



**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:**

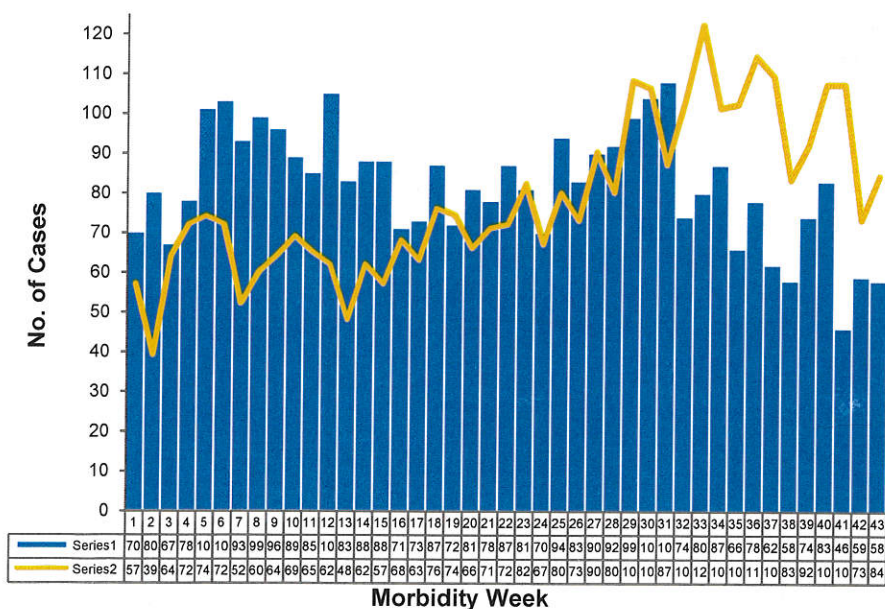
Japanese encephalitis cases are captured under AMES, which comes from the combined surveillance data of AMES from the sentinel sites, and the surveillance data of Acute Encephalitis Syndrome (AES) and Bacterial Meningitis (BM). The case definition for AMES shall be the combined case definition of AES 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 **3,520** AMES cases were reported from January 1 to October 27, 2018 or Morbidity Weeks 1 to 43 (Figure 1). This is **5% higher** than that of the same reporting period last year (n=3,377).

**Figure 1. Reported AMES cases by Morbidity Week (N=3,520) Philippines, January 1 – October 27, 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 (604, 17%), Region I (414, 12%) and NCR (378, 11%). There were 150 reported deaths with a Case-Fatality Ratio (CFR) of 4% (Table 1).

**Table 1. Reported AMES Cases and Deaths by Region (N=3, 520)**  
Philippines, January 1-October 27, 2018 vs 2017 same time period

Region	2018		2017		% Change
	Cases	Deaths	Cases	Deaths	
<b>PHILIPPINES</b>	<b>3,520</b>	<b>150</b>	<b>3,377</b>	<b>230</b>	<b>↑4</b>
<b>I</b>	<b>414</b>	<b>16</b>	<b>411</b>	<b>17</b>	<b>↑1</b>
<b>II</b>	<b>223</b>	<b>11</b>	<b>360</b>	<b>59</b>	<b>↓38</b>
<b>III</b>	<b>604</b>	<b>16</b>	<b>574</b>	<b>47</b>	<b>↑5</b>
<b>IV-A</b>	<b>263</b>	<b>15</b>	<b>142</b>	<b>11</b>	<b>↑85</b>
<b>MIMAROPA</b>	<b>35</b>	<b>1</b>	<b>18</b>	<b>0</b>	<b>↑94</b>
<b>V</b>	<b>222</b>	<b>15</b>	<b>144</b>	<b>8</b>	<b>↑54</b>
<b>VI</b>	<b>311</b>	<b>10</b>	<b>423</b>	<b>12</b>	<b>↓26</b>
<b>VII</b>	<b>230</b>	<b>15</b>	<b>273</b>	<b>33</b>	<b>↓16</b>
<b>VIII</b>	<b>43</b>	<b>8</b>	<b>52</b>	<b>2</b>	<b>↓17</b>
<b>IX</b>	<b>41</b>	<b>6</b>	<b>73</b>	<b>13</b>	<b>↓44</b>
<b>X</b>	<b>172</b>	<b>4</b>	<b>190</b>	<b>2</b>	<b>↓9</b>
<b>XI</b>	<b>200</b>	<b>3</b>	<b>125</b>	<b>7</b>	<b>↑60</b>
<b>XII</b>	<b>98</b>	<b>5</b>	<b>28</b>	<b>0</b>	<b>↑250</b>
<b>ARMM</b>	<b>93</b>	<b>3</b>	<b>72</b>	<b>0</b>	<b>↑29</b>
<b>CAR</b>	<b>112</b>	<b>4</b>	<b>158</b>	<b>9</b>	<b>↓29</b>
<b>CARAGA</b>	<b>81</b>	<b>1</b>	<b>58</b>	<b>2</b>	<b>↑40</b>
<b>NCR</b>	<b>378</b>	<b>17</b>	<b>276</b>	<b>8</b>	<b>↑37</b>

## II. Profile of Cases

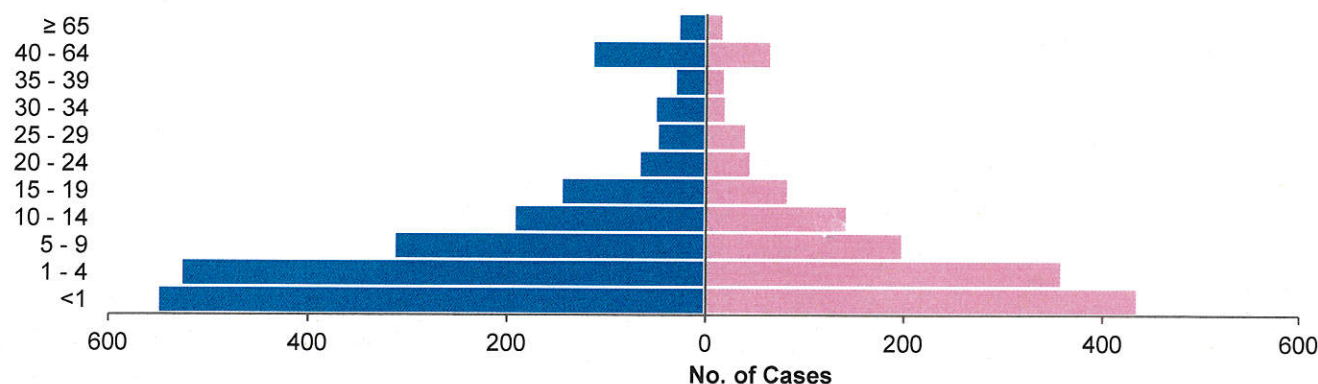
### A. AMES Cases

#### 1. Age group and Sex

Among the 3,520 suspect AMES cases, majority (2,079 59%) were male. Age ranges from less than 1 month to 86 years (median: 4 years). Majority (1,874, 53%) of those affected were children less than 5 years of age (Figure 2).

Age group (years)

**Figure 2. Reported AMES cases by Age group and Sex (N=3,520)\***  
Philippines, January 1 – October 27, 2018



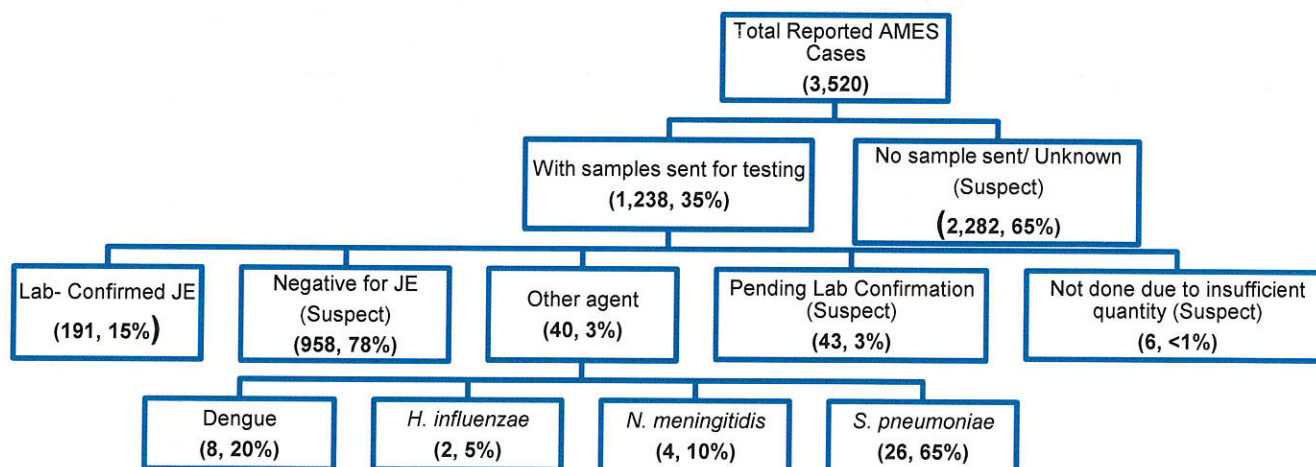
\*16 cases with unspecified age



## 2. Laboratory Status

Out of the 3,520 AMES cases, 1,238 (35%) cases had specimens sent to the Research Institute for Tropical Medicine (RITM) for virology to test for *Japanese encephalitis* (JE) IgM. Among tested, 191 (15%) were laboratory confirmed JE. 958 (78%) were negative for JE.

**Figure 3. Reported AMES cases by Laboratory Status (N=3,520)**  
Philippines, January 1 – October 27, 2018

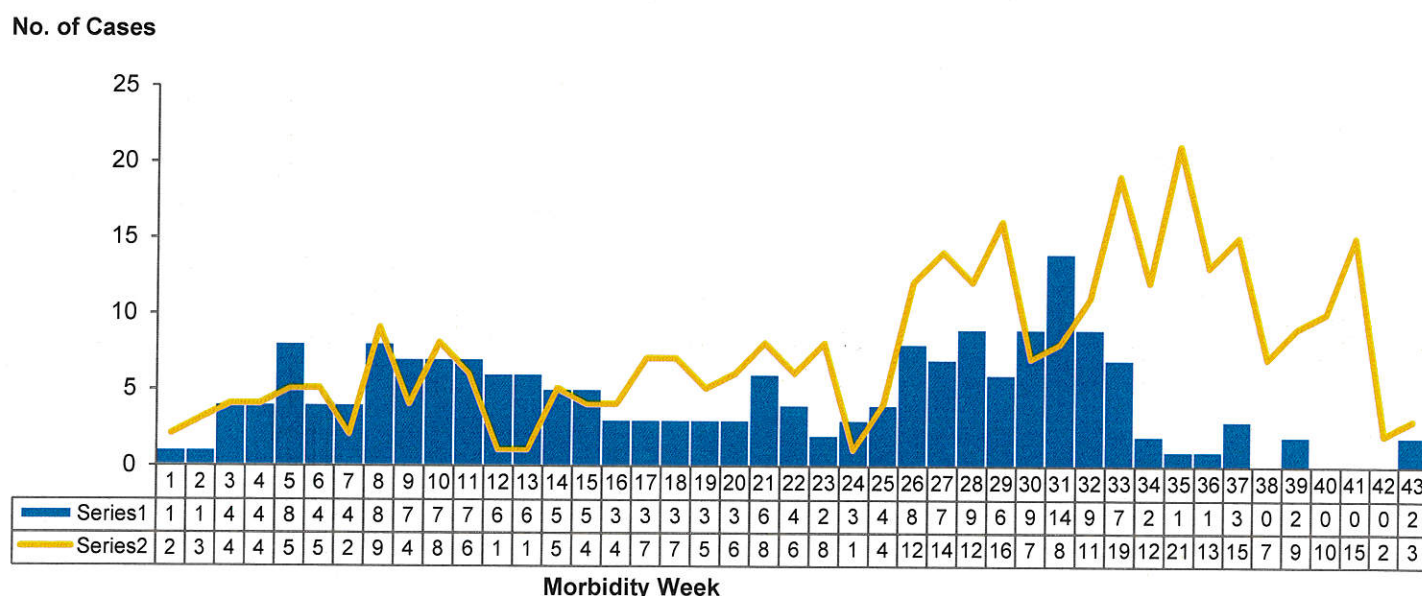


### A. Confirmed Japanese Encephalitis Cases

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

Out of the 3,520 AMES cases, a total of 191 laboratory-confirmed JE cases were reported from January 1 to October 27, 2018 or Morbidity Week 1 - 43 (Figure 4). This is 41% lower than same period last year (n=325).

**Figure 4. Distribution of Confirmed JE Cases by Morbidity Week (n=191)**  
Philippines, January 1 – October 27, 2018 vs 2017 same time period







## 2. Geographic Distribution

Most of the lab-confirmed JE cases were reported from **Region III (64, 34%)**, **Region I (35, 18%)** and **Region II (24, 13%)**. There were seven (7) reported JE deaths with a CFR of 4% (Table 2).

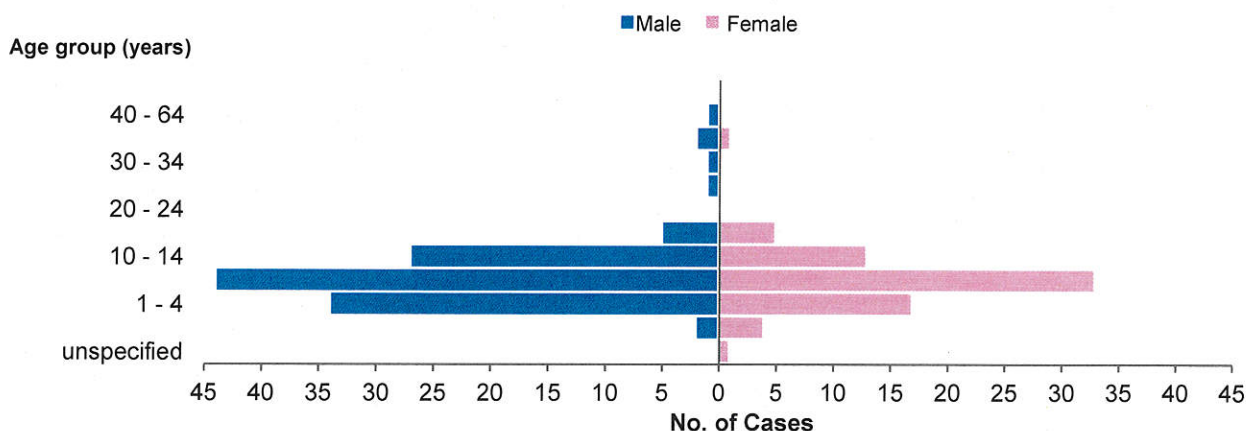
**Table 2. Confirmed Japanese Encephalitis Cases and Deaths by Region (n=191)**  
Philippines, January 1 – October 27, 2018 vs 2017 same time period

Region	2018		2017		% Change
	Cases	Deaths	Cases	Deaths	
<b>PHILIPPINES</b>	<b>191</b>	<b>7</b>	<b>325</b>	<b>21</b>	<b>↓41</b>
I	35	0	83	4	↓58
II	24	2	46	6	↓48
III	64	2	102	8	↓37
IV-A	5	1	14	1	↓64
MIMAROPA	2	0	6	0	↓67
V	9	0	21	0	↓57
VI	16	0	11	0	↑45
VII	2	0	6	0	↓67
VIII	1	0	1	0	0
IX	1	1	2	0	↓50
X	0	0	4	0	↓100
XI	7	0	6	0	↑17
XII	3	0	1	0	↑200
ARMM	2	0	0	0	↑
CAR	18	1	13	0	↑38
CARAGA	1	0	3	1	↓67
NCR	1	0	6	1	↓83

## 3. Age group and Sex

Among the **191** confirmed JE cases, majority (**117, 61%**) were male. Age ranges from **1 month to 48 years** (median: 7 years). Most of those affected were children 5 to 9 years of age (**77, 40%**) (Figure 5).

**Figure 5. Confirmed Japanese Encephalitis Cases by Age group and Sex (n=191)\***  
Philippines, January 1 – October 27, 2018



\*One case with unspecified age



**B. Confirmed Japanese Encephalitis Deaths**

There were 7 reported confirmed JE deaths (CFR= 4%).

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  
Case 5: 13-yr old female; date of onset: May 24, 2018; DRU: Mount Carmel Diocesan General Hospital; Region IV-A  
Case 6: 18-yr old female; date of admission: September 11, 2018; DRU: Cagayan Valley Medical Center; Region II  
Case 7: 8-yr old male; date of admission: September 13, 2018; DRU: Tuba Rural Health Unit; Region I; CARI