

# TOWARDS ELIMINATING MALARIA



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**DRUGS AND DRUG  
RESISTANCE**

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**VACCINES**

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**DIAGNOSTICS**

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**PREVENTION AND  
SURVEILLANCE**

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**COMMUNITY  
EMPOWERMENT**

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**Burnet Institute**  
Medical Research. Practical Action.

# A PATHWAY TO ELIMINATING MALARIA

**DISCOVERY RESEARCH. INNOVATION. COMMUNITIES.**

Every two minutes a child dies from malaria. Imagine the devastating impact this has on families and their communities.

Despite a major reduction globally in malaria-related mortality rates through prevention and treatment efforts, more than 430,000 people – mainly young children – are still dying each year from this preventable disease. According to the World Health Organization (WHO) more than 90 countries are impacted by malaria, many in the Asia-Pacific region. Australia's and the global response towards eliminating malaria requires a dual approach of preventing infections and stopping malaria-related deaths.

Burnet Institute is committed to making a major contribution in efforts to eliminate malaria as a public health threat, particularly in the Asia-Pacific region. We work with partners in Australia and internationally, especially in malaria-endemic regions in the Pacific, Southeast Asia and East Africa (including Papua New Guinea, Myanmar, Vietnam, Lao PDR, Kenya, and Cambodia). We also collaborate with industry partners in development of vaccines, diagnostics and therapeutics.

## **Our Eliminate Malaria Program aims to:**

- Achieve major new advances to strengthen diagnosis, treatment and prevention of malaria through innovative research
- Contribute to the World Health Organization Global Elimination Targets of a 90 per cent reduction in malaria incidence and mortality. This will be achieved through discovery-based laboratory and translation research, and in-field education, prevention and treatment public health programs
- Support National Malaria Control Programs in our region in reaching the WHO elimination targets.

## **MALARIA AT BURNET**



**50+**

**researchers and public health professionals**  
focussing on malaria



**25+**

**research projects**



**10+**

**working groups**

Malaria is an acute febrile illness caused by different species: *Plasmodium falciparum*, *P. vivax*, *P. ovale*, *P. malariae* and *P. knowlesi*. *Falciparum* causes the majority of malaria disease globally and if not promptly treated, may lead to death.

## LATEST DISCOVERIES AND INNOVATIVE APPROACHES

Discovering new insights into how drug resistance may emerge in populations and how to better quantify and monitor its spread.

Identified new antimalarial compounds with potential for development into drugs.

Identified immune responses that protect against malaria and new approaches for vaccine development.

Developing new low-cost diagnostic tests to guide the treatment of malaria.

Developing novel tools to enhance surveillance and tracking of malaria in populations.

In affected communities created strategies to address gaps in health services and coverage to improve diagnosis, treatment, and prevention.



# KEY STRATEGIES

## DRUGS AND DRUG RESISTANCE

- Developing new antimalarial drugs and tracking and preventing the spread of drug resistance, especially in the Asia-Pacific region.

## DIAGNOSTICS

- Creating new malaria diagnostics and tools and strategies for improved malaria treatment and enhanced surveillance.

## VACCINES

- Understanding immunity to malaria to develop effective vaccines against the two major causes of human malaria, *P. falciparum* and *P. vivax*.
- Advancing the development and evaluation of leading vaccine candidates.

## PREVENTION AND SURVEILLANCE

- Establishing surveillance and response systems to improve efficiency of malaria control and to fast track the pathways to elimination.
- Developing and evaluating improved malaria prevention strategies.

## COMMUNITY EMPOWERMENT

- Operational and implementation research to increase access to quality health care services and malaria prevention.
- Supporting improved health behaviours, strengthening health systems and delivery of health care, and supporting communities in malaria elimination activities.



# ABOUT BURNET INSTITUTE

Burnet Institute is an Australian, unaligned, independent, not-for-profit organisation. Our mission is to achieve better health for vulnerable communities in Australia and internationally by accelerating the translation of research, discovery and evidence into sustainable health solutions.

## MALARIA AT BURNET

### **Global Health Diagnostics Development**

Co-Heads: Associate Professor David Anderson and Ms Mary Garcia

### **Global Health: policy, practice and community action**

Co-Heads: Ms Lisa Davidson, Mr Chad Hughes

### **Healthy Mothers, Healthy Babies (PNG)**

Head: Professor James Beeson

Principal Investigator: Dr Chris Morgan

### **Malaria and Infectious Diseases Epidemiology**

Head: Associate Professor Freya Fowkes

### **Malaria and Tropical Diseases Group**

Head: Dr Jack Richards

### **Malaria Immunity and Vaccines**

Head: Professor James Beeson

### **Malaria Virulence and Drug Discovery**

Co-Heads: Professor Brendan Crabb AC and Dr Paul Gilson

### **Modelling and Biostatistics**

Head: Professor David Wilson

### **Translational Genomics**

Head: Associate Professor Alyssa Barry

### **Vector-Borne Diseases and Tropical Public Health**

Head: Dr Leanne Robinson

## Medical Research. Practical Action.

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**Burnet Institute**  
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We have offices or representatives in Australia, Myanmar, Papua New Guinea, China and Lao PDR, and also contribute to activities in other African, Asian and Pacific countries.