

## ABSTRACT

Japanese encephalitis (JE) is a zoonotic disease and the main cause of viral encephalitis in South-east Asia and Western Pacific Region.

Secondary data analysis was done to describe the distribution of Japanese encephalitis cases among Acute Encephalitis Syndrome cases in Shan State before and after JE vaccination . According to this data, total 172 AES cases were reported in 2017 and 72 AES cases reported from first 6 months of 2018. In 2017, 26 AES cases were reported during first half of the year and 146 cases were reported from last 6 months. In compared with first 6 months of 2017, the numbers of AES cases were significantly high in first 6 months of 2018. Although the numbers of reported AES cases were increased, the proportions of JE among AES were decreased from 15.4% in first 6 months of 2017 to 5.5% in 2018. JE and AES cases were reported throughout the whole year but significantly highest in July. Rural area had higher JE cases than urban area except in 2017 January to June. Males had high rate of JE cases. The distribution of JE among AES case was highest in children who are 5-14 years of age except in 2018, in which the highest affected age group was 1-4 years.

Cross-sectional study was conducted in rural and urban area of Hsipaw Township in October, 2018. Face to face interview was done by the pretested structured questionnaire to assess awareness and perception towards JE vaccination services among 391 care givers of children aged 9 months to 16 years and to assess utilization of JE vaccine. The mean age of the respondents was  $36.6 \pm 10.8$  years; the majorities were Shan (66.5%) and female (92.1%). One-third of the respondents (31.2%) passed primary school and (37.1%) were manual workers. Only a few of the participants had good awareness on JE infection (2%). About 20% knew its symptoms and only 11.2% could answer it was caused by a virus. One-third of the respondents knew people living in rural area (33%) and people who feed pigs and wild birds were high risk persons (31%). About 40.1% of the respondents answered that JE can transmit from human to human and 16.1% of them didn't know JE can be prevented. However, 41% of respondents had good awareness on JE vaccination. Health staff was the major responsible person conducting health information in JE vaccination (70.7%). Among the children of the respondents, 92.8% were vaccinated; 86.8% at mass campaign, 13% at routine immunization program. Only 7.2% of the children

were unvaccinated. Large proportion of respondents exhibited good perception towards JE and vaccination (94.3%). People with high education status were significantly associated with good awareness on JE and its vaccination program. Bamar was more aware on JE vaccine than Shan and other race which was statistically significant. Although the level of awareness on JE was poor among the respondents, awareness on JE vaccination was fair and the perception was generally good. Therefore, health education about JE, its risk factors and prevention should be encouraged to increase the awareness and further study should be conducted to identify knowledge gaps.

Qualitative study was conducted in Hsipaw Township, Northern Shan State from September to December, 2018 to explore barriers and challenges to immunization service delivery by basic health staff in Hsipaw Township. Total 10 midwives were interviewed. And relevant documents were conducted and then thematic analysis was done. In this study, all the midwives have well experience in immunization services.. Vaccines supply were not the main challenges but the transportation and travelling costs, false believed about JE immunization due to media effects, low security and hard to reach areas and inadequate human resources, inadequate infrastructure, language barriers and inadequate health education, weak local administrators involvement and time limitation were the key factors for reducing JE immunization coverage during the campaign. Therefore actions focus on improving health knowledge of caretakers, increase public awareness and also closely collaboration with local authorities, local administrators and other organization should be needed. This study's results were highlighted to improvement of immunization services.