

# Japanese Encephalitis Surveillance in Cambodia: current status and activities (June 2007)



## JE SENTINEL SURVEILLANCE SITES

1. National Pediatric Hospital, Phnom Penh
2. Angkor Hospital for Children, Siem Reap
3. Takeo Provincial Hospital
4. Kampong Cham Provincial Hospital
5. Svay Rieng Provincial Hospital
6. Battambang Provincial Hospital\*

\*supported by Pasteur Institute

### **What Japanese Encephalitis surveillance activities are in progress in Cambodia?**

Hospital-based surveillance for JE in children under 15 years of age has been set up in selected sites by the Communicable Disease Control Department (CDC) and National Institute of Public Health (NIPH) of the Ministry of Health (MOH), in collaboration with PATH and WHO. Sentinel site surveillance at five hospitals commenced in May 2006 (see map); activities at a sixth hospital, in Battambang, started in December 2006 with support from Pasteur Institute.

Sites were chosen from geographically diverse parts of the country, and included facilities with a reasonable turnover of meningo-encephalitis (ME) cases and sufficient clinical capacity.

### **What are the objectives of surveillance?**

To collect accurate information on morbidity, mortality and patterns of JE disease, and to enable informed planning for JE control.

### **How does the surveillance system work?**

The Cambodian CDC Department, in collaboration with WHO, established a

syndromic reporting system for meningo-encephalitis in 2005. The sentinel JE surveillance system complements this syndromic system. Cases that meet the definition for meningo-encephalitis have epidemiological information gathered and specimens collected for JE testing, in addition to routine specimens collected for management purposes (see over page for case definitions used). Cerebrospinal fluid (CSF) and serum samples are transported to the NIPH laboratory in Phnom Penh for diagnostic testing using the Panbio JE-dengue IgM Combo ELISA test.

Epidemiological data are also analyzed, making the sentinel system a collaborative network between pediatricians, laboratory scientists, provincial CDC unit managers, and national units of the MOH.

### **What are the results to date?**

Between May 2006 and May 2007, all sentinel sites detected cases of JE. In total, 47 cases were detected at the six sentinel sites (Figure 1).

JE was confirmed in 17% of all meningo-encephalitis cases reported. This is likely an underestimate, as IgM antibodies may not be detected early in the course of illness, and in many cases a second

(convalescent) serum sample is not collected.

Preliminary data suggest a seasonal pattern with a marked increase in cases from July through August. Approximately 90% cases were in children 10 years of age or under (Figure 2).

These surveillance activities confirm JE is an endemic disease in Cambodia, substantiating the results of previous research studies.

**What additional activities are being conducted in 2007?**

Ongoing routine collection and analysis of surveillance data will greatly assist planning for control measures. To aid decision-making about vaccine introduction, PATH is collaborating with MOH on a research study to determine the cost-effectiveness of introducing a JE immunization program.

**Case Definitions Used**

**1. Case definition for meningo-encephalitis**

A person with acute onset of fever ( $\geq 38^{\circ}\text{C}$ ) and one of the following: neck stiffness, altered consciousness, other meningeal sign.

- Suspect in children <1 year of age when fever is accompanied by a bulging fontanelle.
- Does not include cases suspected to be caused by chronic infections such as tuberculosis or HIV.

*source: MOH CDC Department Manual*

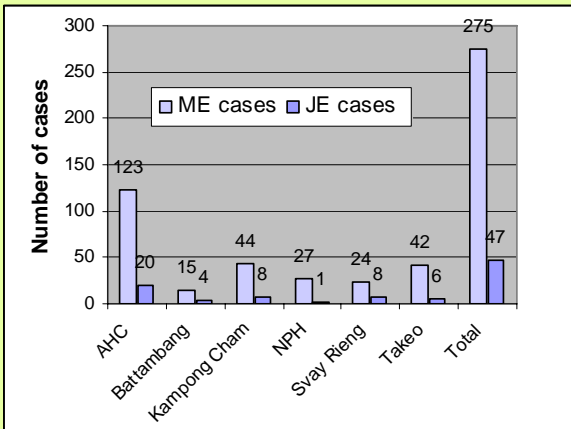
**2. Laboratory confirmation of JE**

Presence of JE virus-specific IgM antibody in a single sample of CSF or serum detected by an IgM-capture ELISA specifically for JE virus.

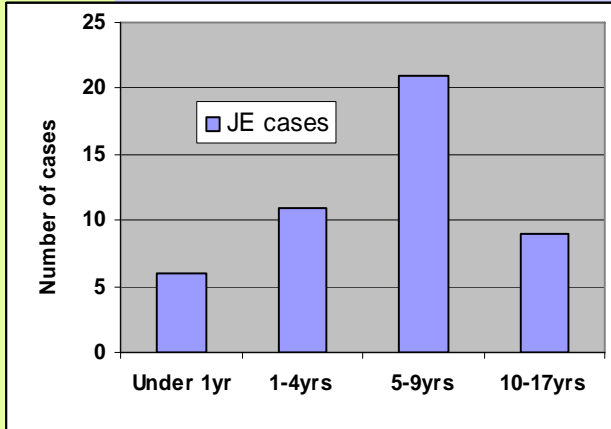
*\*source: WHO JE surveillance standards*

**Results from May 2006 to May 2007**

**Figure 1: Distribution of ME and JE cases by site**



**Figure 2: Distribution of JE cases by age group**



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