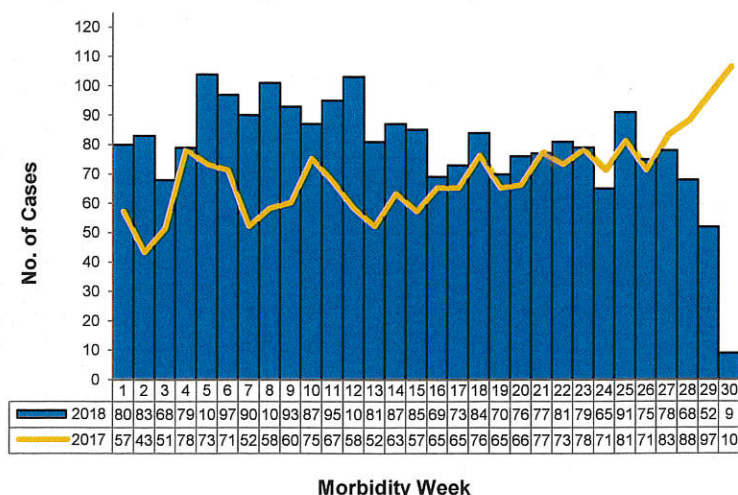
Japanese encephalitis cases are captured under AMES, which comes from the combined surveillance data of AMES from the sentinel sites, and the surveillance data of Acute Encephalitis Syndrome (AES) and Bacterial Meningitis (BM). The case definition for AMES shall be the combined case definition of AES and BM.

Case Classification	Criteria
<b>Suspected AMES Case</b>	a person of any age, with acute onset of fever <b>and at least one</b> of the ff.: <ul style="list-style-type: none"><li>- Change in mental status (including altered consciousness, confusion, or inability to talk)</li><li>- New onset of seizures (excluding simple febrile seizures)</li><li>- Neck stiffness or other meningeal signs (Kernig's sign, Brudzinkin's sign, bulging fontanel, etc.)</li><li>- Case diagnosed by the physician as either encephalitis or meningitis</li></ul>
<b>Probable JE</b>	a suspected case that occurs in close geographical and temporal relationship to a lab-confirmed case of JE, in the context of an outbreak
<b>Lab-confirmed JE</b>	a suspected case that has been lab-confirmed as JE, by detecting presence of JE virus- specific IgM antibody in a single sample of CSF or serum, as detected by an IgM capture of ELISA
<b>AES – other agent</b>	a suspected case in which diagnostic testing is performed and an etiologic agent other than JE virus is identified
<b>AES – unknown</b>	a suspected case in which testing was performed but no etiologic agent was identified or in which the test results were indeterminate

**Trends in the Philippines**

A total of **2,380** AMES cases were reported from January 1 to July 28, 2018 or Morbidity Weeks 1 to 30 (Figure 1). This is **14% higher** than that of the same reporting period last year (n=2,082).

**Figure 1. Reported AMES cases by Morbidity Week (N=2,380)**  
Philippines, January 1 – July 28, 2018 vs 2017 same time period



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<sup>1</sup> Lopez, A.L. et al, 2013



## I. Geographic Distribution of Cases

Most of the cases came from Region III (440, 18%), Region I (261, 11%) and NCR (243, 10%). There were 91 reported deaths with a Case-Fatality Ratio (CFR) of 4% (Table 1).

**Table 1. Reported AMES Cases and Deaths by Region (N=2,380)**  
Philippines, January 1- July 28, 2018 vs 2017 same time period

Region	2018		2017		% Change
	Cases	Deaths	Cases	Deaths	
<b>PHILIPPINES</b>	<b>2,380</b>	<b>91</b>	<b>2,082</b>	<b>157</b>	<b>↑ 14</b>
I	261	9	210	11	↑ 24
II	135	4	207	34	↓ 35
III	440	11	377	40	↑ 17
IV-A	187	8	98	9	↑ 91
MIMAROPA	19	1	10	0	↑ 90
V	154	8	94	1	↑ 64
VI	227	8	299	7	↓ 24
VII	146	9	174	23	↓ 16
VIII	24	4	32	2	↓ 25
IX	33	5	49	9	↓ 33
X	136	4	83	1	↑ 64
XI	130	1	66	6	↑ 97
XII	57	3	11	0	↑ 418
ARMM	65	3	36	0	↑ 81
CAR	72	2	110	7	↓ 35
CARAGA	51	1	41	2	↑ 24
NCR	243	10	185	5	↑ 31

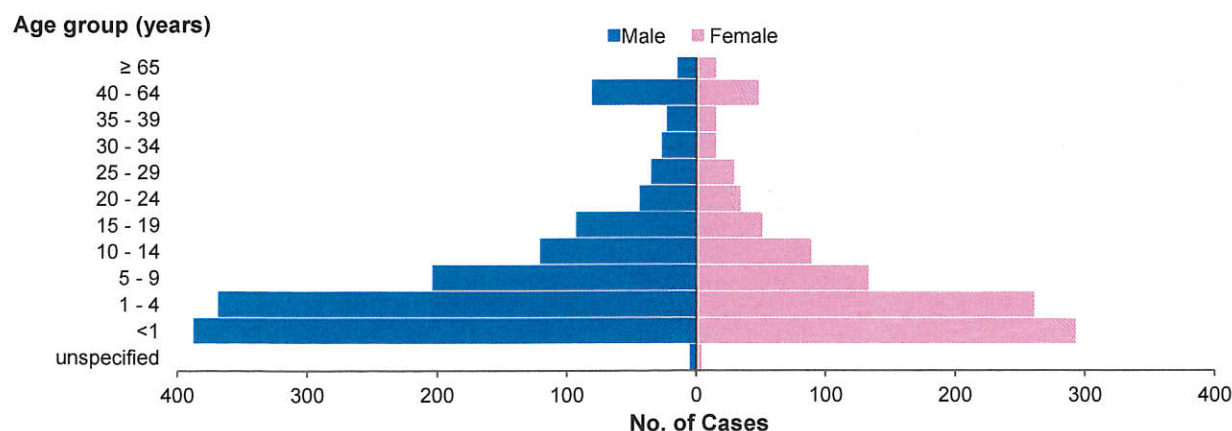
## II. Profile of Cases

### A. AMES Cases

#### 1. Age group and Sex

Among the 2,380 suspect AMES cases, majority (1,405, 59%) were male. Age ranges from less than 1 month to 85 years (median: 3 years). Majority (1,309, 55%) of those affected were children less than 5 years of age (Figure 2).

**Figure 2. Reported AMES cases by Age group and Sex (N=2,380)**  
Philippines, January 1 – July 28, 2018



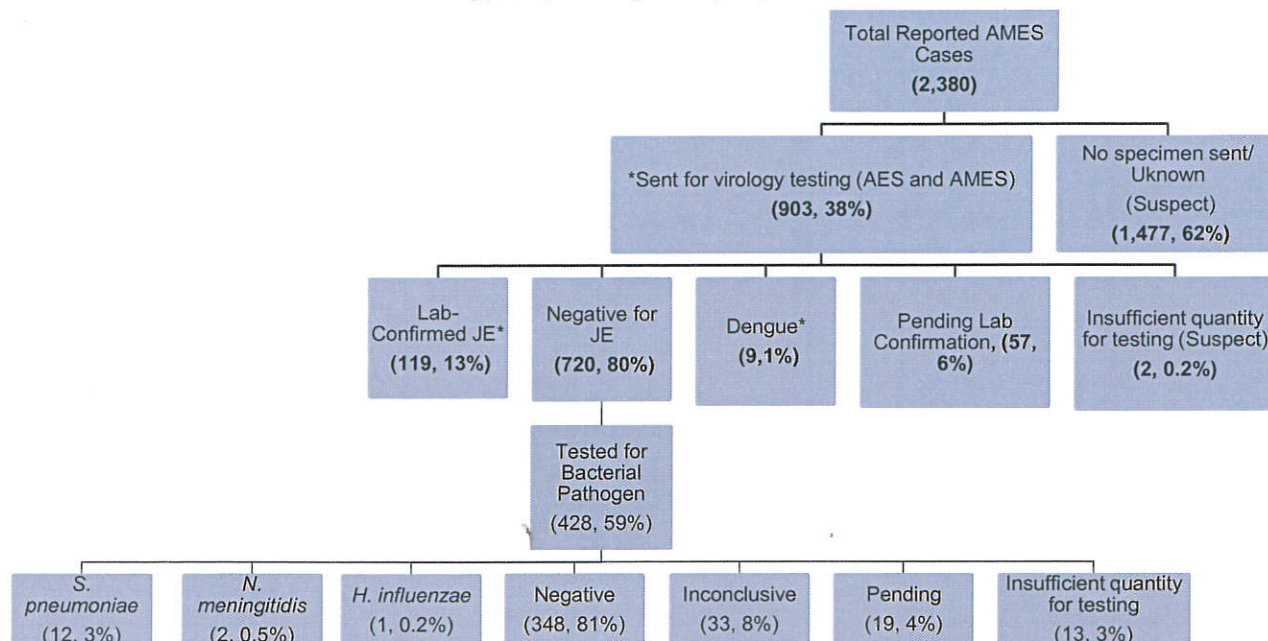




## 2. Laboratory Status

Out of the 2,380 AMES cases, 903 (38%) cases had specimens sent to the Research Institute for Tropical Medicine (RITM) for virology to test for *Japanese encephalitis* (JE) IgM. Among tested, 119 (13%) were laboratory confirmed JE. Nine (1%) cases yielded *Dengue*. 720 (80%) were negative for JE. Among those negative for JE, 428 (59%) were tested for bacterial pathogens. 12 (3%) yielded *S. pneumoniae*, two (0.5%) yielded *N. meningitidis* while one (0.2%) yielded *H. influenzae*.

Figure 3. Reported AMES cases by Laboratory Status (N=2,380)  
Philippines, January 1- July 28, 2018



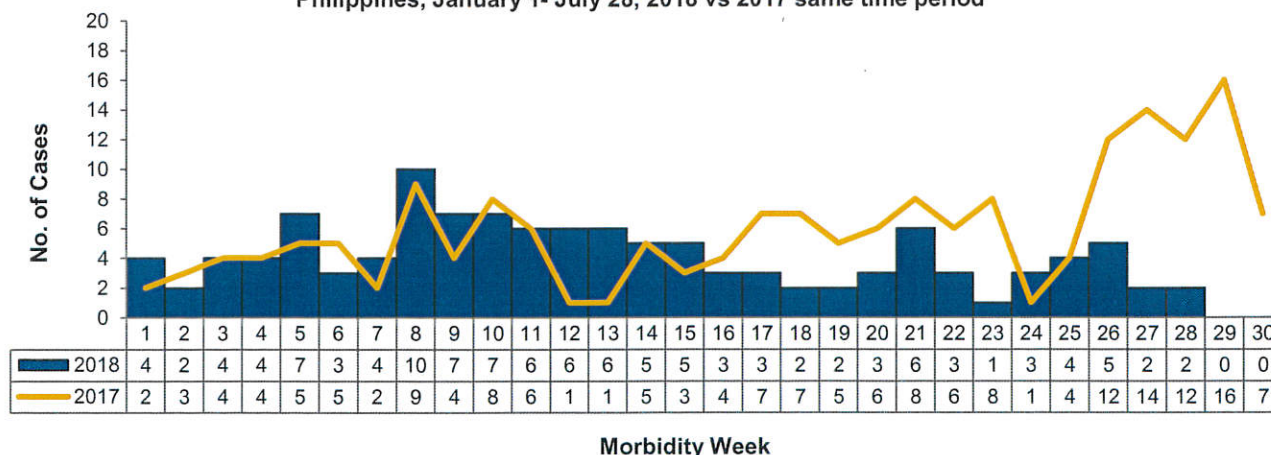
\*Multiple testing; 4 cases both positive for JE and Dengue

## B. Confirmed Japanese Encephalitis Cases

### 1. Distribution of cases by Morbidity Week

Out of the 2,380 AMES cases, a total of 119 laboratory-confirmed JE cases were reported from January 1 to July 28, 2018 or Morbidity Week 1 - 30 (Figure 4). This is 33% lower than same period last year (n=178).

Figure 4. Distribution of Confirmed JE Cases by Morbidity Week (N=119)  
Philippines, January 1- July 28, 2018 vs 2017 same time period





## 2. Geographic Distribution

Most of the lab-confirmed JE cases were reported from **Region III (51, 43%)**, **Region II (15, 13%)** and **Region I (13, 11%)**. There were four reported JE deaths with a CFR of 3% (Table 2).

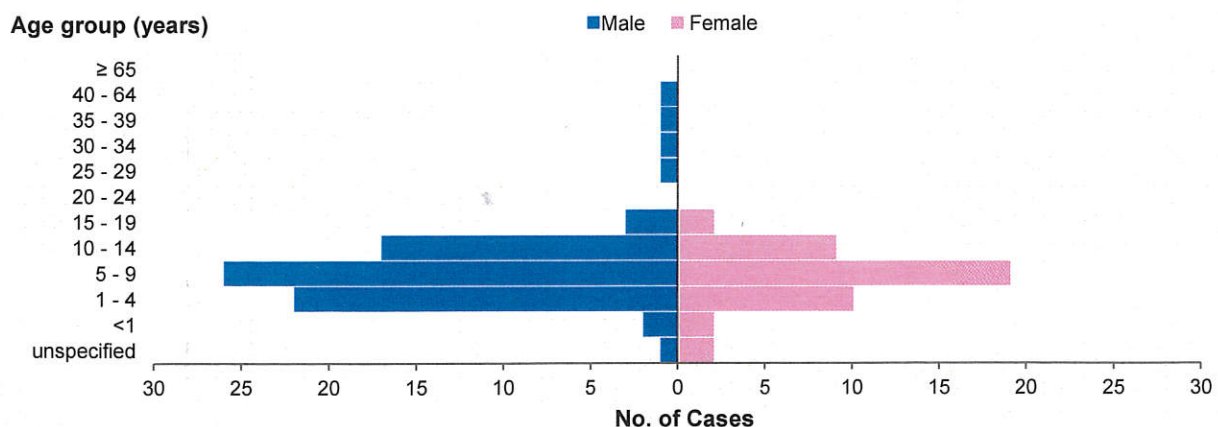
**Table 2. Confirmed Japanese Encephalitis Cases and Deaths by Region (n=119)**  
Philippines, January 1- July 28, 2018 vs 2017 same time period

Region	2018			2017			% Change
	Cases	Deaths	CFR (%)	Cases	Deaths	CFR (%)	
<b>PHILIPPINES</b>	<b>119</b>	<b>4</b>	<b>3</b>	<b>178</b>	<b>16</b>	<b>9</b>	<b>↓ 33</b>
I	13	0	0	31	3	10	↓ 58
II	15	1	7	25	3	12	↓ 40
III	51	2	4	58	7	12	↓ 12
IV-A	1	0	0	9	1	11	↓ 89
MIMAROPA	2	0	0	2	0	0	→ 0
V	5	0	0	14	0	0	↓ 64
VI	11	0	0	10	0	0	↑ 10
VII	2	0	0	4	0	0	↓ 50
VIII	0	0	-	0	0	-	→ 0
IX	2	1	50	1	0	0	↑ 100
X	0	0	-	3	0	0	↓ 100
XI	3	0	0	6	0	0	↓ 50
XII	1	0	0	1	0	0	→ 0
ARMM	2	0	0	0	0	-	-
CAR	10	0	0	7	0	0	↑ 43
CARAGA	1	0	0	2	1	50	↓ 50
NCR	0	0	-	5	1	20	↓ 100

## 3. Age group and Sex

Among the **119** confirmed JE cases, majority (**75, 63%**) were male. Age ranges from **3 months to 48 years** (median: 6 years). Most of those affected were children 5 to 9 years of age (**45, 38%**) (Figure 5).

**Figure 5. Confirmed Japanese Encephalitis Cases by Age group and Sex (n=119)**  
Philippines, January 1 – July 28, 2018



## C. Confirmed Japanese Encephalitis Deaths

There were **4** reported confirmed JE deaths (**CFR= 3%**).

Case 1: 11-yr old male; date of onset: February 5, 2018; DRU: Zamboanga del Norte Medical Center; Region IX  
Case 2: 12-yr old male; date of onset: February 18, 2018; DRU: Mother of Teresa Calcutta Medical Center- Pampanga; Region III  
Case 3: 4-yr old male; date onset: March 6, 2018; DRU: Cagayan Valley Medical Center; Region II  
Case 4: 18-yr old male; date of onset: March 8, 2018; DRU: Orion St. Michael Hospital; Region III