Emerging challenges in malaria knowlesi outbreak control in Muallim District, Perak, Malaysia

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ABSTRACT

Introduction: The zoonotic malaria emerged as major malaria case in Muallim district since 2019 until epidemiological week (EW) 31/2024, highest in 2020, 100% (16 cases) and 2023, 83.3% (12 cases). The incident rate of malaria knowlesi in 2024 for the same EW duration projected 18% reduction (9 per 100,000 population, 78,600 Muallim population), comparatively 11 per 100,000 for 31/2023 EW. The first malaria knowlesi outbreak in Muallim district declared on 25th June 2024. **Objective:** The elimination of P. knowlesi - mediated malaria threatens progress towards elimination and effectiveness of conventional methods of malaria control.The objective of this paper aims to describe the challenges and limitation encountered along the process of controlling the outbreak of malaria knowlesi in Muallim District, Perak, Malaysia. **Materials and Methods:** Epidemiological investigations including risk assessment and vulnerability scoring, sociodemographic and occupational co-relation study, entomological risk assessment to determine the receptivity, active case detection using gold standard blood film for malarial parasite (BFMP), and leader engagement which necessitates urgent control measures. Preventive health education, insecticide treated net and outdoor residual spraying (ORS) are the control measures performed. **Results:** A systematic management and controlling activities carried out preceded by the declare of the outbreak, following a case notified on 23rd June 2024 by Hospital Slim River and a second case identified via active case detection conducted on 24th June 2024 at Diamond Creek Eco Farm Sdn.Bhd, Tanjong Malim, Perak involving 92 cases (Level 1 close contact), among which 96% are foreigners (88 cases).Various method used to control the outbreak, till dated 6th August 2024, no new cases reported. **Conclusion:** Plantation, deforestation and ecotourism tremendous development in Muallim district, Perak, Malaysia coupled with the known availability of wild macaques and Anopheles vectors warrants a significant challenge in the control of malaria knowlesi infection, hence the need to improve the control measures and interagency collaboration at national level.