

Adult male farmers most at risk of contracting monkey malaria in Malaysia

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An international team of researchers has identified risk factors in humans which have contributed to the rise in cases of *Plasmodium knowlesi* (*P. knowlesi*) malaria as the latest threat to eliminating malaria throughout Southeast Asia.

Results of the collaborative study, the first case-control study of *P. knowlesi* malaria, have been published today in the new international journal, *The Lancet Planetary Health*.

Now the most common cause of malaria in Malaysia, *P. knowlesi* malaria is a type of monkey malaria transmitted to humans via mosquito vectors from the natural macaque hosts in habitats surrounding local populations in areas across Southeast Asia. It has a rapid growth rate in the blood that can lead to high levels of parasites in a short time and can cause severe and fatal disease.

Lead author, Menzies School of Health Research research fellow, Dr Matthew Grigg has specialised in identifying and researching risk factors and treatment for *P. knowlesi* malaria in Sabah, Malaysian Borneo.

'Malaysia's national malaria eradication plan is proving extremely effective in reducing case numbers of other types of malaria, however we have found cases of *P. knowlesi* are on the rise due to a number of human behavioural factors.

'Our research indicates adult males are most at risk of contracting this type of malaria from activities such as farming, land clearing activities, working on palm oil plantations, and travelling or sleeping outside,' Dr Grigg said.

The study also identified certain methods of housing construction and surrounding forest and agricultural land types which contributed to the increasing number of rural cases of *P. knowlesi* malaria presenting to health facilities. Further investigation into the characteristics of mosquito and macaque populations are ongoing.

Chris Drakeley, Professor of Infection & Immunity from the London School of Hygiene & Tropical Medicine, and principal collaborator on the study said: '*P. knowlesi* is a complex and potentially life threatening parasite. The rise in cases not only threaten the great gains Malaysia has made in eradicating malaria, but are a warning sign for other countries in Southeast Asia. Conventional approaches used to tackle malaria such as nets or drugs can't be used to combat *P. knowlesi* as monkeys are the host and risk is associated with outdoor work. Our study offers important insight into where social interventions are likely to have the biggest impact.

'This is a unique interdisciplinary study which harnessed the expertise of a range of partners and organisations to help describe the risk of *P. knowlesi* infection. We will continue to work with our colleagues in the Malaysian Ministry of Health to improve awareness and education for local residents about areas of risk and how they can prevent mosquito bites,' Professor Drakeley said.

The study was funded through the UK Medical Research Council, the Australian National Health and Medical Research Council, and the Malaysian Ministry of Health.

The paper is available at [The Lancet Planetary Health](#) (once the embargo has been lifted).

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Menzies School of Health Research

Menzies School of Health Research is one of Australia's leading medical research institutes dedicated to improving Indigenous, global and tropical health. Menzies has a history of over 30 years of scientific discovery and public health achievement. Menzies works at the frontline, joining with partners across the Asia-Pacific as well as Indigenous communities across northern and central Australia. Menzies collaborates to create new knowledge, grow local skills and find enduring solutions to problems that matter.

Menzies' work in tropical health is funded by the National Health Medical Research Council and Department of Foreign Affairs and Trade, building translational research capacity in the north of Australia and with collaborative partners across the Asia-Pacific.