

# **Falciparum Malaria Outbreak in Sabah Linked to an Immigrant Rubber Tapper**

## **ABSTRACT**

Sabah is a Malaysian state situated in the northern part of Borneo, and it is endemic for malaria. The incidence of malaria is the lowest (0.05/1,000 population) in Penampang districts of Sabah. In June 26, 2012, two *Plasmodium falciparum* malaria cases were notified to public health department from a village in Penampang. Immediate investigation was initiated to identify the risk factors and to institute control measures. We performed active case finding by asking household members of all houses in the village regarding malaria symptoms and by examining blood smears. Environmental investigation was performed by collecting samples to detect mosquito breeding sites and to identify malaria transmitting vector mosquitoes. A case-control study with a ratio of 1:4 (11 cases and 44 controls) was conducted using self-administered questionnaire. The microscopic examination of blood smear for malarial parasite and entomology sampling was carried out. The malarial attack rate was 2.3%, 6/11 smears have gametocyte, and the case fatality rate was 9.1%. One case was a migrant rubber tapper from Indonesia which happened to be the first case with gametocyte positive. Overall, the incidence of malaria was higher (6/11) among rubber tappers. The odds of cases for those living nearby stagnant water were 7.3 [95% confidence interval: 1.2-43.5] times higher. In conclusion, an outbreak of *P. falciparum* malaria was introduced into a malaria-free village by a migrant rubber tapper, by whom the imported parasite was introduced to the community via vector *Anopheles balabacensis*. Living near stagnant water bodies was the risk factor in this outbreak.