

An outbreak of Japanese B Encephalitis among Lao people from Xaignabouli, Laos at Nan Hospital June - July 2014



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Travel funding supported by The US Defense Threat Reduction Agency's (DTRA) Cooperative Biological Engagement Program (CBEP)

=Background=

- On 12 July 2014, Bureau of Epidemiology received a notification of a cluster of encephalitis among Lao people referred to 3 hospitals in Nan Province, Thailand. Three cases were identified, with one leading to death.
- We conducted an outbreak investigation at Nan Province in July 2014.
- The objectives were to confirm diagnosis and existence of outbreak, to describe the epidemiological characteristics and to recommend the prevention and control measure.

=Methods=

Descriptive epidemiological study

- Reviewed medical records of the patients at all three hospitals
- Interviewed attending clinician and case's relatives
- Collected samples of blood and cerebrospinal fluid to test for etiology
- Active case finding of encephalitis (fever with alteration of consciousness) among Lao and Thai people was done in the hospitals during May - July 2014

=Results=

- Totally four cases of encephalitis (2 males and 2 females) in Lao people were detected.
- One case died and three recovered with neurological complication.
- All cases lived nearby in Xaignabouli Province, Lao PDR.
- No additional case was identified among Thai people who live in the province during May - June 2014.
- JEV Encephalitis was reported in Nan province only single case in 2013 and 2011-2012 was no case reported.
- JEV3 coverage that surveyed in 2013 was 88 - 100% in Nan province.
- The demographic and clinical presentations among 4 cases shown in table 1.

Table 1 Demographic and clinical presentations of lab-confirmed Japanese Encephalitis among Lao people who referred to Thai Hospitals, Nan province June - July 2014

	Case# 1	Case# 2	Case# 3	Case# 4
Sex	Male	Female	Female	Female
Age (year)	16	17	18	1
Habitat	Hongsa, Xaignabouli, Laos	Xianghon, Xaignabouli, Laos	Hongsa, Xaignabouli, Laos	Xianghon, Xaignabouli, Laos
Onset Date	20 June 2014	30 June 2014	4 July 2014	14 July 2014
CT Brain	Brainstem lesion	Brainstem lesion	Leptomeningeal lesion	Not done
CSF profile	WBC 53 cells, Mononuclear 100%	WBC 720 cells, Mononuclear 85%	WBC 150 cells, Mononuclear 70%	WBC 115 cells, Mononuclear 99%
CBC-WBC	18,500 cells, NE 86%	8,200 cells, NE 76.4%	14,500 cells, NE 56%	15,000 cells, NE 60%
CSF-JEV IgM (< 40 unit)	Positive (107 Unit)	Positive (59 Unit)	Positive (140 Unit)	Positive (130 Unit)
CSF-DENV IgM (< 40 unit)	Negative (5 Unit)	Negative (12 Unit)	Positive (43 Unit)	Negative (20 Unit)
CSF-DENV IgG (< 100 unit)	Negative (23 Unit)	Negative (0 Unit)	Negative (34 Unit)	Negative (0 Unit)
Blood-JEV IgM (< 40 unit)	Positive (113 Unit)	Not available	Positive (92 Unit)	Not available
Blood-DENV IgM (< 40 unit)	Negative (8 Unit)	Not available	Negative (5 Unit)	Not available
CSF-Herpes Simplex Virus PCR	Negative	Negative	Negative	Negative
CSF-Pan-Enterovirus PCR	Negative	Negative	Negative	Negative
Outcome	Survived with neurodeficit	Died	Survived with neurodeficit	Survived with neurodeficit
Case Classification	Confirmed	Confirmed	Confirmed	Confirmed

=Discussions and Conclusion=

- We reported 4 cases of lab-confirmed Japanese Encephalitis among Lao people during June - July 2014 in the rainy season with abundance of mosquitoes.
- Most of the cases were adolescent but one was infantile. This reflects high circulation of JE virus in the communities.
- There will be more people infected without symptom since the ratio of symptomatic and asymptomatic is 1:300.
- There was no outbreak among Thai people because of high vaccine coverage of JEV among Thai children in the province (88-100%).
- Lao PDR implemented mass JEV vaccination for their 1.5 million population of children nationwide on 1st April 2015 by GAVI support.