

NO LONGER ONLY MONKEY BUSINESS

THE NEED

Human malaria parasites continue to wreak havoc on people in our region, and now a major new threat is emerging, the monkey parasite called *Plasmodium knowlesi*. Previously confined to monkeys, it has now successfully jumped to the human population, transmitted by mosquitoes from monkeys to humans. *Knowlesi* is a killer and its toll on kidney health in particular can be fatal. So, accurate diagnosis of *knowlesi* is vital.

Knowlesi has been found in every country in SE Asia except Laos and Timor Leste, yet Malaysia is the only country carefully testing for it. There, cases are turning up in the thousands. Disturbingly, they're now seeing *knowlesi* causing over 75% of ALL malaria cases, demonstrating the severity of the situation and the difficulty in successful prevention and treatment.

Human encroachment into monkey habitats with increases in forest clearing have heightened the risk of monkey to human transmission. Transmission from humans to humans without monkeys has also been shown. If this becomes established it will be a problem for all of us in the Asia Pacific region, as *knowlesi* will be even more severe if it spreads this way. And if the monkey is gone from the equation, it puts Australia at risk. Clearly, it's in our best interests, as well as those of our region, to act on *knowlesi* as a matter of urgency, and with every weapon at our disposal.

THE PARTNERSHIP OPPORTUNITY

One of the most serious complications of *knowlesi* is acute renal failure. It means that if people present very late with the disease, they're likely to die. Pilot data collated by Menzies and their partners, however, has found that specific doses of simple over-the-counter paracetamol administered over an intensive period can prevent renal failure with severe malaria. It's an exciting breakthrough, but so far, only a small trial has been conducted.

Menzies now seeks partnership support for a larger trial in 200 people in Sabah, Malaysia. If the results of the first trial are borne out, these findings will support the adoption of a new national treatment policy in Malaysia, as well as changes to World Health Organisation protocols.

THE IMPACT

Above and beyond discovering if intensive treatment with paracetamol is going to be an effective antidote to the kidney injuries sustained in advanced *knowlesi*, the trial also has potential to be used in any malaria, and indeed any disease characterised by destruction of red cells in the blood. If it works, it represents a cheap, readily available treatment solution – critical in SE Asia's poorest nations. In overburdened, under-resourced health systems it gets people out of hospital faster, and its sufferers alive and productive.

From the outset, this project aims to save lives in Malaysia. If successful, it will save thousands of lives across the world.

PARTNERSHIP SOUGHT

Menzies requires \$100,000 to run the trial in its entirety, including \$12,500 to pay each malaria nurse for a year, \$20,000 to train local health workers, \$2000 to purchase iPads for improved data collection, and \$40,000 for other important aspects such as laboratory studies, capacity building for our main research partners in the region, support to boost patient recruitment, and policy development and engagement to increase potential impact at the global level.

STATS AND FACTS

- In 2015, an estimated 438,000 people lost their lives to malaria. In 2000 this figure was 839,000
- Better prevention and control measures have led to a 60% reduction in malaria mortality rates globally since 2000
- About 3.2 billion people – nearly half of the world's population – are at risk of malaria. This figure includes 1.33 billion people in South East Asia
- New strains of malaria pose a risk to global efforts to eradicate malaria entirely
- Many of the measures used to prevent human-only strains of malaria do not prevent transmission of malaria from monkeys (*Plasmodium knowlesi*).
- Over 75% of malaria in Malaysia is now due to this monkey parasite. When sought, it is now increasingly found in Indonesia.
- Monkey malaria parasites are more likely to cause severe disease and death in humans than the human-only species.

“Deforestation, changing land use, population mobility and increased human-monkey contact are causing patterns of malaria to rapidly change. We need new treatments for the life-threatening complications of malaria. We need to move fast, act decisively, and share life-saving research discoveries.” – Professor Nick Anstey

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