What Japanese Encephalitis (JE) surveillance activities are in progress in Indonesia?

Hospital-based surveillance for JE in children under 15 years of age has been implemented in 6 provinces by the National Institute of Health Research and Development (NIHRD) of the Ministry of Health, in collaboration with PATH. The sentinel site surveillance involves 15 hospitals (see map) and commenced in January 2005. Sites were chosen from geographically diverse parts of the country, and included regions both with and without high pig density (as pigs are one of the primary amplifying hosts for JE).

The sentinel site surveillance uses a case definition for acute encephalitis syndrome (AES) derived from the WHO JE surveillance standards. For each case of AES identified, epidemiological and clinical information is collected. Acute flaccid paralysis cases are also included. Specimens are transported to the NIHRD laboratory in Jakarta for testing by JE IgM Capture ELISA (CSF and/or serum and/or whole blood on filter paper, according to site capacity).

What are the objectives of surveillance?
Routine surveillance activities aim to provide an estimate of burden and pattern of JE disease among Indonesian children that will enable informed decisions to be made about JE immunization in the country.

What were the results?
JE cases were confirmed in all six provinces (see table). This confirms JE is an endemic disease across Indonesia.

JE cases occurred most frequently in children under five years of age. Cases were also common in children up to 10 years of age but occurred less frequently in older children. There was no clear seasonal pattern.

The impact of disease was severe. The case fatality rate was 16 percent. Of survivors, almost one-third were discharged from hospital with some form of disability.
JE SENTINEL SURVEILLANCE SITES

<table>
<thead>
<tr>
<th>Province</th>
<th>Confirmed JE cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Sumatra^1</td>
<td>2</td>
</tr>
<tr>
<td>West Kalimantan^3</td>
<td>31</td>
</tr>
<tr>
<td>East Java^1</td>
<td>8</td>
</tr>
<tr>
<td>West Nusa Tenggara - Lombok^2</td>
<td>26</td>
</tr>
<tr>
<td>East Nusa Tenggara - West Timor^3</td>
<td>11</td>
</tr>
<tr>
<td>Papua^2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>82</strong></td>
</tr>
</tbody>
</table>

* Only 50% cases had a convalescent specimen, so some JE positive cases are likely to have been missed. ^Low risk Moderate or mixed risk ^High risk.

How was this surveillance information used?
The MOH conducted a series of planning workshops and meetings for JE control in Indonesia in November 2006 and February 2007. Participants from various departments within the MOH and other stakeholders reviewed data from this surveillance project, as well as from past JE surveillance activities in Bali and research gathered in other parts of the country. Participants recognized JE as an endemic disease in Indonesia and determined that, to direct control efforts, routine clinical encephalitis surveillance should be strengthened and JE sentinel site surveillance should be maintained at existing sites and expanded if feasible.

Informed by the incidence of JE revealed through surveillance activities, plans for an immunogenicity study of JE vaccine and a pilot JE immunization program in Bali province are underway.

What is happening globally with JE control?
- WHO has published surveillance standards for JE, which are available online at [www.who.int/vaccinesdocuments/DocsPDF06/843.pdf](http://www.who.int/vaccinesdocuments/DocsPDF06/843.pdf).
- WHO established a Southeast Asian regional encephalitis laboratory network to support JE diagnostic and surveillance activities and plans to develop a similar network for the Western Pacific region.
- Several countries are reporting monthly AES (JE) surveillance data to the WHO South East Asia Regional Office (SEARO) to assist with planning for disease control.
- SEARO has recommended that the GAVI Alliance consider financing JE vaccine.
- Interest in use of JE vaccine to control disease is increasing:
  - India commenced a national JE immunization program in 2006.
  - Nepal initiated a comprehensive immunization program in 2006.
- In addition to the SA 14-14-2 JE vaccine—which is being used or is planned to be used in China, India, Nepal, South Korea, and Sri Lanka—two new JE vaccines are in late stages of development, and early trial results are promising.

Immune is the only effective way to control this disease;* therefore, routine surveillance is vital for planning future control of JE in Indonesia.


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