

Partner studies: GenRe manuscript

1125-PF-TH-NOSTEN

Investigating artemisinin resistance emergence on Thai-Burmese border

P. falciparum resistance to artemisinin derivatives emerged on the Thai Myanmar border between 2000 and 2010. The Shoklo Malaria Research Unit (SMRU) has collected phenotypic data on more than 3,000 patients with uncomplicated hyperparasitaemia and stored packed red blood cells for over 600 at the time of admission. This constitutes a unique collection of samples available for genomic analysis to determine changes in the parasite population structures and to identify potential molecular markers associated with resistance to artesunate.

Key people:

- **Francois Nosten** (Contact person, francois@tropmedres.ac)
Shoklo Malaria Research Unit, Thailand

1148-PF-BD-MAUDE

Assessing the contribution of migration to the emergence and spread of antimalarial drug resistance in Southeast Bangladesh

This study measured population movement by travel surveys and mobile phone call record data and combined these with parasite genotype data and malaria incidence to examine the role of population movement on the spread of malaria and antimalarial drug resistance.

Key people:

- **Richard J Maude** (Contact person, richard@tropmedres.ac)
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Caroline Buckee**
Harvard TH Chan School of Public Health, USA
- **Md Amir Hossain**
Chittagong Medical College, Bangladesh
- **M Abul Faiz**
Dev Care Foundation, Bangladesh
- **Arjen M Dondorp**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Nicholas PJ Day**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1172-PF-KH-FAIRHURST-SM

Resistance to artemisinin and ACT partner drugs in Cambodia

Investigating clinical and molecular aspects of resistance to artemisinin and ACT partner drugs, in particular piperaquine.

Key people:

- **Thomas E Wellems** (Contact person, twellems@niaid.nih.gov)
National Institute of Allergy and Infectious Diseases (NIAID), NIH, USA
- **Rick Fairhurst**
National Institutes of Health (NIH), USA

1179-PF-KH-TME-VONSEIDLEIN

Targeted Chemo-elimination (TCE) of Malaria (TME)

Targeted Malaria Elimination (TME) studies took place in western Myanmar, Vietnam, Cambodia, and Laos during 2013-17, led by the Mahidol-Oxford Tropical Medicine Research Unit. This project consisted of 2 stages. Firstly, multiple malaria prevalence surveys and collection of treatment records to define the epidemiology of the asymptomatic reservoir, infection risk factors, prevalence of simian malarias, and spatio-temporal mapping. Secondly, a controlled clinical trial of mass drug administration which successfully interrupted falciparum transmission. MORU's project was funded by the Wellcome Trust and the Bill and Melinda Gates Foundation.

Key people:

- **Lorenz von Seidlein** (Contact person, lorenz@tropmedres.ac)
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Tom Peto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Rupam Tripura**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Arjen Dondorp**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Nicholas J White**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1180-PF-TRAC2-DONDORP

Tracking Artemisinin Resistance Collaboration (TRAC II)

A multi-centre, open-label randomized trial to assess the efficacy, safety and tolerability of Triple Artemisinin-based Combination Therapies (TACTs) compared to Artemisinin-based Combination Therapies (ACTs) in uncomplicated falciparum malaria and to map the geographical spread of artemisinin and partner drug resistance.

Key people:

- **Arjen Dondorp** (Contact person, arjen@tropmedres.ac)
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Rob Van der Pluijm**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1181-PF-VN-THUYNHIEN

Monitoring the susceptibility of *P falciparum* to antimalarial drugs in malaria endemic areas in southern Vietnam

Routine monitoring of the efficacy of anti-malarial drugs used is necessary for effective case management, early detection of drug resistance and to provide background information for the development and evaluation of drug policies. In parallel with yearly clinical monitoring the susceptibility of *P. falciparum* to current ACT used in Vietnam, the study aims to investigate the molecular markers (to artemisinin and partner drugs) and using them to support the early detection of drug resistance - one of actions required in dealing with the emergence and possible spread of *P. falciparum* resistance.

Key people:

- **Thuy-Nhien Nguyen** (Contact person, nhienntt@oucru.org)
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Tran Tinh Hien**
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Le Thanh Dong**
Institute of Malariology, Parasitology, and Entomology - Ho Chi Minh City (IMPE-HCM), Vietnam
- **Ngo Viet Thanh**
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Tuyen Nguyen Thi Kim**
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1198-PF-METF-NOSTEN

Malaria Elimination Task Force

The objectives of this programme were to scale-up the targeted mass drug administration strategy regionally, and measure its effect on the incidence of clinical malaria in eastern Karen/Kayin state, Myanmar, a difficult-to-access hilly and forested area with complex political and geographical landscapes, where malaria transmission is seasonal and where artemisinin resistant *P. falciparum* is prevalent.

Key people:

- **Francois Nosten** (Contact person, francois@tropmedres.ac)
Shoklo Malaria Research Unit, Thailand
- **Aung Myint Thu**
Shoklo Malaria Research Unit, Thailand

1207-PF-KH-CNM-GENRE

Integrating genetic epidemiology as an intensified surveillance tool into the National Center for Parasitology Entomology and Malaria Control of Cambodia

Genetic surveillance project conducted by the National Malaria Control Programme in partnership with GenRe-Mekong in endemic regions of Cambodia. This is part of a large project of genetic surveillance of malaria in the Greater Mekong Subregion, funded by the Bill and Melinda Gates Foundation. Dried blood spot (DBS) samples are to be collected along with short surveys on patient demographics and population movement from every confirmed case of *P. falciparum* and/or *P. vivax* malaria presenting at public health facilities. The aim is to determine the prevalence and geographic distribution of antimalarial drug resistance-linked genetic mutations, as well as the genetic structure of the parasite population, likely routes of gene flow between populations, and geographic origins of parasites.

Key people:

- **Cheah Huch** (Contact person, huch.cnm@gmail.com)
National Center for Parasitology, Entomology and Malaria Control, Cambodia
- **Rithea Leang**
National Center for Parasitology, Entomology and Malaria Control, Cambodia
- **Richard J Maude**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1208-PF-LA-CMPE-GENRE

Genetic epidemiology of *P. falciparum* malaria and associated antimalarial drug resistance in Lao PDR

Genetic surveillance project conducted by the National Malaria Control Programme in partnership with GenRe-Mekong in endemic region of the Lao PDR. This is part of a large project of genetic surveillance of malaria in the Greater Mekong Subregion, funded by the Bill and Melinda Gates Foundation. Dried blood spot (DBS) samples are to be collected along with short surveys on patient demographics and population movement from every confirmed case of *P. falciparum* and/or *P. vivax* malaria presenting at public health facilities. The aim is to determine the prevalence and geographic distribution of antimalarial drug resistance-linked genetic mutations, as well as the genetic structure of the parasite population, likely routes of gene flow between populations, and geographic origins of parasites.

Key people:

- **Mayfong Mayxay** (Contact person, mayfong@tropmedres.ac)
 1. Lao-Oxford-Mahosot Hospital-Wellcome Trust Research Unit (LOMWRU), Vientiane, Lao PDR
 2. Institute of Research and Education Development (IRED), University of Health Sciences, Ministry of Health, Vientiane, Lao PDR
- **Keobouphaphone Chindavongsa**
Center of Malariology, Parasitology and Entomology (CMPE), Lao PDR
- **Viengxay Vanisaveth**
Center of Malariology, Parasitology and Entomology (CMPE), Lao PDR
- **Richard J Maude**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1209-PF-VN-IMPEQN-GENRE

Genetic epidemiology of *P. falciparum* malaria and associated antimalarial drug resistance in Central Vietnam

Genetic surveillance project conducted by the National Malaria Control Programme in partnership with GenRe-Mekong in endemic region of Vietnam. This is part of a large project of genetic surveillance of malaria in the Greater Mekong Subregion, funded by the Bill and Melinda Gates Foundation. Dried blood spot (DBS) samples are to be collected along with short surveys on patient demographics and population movement from every confirmed case of *P. falciparum* and/or *P. vivax* malaria presenting at public health facilities. The aim is to determine the prevalence and geographic distribution of antimalarial drug resistance-linked genetic mutations, as well as the genetic structure of the parasite population, likely routes of gene flow between populations, and geographic origins of parasites.

Key people:

- **Thuy-Nhien Nguyen** (Contact person, nhiennntt@oucru.org)
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Huynh Hong Quang**
Institute of Malariology, Parasitology, and Entomology - Quy Nhon (IMPE-QN), Vietnam
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1210-PF-TH-MAUDE

Epidemiology of malaria in northeast Thailand: a case-control study

This study aimed to determine risk factors for catching malaria in northeast Thailand, including travel, to identify where people were likely being infected and determine how much antimalarial drug resistance there is.

Key people:

- **Richard J Maude** (Contact person, richard@tropmedres.ac)
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Rapeephan R Maude**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Borimas Hanboonkunupakarn**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
Mahidol University, Thailand
- **Mallika Imwong**
Mahidol University, Thailand
- **Kesine Chotivanich**
Mahidol University, Thailand
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Arjen M Dondorp**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand

1238-PF-VN-NIMPE-GENRE

Research on malaria molecular and genomic epidemiology in all drug-resistance regions of Vietnam: case-control research on the risk factors

Genetic surveillance project conducted by the National Malaria Control Programme in partnership with GenRe-Mekong in endemic regions of Vietnam. The study aimed to determine risk factors for catching malaria in high endemic areas of Viet Nam, including travel, to identify where people were likely being infected and determine how much antimalarial drug resistance there is. Dried blood spot (DBS) samples were collected along with surveys on potential risk factors from every confirmed case of *P. falciparum* and/or *P. vivax* malaria presenting at public health facilities. The aims of the genetic analysis were to determine the prevalence and geographic distribution of antimalarial drug resistance-linked genetic mutations, as well as the genetic structure of the parasite population, likely routes of gene flow between populations, and geographic origins of parasites.

Key people:

- **Thuy-Nhien Nguyen** (Contact person, nhienntt@oucru.org)
Oxford University Clinical Research Unit (OUCRU), Vietnam
- **Ngo Duc Thang**
National Institutes for Malariology, Parasitology, and Entomology (NIMPE), Vietnam
- **Richard J Maude**
Mahidol-Oxford Tropical Medicine Research Unit (MORU), Thailand
- **Hoa Nguyen**
Vysnova Partners, Inc.
- **Nicole Zdrojewski**
Vysnova Partners, Inc.
- **Olivo Miotto**
Mahidol Oxford Tropical Medicine Research Unit (MORU), Thailand