



**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:**

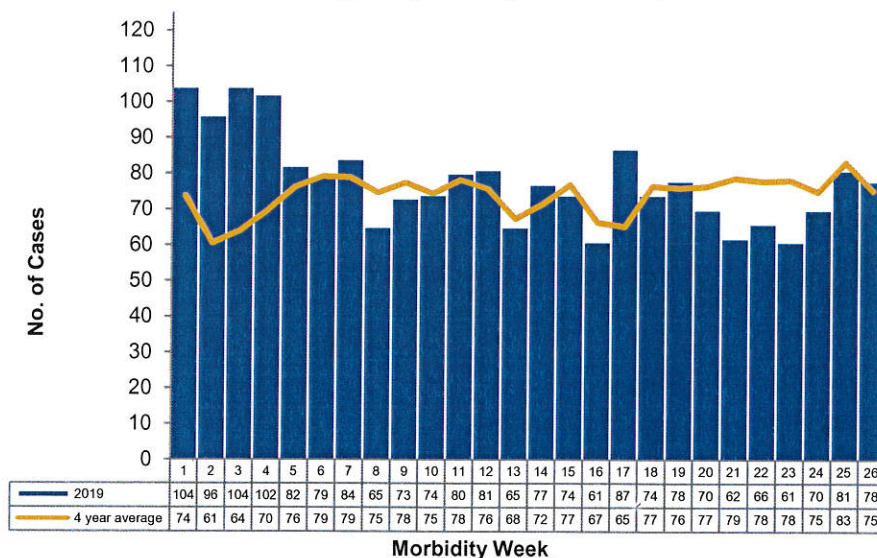
Japanese encephalitis cases are captured under AMES, which comes from the combined surveillance data of AMES from the sentinel sites, and the surveillance data of Acute Encephalitis Syndrome (AES) and Bacterial Meningitis (BM). The case definition for AMES shall be the combined case definition of AES 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, Brudzink'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 **2,028** AMES cases were reported from January 1 to June 29, 2019 or Morbidity Weeks 1 to 26. The distribution of AMES cases for 2019 compared to the 4 year average of cases from 2015 to 2018 is shown below (Figure 1).

**Figure 1. Reported AMES cases by Morbidity Week (N=2,028)**  
**Philippines, January 1 – June 29, 2019**



\*AMES surveillance only started in 2015

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





## AMES CASES

### I. Geographic Distribution of Cases

Most of the cases came from Region III (**279 or 14%**), NCR (**214 or 11%**) and Region 1 (**208 or 10%**). Likewise, Regions II, IV-A, MIMAROPA, VII, IX, XI, XII, BARMM and Caraga showed an increased number of cases compared with the same time period in 2018. There were **122** reported deaths with a Case-Fatality Ratio (CFR) of **6%** (Table 1).

**Table 1. Reported AMES Cases and Deaths by Region (N=2,028)**  
Philippines, January 1-June 29, 2019 vs 2018

Region	2019		2018		% Change
	Cases	Deaths	Cases	Deaths	
<b>PHILIPPINES</b>	<b>2,028</b>	<b>122</b>	<b>2,202</b>	<b>93</b>	<b>↓8</b>
<b>I</b>	208	14	253	9	↓18
<b>II</b>	201	6	129	4	↑56
<b>III</b>	279	3	392	12	↓29
<b>IV-A</b>	172	9	156	7	↑10
<b>MIMAROPA</b>	30	1	18	1	↑67
<b>V</b>	94	7	148	8	↓36
<b>VI</b>	173	3	214	7	↓19
<b>VII</b>	152	18	133	8	↑14
<b>VIII</b>	7	1	24	6	↓71
<b>IX</b>	42	4	32	5	↑31
<b>X</b>	60	2	133	4	↓55
<b>XI</b>	125	3	112	1	↑12
<b>XII</b>	61	4	50	3	↑22
<b>BARMM</b>	110	17	60	2	↑83
<b>CAR</b>	51	1	65	2	↓22
<b>Caraga</b>	49	2	47	1	↑4
<b>NCR</b>	214	27	236	13	↓9

\*\*Regions with red font indicate increase in percent change

### II. Profile of Cases

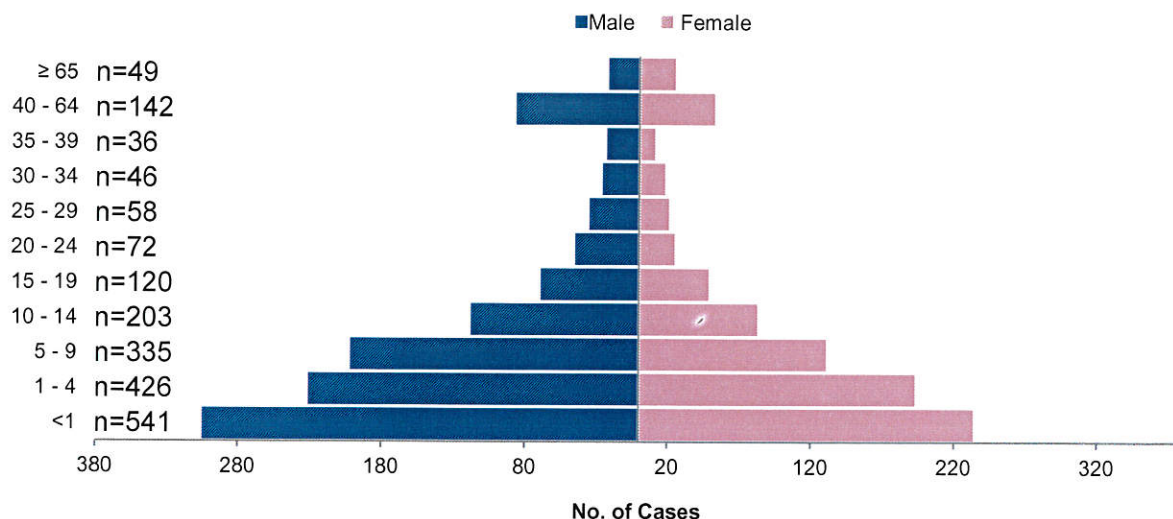
#### A. AMES Cases

##### 1. Age group and Sex

Among the **2,028** suspect AMES cases, majority (**1,174 or 58%**) were male. Age range from **less than 1 month to 97 years** (median: 6 years). Majority (**967 or 48%**) of those affected were children less than 5 years of age (Figure 2).

**Figure 2. Reported AMES cases by Age group and Sex (N=2,028)\***  
Philippines. January 1 – June 29, 2019

Age group (years)

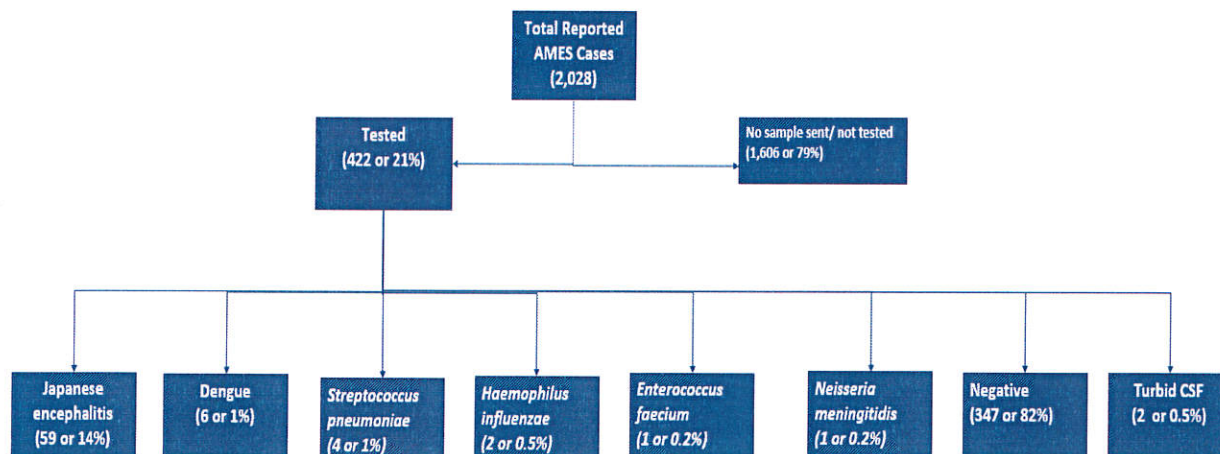




## 2. Laboratory Status

Out of the **2,028** AMES cases, **387 (23%)** had specimens sent to the Research Institute for Tropical Medicine (RITM) to test for *Japanese encephalitis* (JE) IgM. Among those tested, **57 (15%)** were laboratory confirmed JE, **320 (83%)** were negative for JE.

**Figure 3. Reported AMES cases by Laboratory Status (N=2,028)**  
Philippines, January 1 – June 29, 2019



*\*\*Multiple testing (some samples are tested for both viral and bacterial pathogen)*

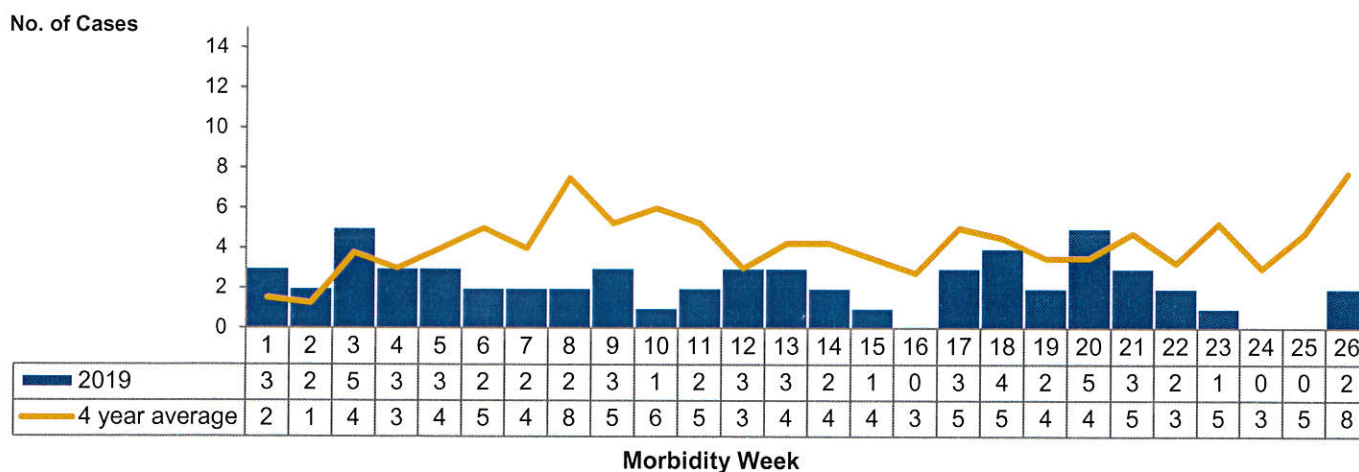
## CONFIRMED JAPANESE ENCEPHALITIS CASES

### A. Confirmed Japanese Encephalitis Cases

#### 1. Distribution of cases by Morbidity Week

Out of the **2,028** AMES cases, a total of **59** laboratory-confirmed JE were reported from January 1 to June 29, 2019 or Morbidity Week 1 – 26. The distribution of AMES cases for 2019 compared to the 4-year average of cases from 2015 to 2018 is shown below. (Figure 4).

**Figure 4. Distribution of Confirmed JE Cases by Morbidity Week (n=59)**  
Philippines, January 1 – June 29, 2019







## 2. Geographic Distribution

Most of the lab-confirmed JE cases were reported from **Region II (16 or 28%)**. Likewise, Region I and Region XII showed an increased number of case compared with the same time period in 2018 (N=119). (Table 2).

**Table 2. Confirmed Japanese Encephalitis Cases and Deaths by Region (n=59)**  
Philippines, January 1 – June 29, 2019 vs 2018 same time period

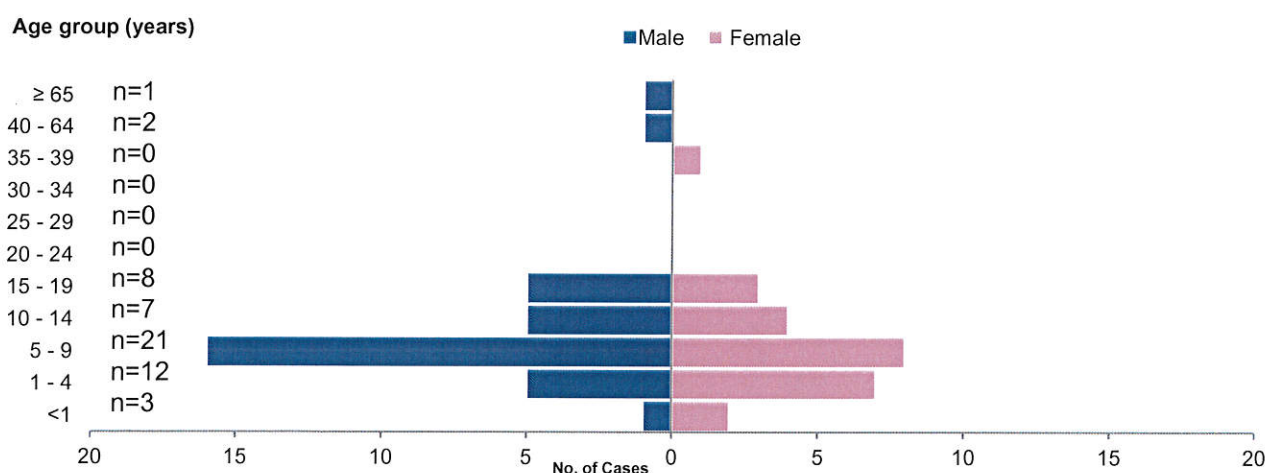
Region	2019		2018		% Change
	Cases	Deaths	Cases	Deaths	
<b>PHILIPPINES</b>	<b>59</b>	<b>3</b>	<b>119</b>	<b>5</b>	<b>↓50</b>
I	15	1	11	0	↑36
II	16	1	16	1	0
III	10	0	50	2	↓80
IV-A	3	0	3	1	0
MIMAROPA	2	0	2	0	0
V	2	0	6	0	↓67
VI	0	0	10	0	↓100
VII	1	0	2	0	↓50
VIII	0	0	0	0	-
IX	0	0	1	1	↓100
X	0	0	0	0	-
XI	2	1	4	0	↓50
XII	3	0	1	0	↑
ARMM	0	0	2	0	↓100
CAR	4	0	10	0	↓60
Caraga	1	0	1	0	0
NCR	0	0	0	0	-

\*\*Regions with red font indicate increase in percent change

## 3. Age group and Sex

Among the 59 confirmed Japanese Encephalitis cases, majority (34 or 58%) were male. Age ranges from <1 year old to 90 years old (median: 7 years) (Figure 5).

**Figure 5. Confirmed Japanese Encephalitis Cases by Age group and Sex (n=59)\***  
Philippines, January 1 – June 29, 2019



## 4. Profile of Reported JE Death:

- Three (3) deaths (CFR: 5%) were reported among the Confirmed JE cases
- Age range: 4 – 40 years old (median: 17 years old)
- Sex distribution: Male: 2 (67%); Female: 1 (33%)