An Insight into Prevention of Plasmodium Knowlesi Malaria Infection at Batang Padang District, Perak

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ABSTRACT

INTRODUCTION: Zoonotic malaria infection among human has contributed to public health burden in Malaysia. In Batang Padang district, *Plasmodium knowlesi* malaria cases was 600% increase in 2018, while observing reduction in human malaria since 2012. This case report aims to describe an epidemiological investigation and integrated management of knowlesi malaria clusters at Batang Padang district in 2018, following identification of patients whom did not have clear risks for knowlesi malaria. **METHODS:** Registered malaria cases in 2018 at Batang Padang were investigated and managed using integrated vector management approach for risk factors of *P.knowlesi* infection. Identified cases, hosts and vectors data was plotted into risk map using geographical information system. Multi-agencies actions were implemented to halt ongoing malaria infection. **RESULTS:** A total of 27 patients infected with *P.knowlesi* were included with median age of 40.0 (IQR:17.0), consisted of 17(63.0%) males and 10(37.0%) females, and predominantly Orang Asli (81.5%). Most of them were geographically clustered into two localities. 18(66.7%) patients had history of jungle tracking within incubation period of knowlesi malaria, but 2(7.4%) children below 12 years old and 6(22.2%) women did not go into jungles. Nearly half (45.5%) of 11 macaques were identified to host *P.knowlesi*, while breeding of Anopheles leucosphyrus larvae were detected within the localities. All macaques were destroyed, and vector control was undertaken to observe reduction of knowlesi malaria cases. **DISCUSSION:** This study suggested petting a macaque as a risk behaviour among Orang Asli in Batang Padang and may add information in knowlesi malaria prevention, especially among this population.

KEYWORDS: zoonotic malaria, Plasmodium knowlesi, Orang Asli, malaria prevention, risk behaviour

An Outbreak of Norovirus in Kindergarten in District of Perak Tengah, Perak

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ABSTRACT

BACKGROUND: An outbreak of acute gastroenteritis (AGE) was reported from one of the kindergartens in the district of Perak Tengah on 10th January 2019. This was the second outbreak caused by Norovirus recorded in the district. **METHODS:** Active and passive case detection, environmental inspection at school, inspection and rating of food premise and food handles were carried out. Sampling of water sources, food (proxy) and clinical sample were taken for confirmatory. **RESULTS:** In total 14 cases of AGE (11 school children and three family members) were affected between 7th and 11th January 2019 out of 64 people exposed. The first onset was recorded on 7th January lead to peak of an outbreak on 9th and 10th January and end on 11th January 2019. The attack rate was 22% with majority presentation was upper gastrointestinal symptoms such as vomiting (100.0%), abdominal pain (100.0%), fever (79.0%), diarrhoea (50.0%) and giddiness (14.3%). Clinical sample for rectal swab (PCR) was positive for Norovirus. **CONCLUSION:** Norovirus has high survival rate in environment and easily infected other people through direct contact with clinical secretion or indirect contact through surfaces and foods. Environmental factor such as high density and close contact between children at school facilitate the transmission of disease. Early identification of cases and notification of disease contribute to more effective and successful prevention and control measures.

KEYWORDS: Norovirus, Gastroenteritis, Outbreak, School, Kindergarten